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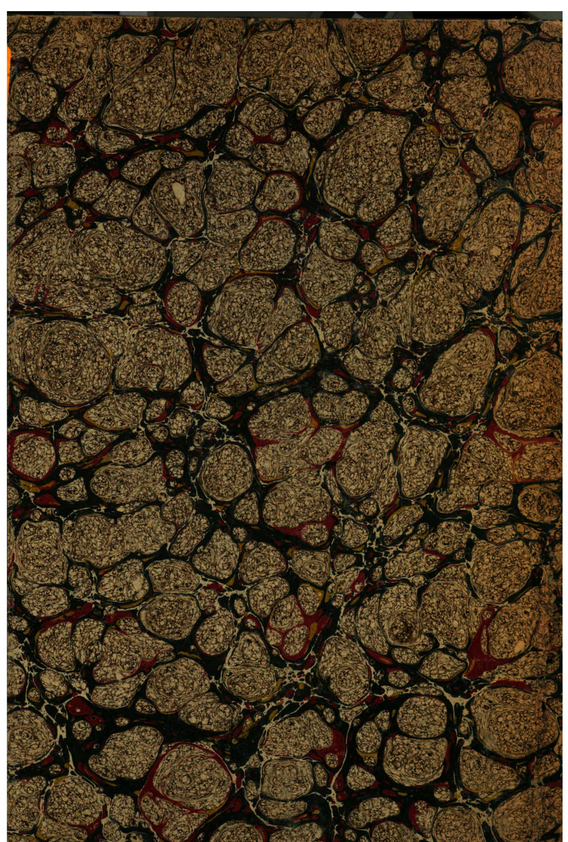
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Volume XIX New York N. Y., U. S. A., October 1, 1908 Number 1

THE MOTOR WORLD

A trade paper giving the World's Motor News

Ten cents a copy—
Two dollars a year

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OCT 5 1908
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A LAMP QUESTION—AND THE ANSWER!!

Why do the leading motor car manufacturers of this country equip with SOLAR LAMPS in preference to all others? Why do they pay us a higher price?

Because—

Solar Lamps are the best automobile lamps in the world—bar none. They have more good points than all other makes combined. It is impossible to make a better lamp.

Solar equipment will be found on the following cars:

Apperson	Kissel	Pierce
Autocar	Lozier	Rambler
American	Marmon	Stoddard-Dayton
Corbin	Packard	Stearns
Chalmers-Detroit	Peerless	Thomas
Franklin	Pope-Hartford	White

Complete catalogue upon request.

Badger Brass Mfg. Co.
606 LYMAN AVENUE, KENOSHA, WIS.

Solar Lamps

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THE STAMP of APPROVAL of the MECHANICAL BRANCH of the A.L.A.M.



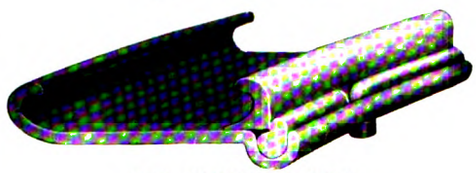
THE Standard Universal Quick Detachable Rim

THE RIM DECIDED ON FOR 1909

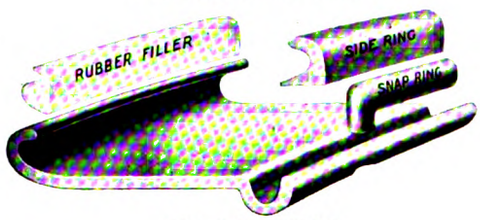
The cuts show the simplicity of operation and the mechanical worth of the rim.



FOR DUNLOP TIRE



FOR CLINCHER TIRE



RIM AND PARTS

¶After two years of consideration, the automobile manufacturers have chosen the Standard Universal Quick Detachable Rim as the most desirable of all the rims shown to be the standard equipment for American cars as soon as this change can be conveniently brought about. Its adoption signifies its perfection.

¶ There are only two parts to remove—the side ring and the snap or locking rim. Accommodates all standard sizes of tires, Clincher or Dunlop. To insure standard equipment all around, specify

Hartford Tires AND Standard Universal Quick Detachable Rims

THE HARTFORD RUBBER WORKS CO., Hartford, Conn.

BRANCHES—NEW YORK, 57th St. and Broadway; CHICAGO, 83 Michigan Ave.; BOSTON, 817 Boylston St.; DETROIT, 256 Jefferson Ave.; DENVER, 1564 Broadway; PHILADELPHIA, 1425 Vine St.; ATLANTA, GA., 94 North Pryor St.; BUFFALO, 725 Main St.; CLEVELAND, 1831 Euclid Ave.

AGENCIES—Pierson-Wilcox Elec. Co., Minneapolis; Mercantile Lumber and Supply Co., Kansas City; St. Louis Tire Agency, St. Louis, Mo.; Chanslor & Lyon Motor Supply Co., 930 S. Main St., Los Angeles, Cal.; 542 Golden Gate Ave., San Francisco, Cal.; F. P. Keenan Co., Portland Ore.; Compania Mexicana de Vehiculos Electricos, City of Mexico.

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The Most Marvelous Speed-Indicator Proposition Ever Offered

A NEW

JONES SPEEDOMETER

PRICE **$15** (Model 30) PRICE **$15**

50 Mile Speed Scale

This remarkable offering of a Jones Speedometer for $15.00 will revolutionize the entire speed-indicator industry. It has been made possible through the evolution of speed-indicator construction as practised by this company, and also for reason of the large economies resulting from manufacturing and purchasing in enormous quantities. Furthermore the Jones Speedometer is built in the largest factory of its kind in the world. This fact alone enables this company to produce a speedometer absolutely accurate, handsomely finished and perfectly calibrated for the remarkable price of $15.00—an accomplishment never attempted by any other manufacturer. It means that every motorist can and will equip his car with the most necessary of all accessories—a Jones Speedometer.

The stringent observance of the speed laws throughout this country has made it imperative for every owner or driver of a motor car to carry a speed-indicator. It absolves him from unwarranted arrest—enables him to know his speed at all times. **COMPLETE FITTINGS FOR EVERY MAKE OF CAR.**

PRICE LIST IN EFFECT OCTOBER 1, 1908

Model 30—3-inch Dial, 50 Mile Speed Scale	$15.00
Model 22—3-inch Dial, 50 Mile Speed Scale, with Veeder Season Odometer	20.00
Model 20—3-inch Dial, 50 Mile Speed Scale, with with Veeder Trip Odometer	30.00
Model 21—3-inch Dial, 60 Mile Speed Scale, with with Veeder Trip Odometer	35.00
Model 27—3-inch Dial, 50 Mile Speed Scale, with Enclosed Jones Season Odometer	25.00
Model 28—3-inch Dial, 50 Mile Speed Scale, Enclosed Jones Trip Odometer with Instantaneous Reset	40.00
Model 29—4-inch Dial, 60 Mile Speed Scale, Enclosed Jones Trip Odometer with Instantaneous Reset	50.00
Model 14—3-inch Dial, 50 Mile Speed Scale, Maximum Hand Jones Trip Odometer with Instantaneous Reset	75.00
Model 15—4-inch Dial, 60 Mile Speed Scale, Maximum Hand Jones Trip Odometer with Instantaneous Reset	90.00
Model 16—4-inch Dial, 100 Mile Speed Scale, Maximum Hand Jones Trip Odometer with Instantaneous Reset	$100.00
Model 16—3-inch Odometer	25.00
Model 17—3-inch Clock	30.00
Model 18—4-inch Clock	45.00
Model 22—With Auto Clock and Light, 3-inch Dials	55.00
Model 20—With Auto Clock and Light, 3-inch Dials	65.00
Model 21—With Auto Clock and Light, 3-inch Dials	70.00
Model 27—With Auto Clock and Light, 3-inch Dials	60.00
Model 28—With Auto Clock and Light, 3-inch Dials	75.00
Model 29—With Auto Clock and Light, 4-inch Dials	100.00
Model 14—With Auto Clock and Light, 3-inch Dials	110.00
Model 15—With Auto Clock and Light, 4-inch Dials	140.00
Model 16—With Auto Clock and Light, 4-inch Dials	150.00



Instruments for Bicycle and Motorcycle Use

Model 2—3-inch Dial, 50 Mile Speed Scale, Friction Drive Nickel Finish	$15.00
Model 2G—3-inch Dial, 50 Mile Speed Scale, Gear Drive Nickel Finish	15.00
Model 24—3-inch Dial, 50 Mile Speed Scale, on handle bar, driven by flexible shaft	20.00
Model 25—3-inch Dial, 60 Mile Speed Scale, on handle bar, driven by flexible shaft	20.00
Model 26—3-inch Dial, 60 Mile Speed Scale, Nickel Finish, on handle bar, driven by flexible shaft	25.00

THE JONES SPEEDOMETER

76th Street and Broadway **NEW YORK**

BOSTON 109 Massachusetts Ave. | CHICAGO 1421 Michigan Ave. | DETROIT 247 Jefferson Ave. | PHILADELPHIA 259 No. Broad St. | CLEVELAND 1841 Euclid Ave.

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THE KING OF ALL RUNABOUTS

MAXWELL JUNIOR

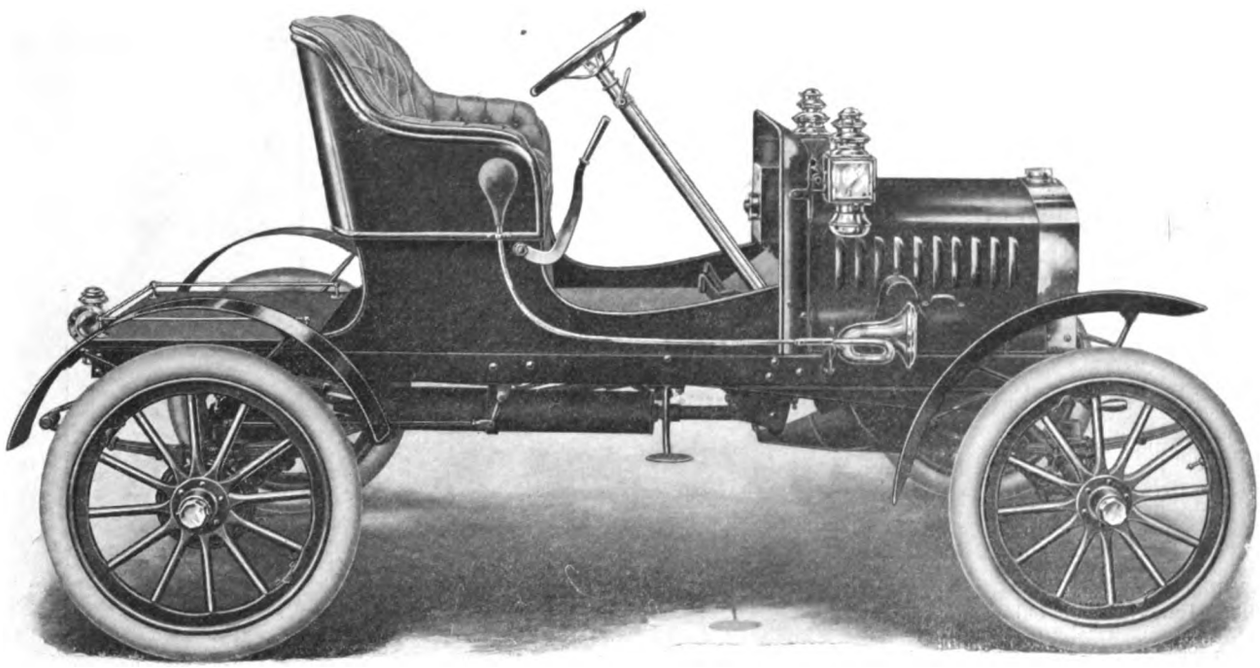
$500 Two-Cylinder Standard American Runabout.

As handsome a car as the heart of the most exacting motorist could desire; from cooler to tail light gay, debonair, dapper and deft; every line indicating fleetness and power; eloquent of comfort and new-found pleasure in every mechanical detail—such is the new Maxwell Junior.

And—to make the measure of surprise full to overflowing, this marvelous example of automobile value is offered for sale at

$500

a price at which it is difficult to purchase a first class horse and carriage.



Maxwell Junior—Model A

Yet, though it is as cheap as the horse and buggy, what a difference in **performance** and **genuine usefulness.**

Instead of the eight-mile-an-hour pace to which the horse is accustomed the Maxwell Junior is capable of speeding along at **forty miles an hour.**

Instead of the 3½ or 4 miles which constitute the average daily travel of the buggy horse the radius of mobility is practically unlimited for the Maxwell Junior.

Requiring no grooming or horseshoeing, no watering or feeding, no veterinary attention, untiring, unfailing in its reliability, and, last but not least: infinitely **cheaper in point of upkeep,** the Maxwell Junior $500 Two-Cylinder Standard American Runabout appeals to everyone of the more than 800,000 people who purchase horses and buggies each year, in the United States.

The **equipment** of the Maxwell Junior is complete and includes pneumatic tires, lamps, horn with flexible tube, tools, tire repair kit, etc. The **car** is complete, without afterthoughts, and the purchaser receives his car in shape for a trip of 50, 500 or 5,000 miles.

Every single item of the Maxwell Junior's specification spells correct design, careful construction, substantiality, real comfort, and

UNAPPROACHABLE VALUE.

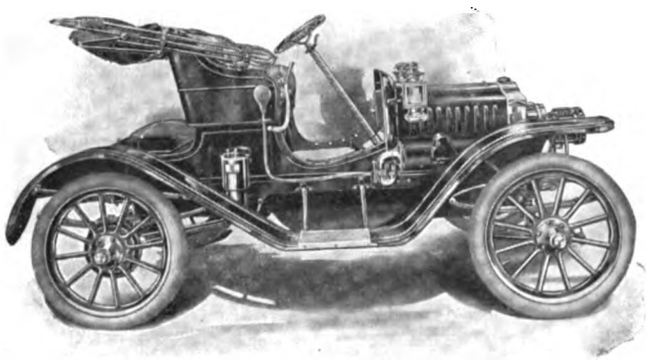
More detailed information concerning the Maxwell Junior $500 Standard American Runabout is contained in a special circular, which will be sent free upon application.

Benj Briscoe
President.

Maxwell-Briscoe Motor Co. Main Office, TARRYTOWN, N. Y.
Factories, Tarrytown, N. Y. New Castle, Ind. Pawtucket, R. I.

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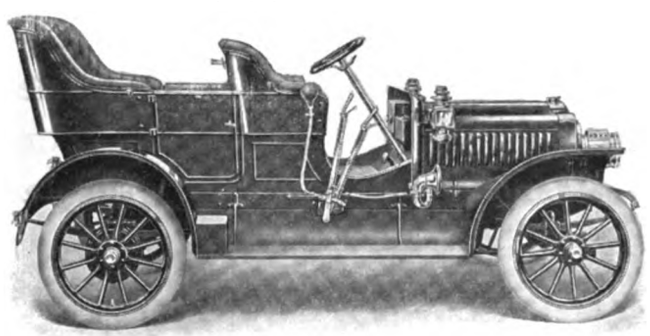
MAXWELL-BRISCOE MOTOR COMPANY—OTHER 1909 MODELS



Two-Cylinder 14 H. P. Runabout, Model LD

Equipped with top, gas lamps and generator. Wheel base 84 inches. Full elliptic springs in front and rear. Wheels 30 inches. Tires 30x3 inches. Enclosed running boards. **Magneto a part of equipment.** Price $825.

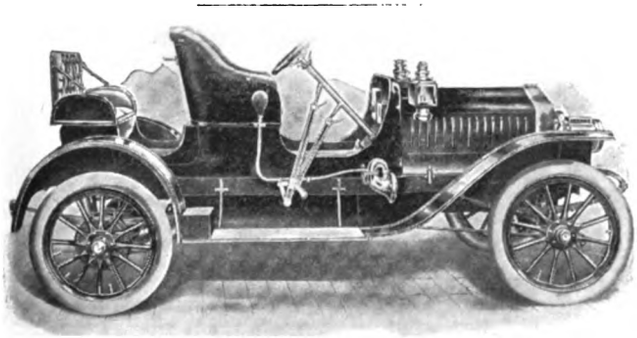
Model L D is the ideal motor car for the man who desires to travel inexpensively, either alone or with another passenger, and it recommends itself to the Doctor, Lawyer, Contractor, City and Suburban Salesman, Builder, Business Man, in fact, to every one whose needs do not exceed economical, safe, and speedy transportation for two.



Four-Cylinder 24-30 H. P. Touring Car—Model DA

Equipped with gas lamps and generator, coat rail, foot rest, etc. Wheel base 104 inches. **Magneto a part of equipment.** Price, $1,750.

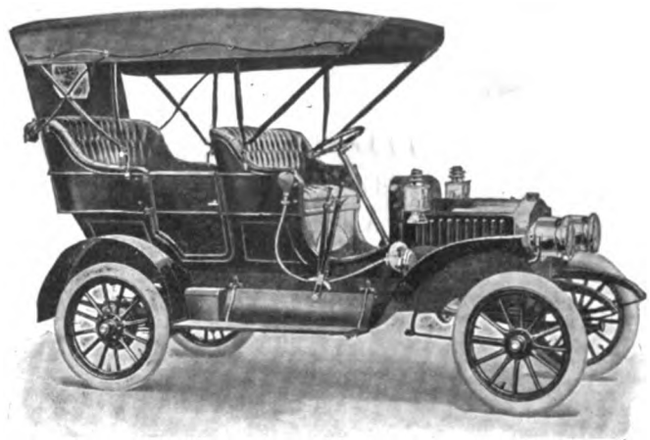
The best value ever offered on the American Automobile Market. A stylish car of dignified appearance, with power to spare and of easy riding qualities that make the use of Model DA unalloyed pleasure. The economy of the Maxwell two-cylinder engine also is present in this four-cylinder type, resulting in an unusually great mileage per gallon of gasoline. The power plant is of unrivaled flexibility, built substantially, to withstand hard service. Every feature essential to the perfect utility car is represented in the Model DA Maxwell. The superior equipment and the addition of Magneto ignition make this car lower in price than other of similar power, which are sold at a slightly lower figure, but without our complete equipment.



Four-Cylinder 24-30 H. P. Gentleman's Roadster—Model KA

Equipped with gas lamps and generator, coat rail, etc. Wheel base 104 inches. Speed 60 miles per hour. **Magneto a part of equipment.** Price $1,750.

The acme of refinement, unequalled for luxurious riding. Furnished either with folding rumble, single rumble, surrey or double rumble rear seat. The ideal touring car for two and the choice of the man who wants speed combined with genuine comfort. A low-priced car when the superior and complete equipment, which includes Magneto ignition, is considered.



Two-Cylinder 20 H. P. Touring Car—Model HD

Fully equipped with top, gas lamps and generator, coat rail, foot rest, etc. Wheel base 96 inches. **Magneto a part of equipment.** Price $1,450, fully equipped. $1,250, without top, magneto and gas lamps.

This model represents the car that has done much to popularize motoring in this country. With seating facilities for five and the wheelbase lengthened to 96 inches Model HD will impress the buyer whose chief quest is simplicity of operation, economy in upkeep, reliability in the hardest possible kind of service. A car not too expensive for the business man and good enough for the millionaire.



Two-Cylinder 20 H. P. "Doctor"—Model DR.

Equipped with top, gas lamps and generator, coat rail, etc. Wheelbase 96 inches. **Magneto a part of equipment.** Price $1,350.

The chassis of this model is the same as that of Model HD, and the car has been dubbed the "Doctor" on account of its extensive use by physicians throughout the country. The ample carrying space in the rear appeals particularly to the country physician as well as to the traveling man who desires to carry luggage with him. The light weight of the body gives the car ample power to travel over rough roads and makes the "Dr." an excellent vehicle for use in districts where automobile travel is somewhat difficult on account of adverse road conditions.

MAXWELL-BRISCOE MOTOR COMPANY, Tarrytown, N. Y. **FACTORIES: Tarrytown, N. Y. New Castle, Ind. Pawtucket, R. I.**

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Standard Detachable Rim

Resolution passed by the NATIONAL ASSOCIATION OF AUTOMOBILE MANUFACTURERS at a meeting held in New York, August 5th, 1908.

"Whereas, the Standard Universal Rim, described in the report of "the Special Rim Committee, has been recommended by the committee "as mechanically satisfactory, be it

"RESOLVED that this association hereby adopts the rim so de- "scribed as standard, subject to the consummation by the Special Rim "Committee of satisfactory commercial arrangements with the patentee "and manufacturers."

At the above meeting all the detachable rims now on the market as well as proposed new rims were carefully considered.

THIS IS THE RIM



Standard Rim as Used for Clincher Tires



Standard Rim as Used for Dunlop Tires

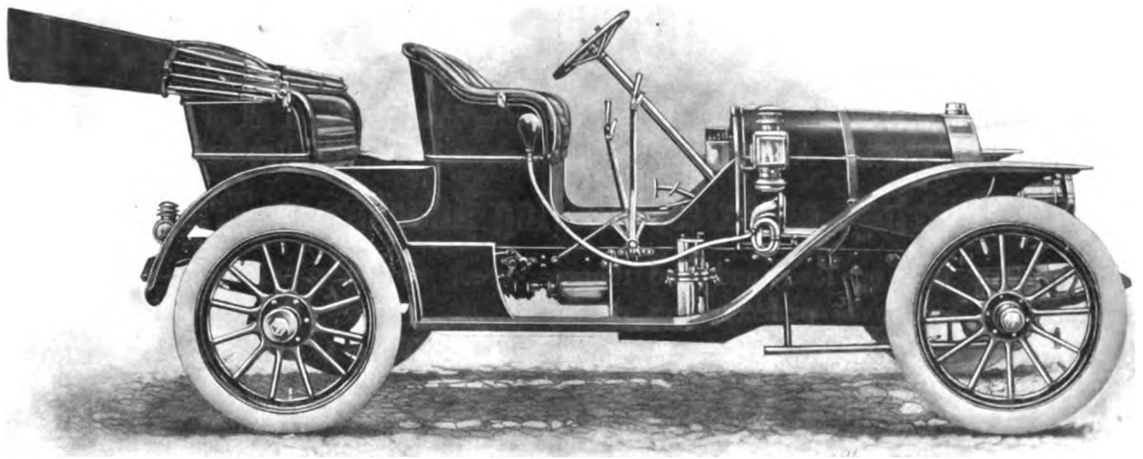
Hartford Rubber Works Co.
Hartford, Conn.

Morgan & Wright
Detroit, Mich.

G & J Tire Co.
Indianapolis, Ind.

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-APPERSON-



Model O, 30 H. P., Baby Tonneau, $2,450.

Model O may be had with 5 passenger touring car body, or 3 passenger runabout body at same price.

Apperson Bros., the oldest established automobile makers in America, invite correspondence with reliable dealers in open territory.

All Apperson cars are fully equipped with double ignition (magneto and storage battery) five lamps and generator, tire carrier, tools, etc.

THE APPERSON LINE

Model O—3 styles of body, 30 H. P	$2,450.00
Model M—2 styles of body, 35-40 H. P	3,000.00
Model M—5 passenger touring car	3,350.00
Model I—7 passenger touring car, 40-45 H. P	4,200.00
Model K—7 passenger touring car, 50-55 H. P	4,700.00
Apperson "Jack Rabbit"—2 passenger speed car	5,000.00
Model S—Six Cylinder, 50-55 H. P., 7 passenger touring car	5,500.00

In October we shall have ready for delivery a light 40 H. P. Six Cylinder 5 passenger Touring Car to sell at a low price.

APPERSON BROS. AUTOMOBILE COMPANY

KOKOMO, INDIANA

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The Glidden 1908 tour was won on

Timken Roller Bearings

Foremost among the winners were the three cars composing the Peerless Team, all of which finished the 1700 miles running with clean scores. All three were equipped with **Timken Product.**

Timken Roller Bearings on Axles, Steering Knuckles and Transmission Gears

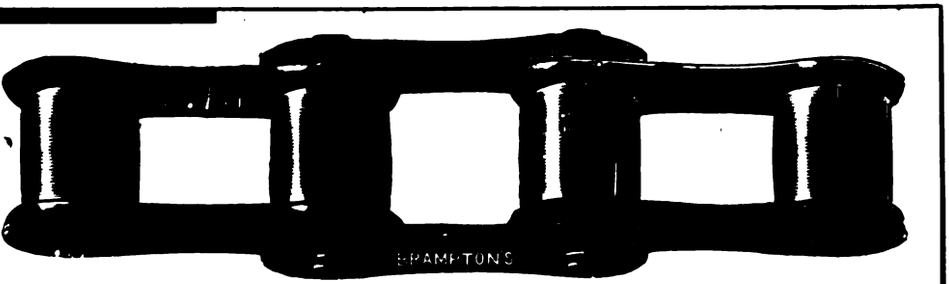
reduce friction to zero, take up load and end thrust—prevent resistance to engine—save wear and tear on every working part and make perfect scores possible.

The best cars of every make have **Timken Roller Bearings.** There is a reason. Let us give it to you.

THE TIMKEN ROLLER BEARING AXLE COMPANY, Canton, Ohio

Branches: 10 E. 31st Street, New York. 429 Wabash Avenue, Chicago.

THE BRAMPTON MOTOR CHAIN



All side plates on both sides of the Brampton Chain are stamped "BRAMPTON."

LARGE SALES and SMALL PROFIT with thousands of satisfied customers is our best advertisement. THE BRAMPTON CHAIN is made of self-hardening Steel; the strongest Chain in the World. All parts polished; fits sprockets (that are properly cut) without friction.

Some of the other chains may look like **THE CELEBRATED BRAMPTON CHAIN** because some of the other chain makers began to copy the design and shape of the **BRAMPTON CHAIN** links in 1904. They have improved somewhat on their copied design from time to time until these chains now look more like the **BRAMPTON CHAIN** than ever before. These chains somewhat resemble the **BRAMPTON** in appearance, but the manufacturers of such chains have been unable to copy the material —self-hardening steel.

NO CHANGE IN THE BRAMPTON

There has been no change in the design, construction, material or finish of the **BRAMPTON MOTOR CHAIN** in the past ten years.—**"ENUF SED."**

PRICE

The price being equal, it's presumable you want the best, and full value for your money. In such cases, the **BRAMPTON FILLS THE BILL,** and the prices are the same to manufacturers, jobbers, dealers and consumers as any other chain of equal size. We have in stock chains to fit all American and foreign cars.

YOUR 1909 CAR

You can have the new car that you order fitted with the **CELEBRATED BRAMPTON CHAIN** if you order it that way. No extra cost to either you or the manufacturer. All standard sizes in stock to fit American and Foreign Cars at the same price as the other chains.

SPECIAL CHAINS TO FIT THE INDIAN MOTORCYCLE.
Agents wanted in unoccupied territory. Catalog on request.

CHAS. E. MILLER, Manufacturer, Jobber, Exporter and Importer
Main Office: 97-99-101 Reade Street, **New York**

BRANCHES: 54th St. and 8th Ave., New York. 318-320 N. Broad St., Philadelphia, Pa. 1829 Euclid Ave., Cleveland, O. 824 Main St., Buffalo.
202-204 Columbus Ave., Boston, Mass. 227½-229 Jefferson Ave., Detroit. 1392 Bedford Ave., Brooklyn, N. Y.

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Stewart Speedometer

For 1909 we announce the most complete and beautiful line of SPEEDOMETERS ever shown—values not possible for any other speed indicator to even equal.

They combine features of workmanship, materials, construction, equipment and performance that have never been equaled by any speed indicator at any price.



Model 5, 90 mile, $50.
Model 4, 60 mile, $40.

Model 4. The same beautifully designed instrument as of last season, to which we have added an improved trip register of three dials, recording miles and tenths, which can be reset to a zero automatically. This instrument will also be equipped with a maximum speed hand. The construction of the mechanism for operating the trip and maximum hands is different to any heretofore used, and enables us to eliminate springs and other devices liable to derangement. Price, ... **$40.00**

Model 5. A duplicate of Model 4 in every feature, but made to indicate speed of 90 miles. Price last season $75, but owing to the enormous quantities being sold we will this season list the same at **$50.00**

Model 9. Comprises the No. 4 Speedometer and a 4-inch 8-day Chelsea Clock, the best automobile clock on the market; both mounted on a handsome brass base, and equipped with electric light **The most attractive combination possible.** Price, ... **$75.00**

Model 11. Something entirely new in speedometer construction. A 4-inch instrument similar in design to the Model 4, but will indicate speed from zero to 60 miles; is equipped with both season and trip register and automatic resetting device. The scale is three times the length of that used on any other speedometer, and which makes it the most easily read indicator on the market. The construction is of the costliest kind, every part is of the same high standard used in all our instruments and includes jewel bearings. **This instrument is destined to be the quickest selling, most attractive, most satisfying of all instruments, regardless of price.** Price, . . **$25.00**



Model 11, $25.



Model 12, $15.

Model 10. A combination of the above described Model 11 speedometer and 8-day Chelsea Clock, mounted on a brass base, equipped with electric light. Price, . . **$60.00**

Model 12. The handsomest little instrument ever produced; will indicate speed of 50 miles; has enclosed season odometer with capacity of 10,000 miles. Is in every feature the same as our $25 instrument of last season, with the exception that it is made with a 3-inch dial. **It is a thoroughly high grade instrument, better than any other speedometer, as a trial alongside any other make will prove.**

All Models to be equipped with the famous Stewart Flexible Shaft and Swivel Joint, and all are **covered by an ironclad 5-year guarantee.** Send for our 1909 catalog.

STEWART & CLARK MFG. CO. 509 Diversey Blvd. Chicago, U. S. A.

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THE SELDEN CAR FOR 1909

Enters upon its second year with a clean record. No "first year" car has ever earned a better reputation or made a better showing.

THE CAR OF MODERATE PRICE

$2000

Touring Car **Roadster**
Limousine **Landaulet**

4 cylinder, 28-30 horsepower, shaft drive, selective transmission, metal body, pressed steel frame, excellent hill climber, fine finish and style, roomy tonneau, luxurious upholstery, easy riding, smooth running, economical in up-keep, in fact, a high grade car in every particular.

The "Silent Selden"

1909 MODELS READY IN SEPTEMBER

Agency propositions now ready. Send for catalog and specifications.

Selden Motor Vehicle Co.

ROCHESTER, N. Y.

Member A. L. A. M.

TIME WAS when tire worry spoiled much of the enjoyment of motoring and the motorist who footed the bills had no voice in the matter.

THEN CAME THE AJAX wrapped tread tire with its superior services.

AND NEXT THE AJAX 5,000 MILE GUARANTEE —If the user of Ajax tires fails to obtain 5,000 miles service from his tire, it is for us to worry—not him, and we make good.

WITH AJAX TIRES the tire problem resolves itself into a plain proposition. We know that they will do, and we offer you the best kind of an insurance for expressing your willingness to find out for yourself.

IS THERE ANYTHING MORE BUSINESS-LIKE THAN THIS?

Write for copy of Guarantee, stating what size tire you are using. Address Dept. A.

AJAX-GRIEB RUBBER COMPANY

GENERAL OFFICES: N. E. Cor. 57th St. and Broadway, New York
Factories: Trenton, N. J.

BRANCHES:

New York, 1776 Broadway
Boston, 819-a Boylston St.
Chicago, 1418 Michigan Ave.
Detroit, 743 Woodwood Ave.
Denver, 1529 Cleveland Place
Seattle, 1102 Broadway
San Francisco, 460 Golden Gate Ave.
Los Angeles, 1040 S. Main St.

Agents in all large cities.

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FRANKLIN 1909

24-Hour Bretton Woods Endurance Run

Franklin 1909, Model D, finished with perfect score.

The difference between weight and strength.

Did you notice that the only axles broken in the Glidden Tour were of the solid I-beam type?

There is no better example of the uselessness and disadvantage of useless weight. The ordinary I-beam axle weighs twice as much as the Franklin tubular axle, yet the Franklin axle is a good deal stronger. It is made of 3½ per cent. nickel steel, with a tensile strength of 240,000 pounds to the square inch.

In the same way the Franklin drive-shaft is stronger than an ordinary drive-shaft of considerably greater section and weight.

The Franklin white ash frame built up in transverse layers, is stronger than the ordinary steel frame, although lighter.

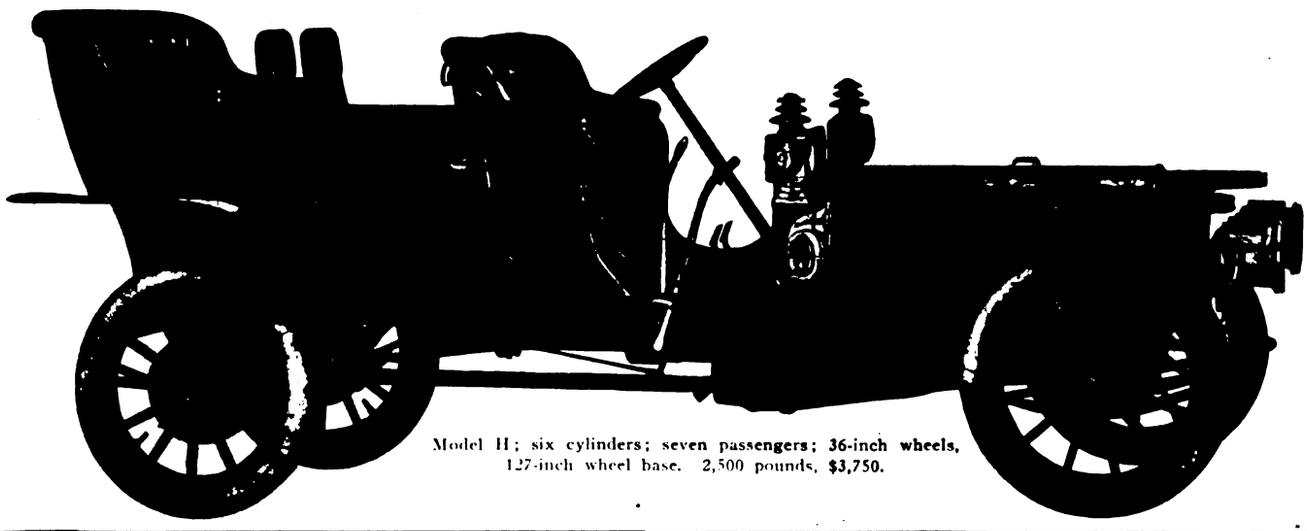
Nobody imagines that heavy water-cooling apparatus makes an automobile any stronger. This extra weight is simply one of the undesirable necessities that go with a water-cooled design. By getting rid of this weight and the complication that goes with it, every Franklin model is stronger and safer, as well as more reliable than the average water-cooled automobile that weighs fully a third more, and costs in proportion more to maintain.

The biggest mistake in automobile making is useless weight and bulk.

G 18 H. P.	Touring Car, $1,850. Runabout with hamper	$1,750
	With single or double rumble	1,800
D 28 H. P.	Five-passenger touring car	2,800
	Or Runabout with single or double rumble	2,700
H 42 H. P.	Seven-passenger touring car	3,750
	Or Runabout with single or double rumble	3,600
	Brougham, Landaulets, Limousine, Town-car.	

Prices f. o. b. Syracuse. Write for catalogue that explains Franklin construction and the Franklin models in detail.

H. H. FRANKLIN MANUFACTURING CO., Syracuse, N. Y.

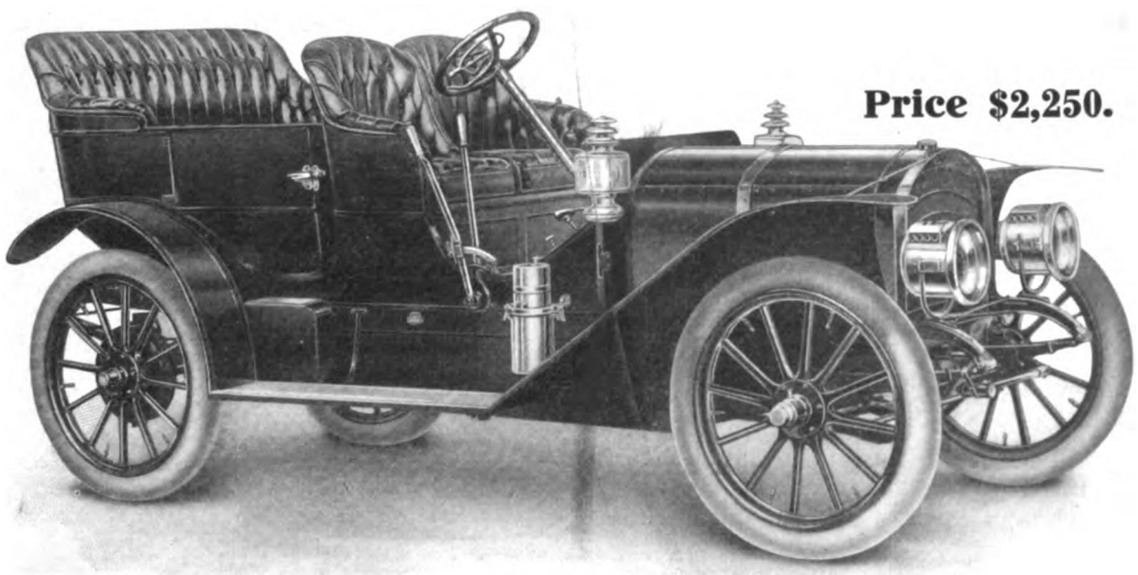


Model H; six cylinders; seven passengers; 36-inch wheels, 127-inch wheel base. 2,500 pounds, $3,750.

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Rambler

Model 34



Price $2,250.

THE ADVANTAGES OF THE STRAIGHT LINE DRIVE

Here are some good reasons why the Rambler straight line drive is such a good mechanical feature.

Because it saves you money. Power cannot be carried around a corner without great loss, due to friction. For every bit of energy wasted by friction in the ordinary automobile in transmitting the power from the engine to the rear axle, through universal joints, or, in other words, around corners, you pay just that much more for gasoline and for oil.

The Rambler straight line drive delivers the maximum power of the engine direct to the rear axle, without unnecessary loss through friction. With the offset crank shaft, to further reduce friction when the engine is running under load; with the extra large wheels, big tires and long wheel base to provide perfect comfort; with quality embodied in every detail of the Rambler construction, it is no wonder that the 1908 Rambler has given universal satisfaction.

If you write your name on a postal today, stating the model in which you are interested, we will give you the facts. You will not obligate yourself and we will appreciate it.

THE CAR OF STEADY SERVICE

Thomas B. Jeffery & Company, Main Office and Factory: **Kenosha, Wis.**

Branches and Distributing Agencies: Chicago, Milwaukee, Boston, Philadelphia, San Francisco.

Representatives in all leading cities.

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, October 1, 1908. No. 1

IMPERIAL IN RECEIVER'S HANDS

Williamsport Concern Gets into Difficulties Through Lack of Capital—Made Few Recent Purchases.

After a considerable period of financial uncertainty, the Imperial Motor Car Co., of Williamsport, Pa., has gone into the hands of a receiver. Rumors that such action was likely have had liberal circulation in the trade for quite a time, as it was known that the concern was seriously hampered in its operations by lack of adequate capital. Although never assuming any large importance, the company made something of a stir about a year ago by a vigorous introductory campaign for its product, the Imperial roadster, emphasis being placed on its straight line drive, "double drop" frame and other constructional refinements.

Activity in the selling end of the organization came to a standstill some months back, however, and the fact that preparations for the 1909 season have not seemed to be under any very great headway has portended the possibility of the present difficulty. Until the receiver has had the opportunity to investigate the company's affairs, no estimates of the proportion of assets to liabilities are available.

Muncie's Factory is Under Way.

Until Thomas F. Hart, the head of the enterprise, can sort out the 1,500 prize offer suggestions for a good name for his automobile company which he has received from the citizens of Muncie, Ind., and can select the most felicitous and suitable one, the concern must go nameless, but the deficiency is not delaying the construction of a large factory on a 14-acre site which has been bought in Muncie's manufacturing district. The capital stock of the company will be $200,000, subject to subsequent increase, and the probable stockholders in addition to Hart will include Madison Maring, T. F. Rose and Ball brothers, the latter being well known Muncie glass manufacturers. All are said to be men of wealth. Claude E. Cox, of Indianapolis, Ind., has been engaged as chief mechanical engineer, and the production will be runabouts and touring cars of medium price. Cox was formerly connected with the Overland Automobile Co., of Indianapolis, Ind., and the new concern's announced intention to "turn out a machine almost identical with one that has been a success on the market," is thought to be not without significance. Past association with the glass business has lead Hart and the others to decide on glass and steel construction for the factory buildings. The side walls will be chiefly of glass.

Chester Company Making Cabs.

Cabs for taximeter service are being made by the Chester Engineering & Machine Co., of Chester, Pa., under contract for Messrs. Hinkle, O'Brien and Lewis, of Philadelphia, who have the concession for the Bellevue-Stratford hotel in the latter city. Six of the 25 machines ordered have already been completed and plans are being considered to have the Chester concern continue to manufacture similar cabs for the general market.

Orders Muncie Parts Claims Paid.

Claims against the defunct Muncie Auto Parts Co., of Muncie, Ind., to the amount of $32,000, including interest, have been allowed by the court and ordered paid by Judge Joseph G. Leffler. In accordance with the court order Harvey Hooke, the receiver, is now trying to convert the assets into cash, the holdings having been appraised at $34,000.

Leaves Corbin for Continental.

W. J. Surre has resigned as secretary of the Corbin Screw Corporation, New Britain, Conn., to become the eastern sales manager of the Continental Rubber Works, of Erie, Pa. His headquarters will be in New York City. The vacancy in the Corbin company has been filled by the election of George P. Spear as secretary and a director.

NEW WAVERLEY OWNERS ORGANIZE

Indianapolis Interests Buy Plant and Business Outright from Pope—Court Approves Terms.

Following the sale of the Pope-Waverley plant at Indianapolis, Ind., to the interests represented by Herbert H. Rice and Wilbur C. Johnson, the purchasers have organized as The Waverley Company and will conduct the business entirely independent of the former owners. The sale was practically completed on September 25, when Judge A. B. Anderson, in the United States district court, directed Albert L. Pope, as receiver for the Pope Motor Car Co., to accept the offer of $200,000 made by Rice and Johnson, the sale to take effect as dating from July 1, with the provision that the $101,000 bank balance held by the plant in Indianapolis banks at the time of the order be turned over to the receiver or a corresponding amount added to the purchase price. The sale includes the property, merchandise, patents, good will and businesss.

The new owners have organized under Indiana laws with a capitalization of $225,000. The company is headed by William B. Cooley as president, with Herbert H. Rice, vice-president; Carl von Hake, treasurer; and Wilbur C. Johnson, secretary. Continuing in the positions they occupied under the Pope regime, Rice will remain as general manager and Johnson as his assistant. The product, as heretofore, will be Waverley electric carriages and commercial trucks.

The capital which made the purchase possible is said to be in no way allied with any other automobile interests, having been supplied chiefly by Indianapolis capitalists whom Rice and Johnson interested shortly after the Pope failure. For the present the factory and sales organization will remain unchanged. The uniform prosperity of the Waverley department in the past indicates future success.

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In the Retail World.

Earle H. Nevins, of Shabbona, Ill., has started a garage. He will also maintain a repair department, and will sell accessories.

The assets of the bankrupt R. O. Williams Automobile Co., of Columbus, O., amount to $9,547.03 according to the report filed by H. C. Moore, the receiver. The liabilities have not as yet been fully listed.

R. M. Maxfield, of the automobile firm of Maxfield & Rice Bros., Minneapolis, Minn., has purchased the interests of W. C. Rice and W. R. Rice, and will conduct the business alone. The present location at 1401 Hennepin avenue will be retained.

A Cadillac branch is to be opened in Spokane, Wash. Factory representatives are at present arranging for the erection of a garage on the south side of Front avenue, between Wall and Post streets, on the east side of the Salvation Army building.

Robert J. Bronson, proprietor of the Bronson Automobile Repair Co., Milwaukee and River streets, Elgin, Ill., has disappeared from local view, much to the alarm of Elgin creditors. After his departure his establishment presented a barren appearance, except for some few cars left in the garage by patrons.

The Southern Automobile Co., of Charlotte, N. C., has succeeded to Ham & Ross in the agency for Maxwell and Jackson cars and has opened up its salesrooms in the Auditorium building. The new concern is capitalized at $25,000, with J. H. Hamm, president and manager, and J. W. Zimmerman secretary and treasurer.

The Holcomb Co., of New Haven, Conn., which in addition to manufacturing tops for the trade has the agency for several well known cars, is opening a downtown wholesale and retail store for the sale of automobile supplies, at 290-292 Wooster street. This is quite apart from the office, factory and garage at 97-115 Goffe street.

In an effort to straddle successfully the "licensed" and "unlicensed" agency problem, Charles Schmitt, of Hamilton, O., has formed the Butler Auto Co., which he will manage in addition to the West Side Auto Co., of which he is the head. The Butler company will handle only "licensed" cars, while the West Side offerings will be "unlicensed."

"Bennett's Garage" will shortly open in Findlay, O., with the agency for four makes of car, a complete sundry and accessory department, and adequate garaging and repair facilities. Although the sales department will be in charge of F. J. Collinwood and the garaging under Harry Bennett, the ownership of the concern will reside in the C. F. Jackson Co., proprietors of the Glass Block Department Store.

Takes Pope New York Agency.

New York City representation for the Pope-Hartford, which has been the subpect of trade speculation since the relinquishment of the agency by A. G. Southworth, has been settled by the formation of the Pope-Hartford Automobile Co., of New York, which will handle the Pope Mfg. Co.'s cars in Greater New York and its vicinity. The new company, which has been incorporated under New Jersey laws, with $50,000 capital, has taken quarters at 1853 Broadway and has already commenced its selling campaign. H. E. Holt, the president of the company, although having no previous connection with the automobile trade, is experienced and able in commercial affairs, while Benjamin E. Fincke and Charles A. Dickson, of Newark, N. J., treasurer and secretary, respectively, have sold the Pope-Hartford in New Jersey for several years and have been very successful in that field.

Wagner-Field Agency Gets Clients.

Among the first accounts of the newly formed Wagner-Field automobile advertising agency, composed of Fred J. Wagner and Russell A. Field, is the publicity work for the Vanderbilt Cup Commission, in connection with the sweepstakes and Vanderbilt Cup races, the new organization having been entrusted with the heralding of the grandstand and parking accommodations. Through former connections with an automobile publication and as the official starter of the chief motor car racing events, Wagner is well known to the trade, while Field has been automobile editor of a Brooklyn newspaper. Offices have been taken at 1777 Broadway, in the Thoroughfare building, New York City.

Canary Provides Taxi-Service for Chicago.

Dan Canary, one of Chicago's pioneers in automobile matters and who has had a most wide and varied experience in motor car affairs, is starting a taximeter cab enterprise in the Windy City which is to be known as the Dan Canary Tax-I-Service Co. The nucleus for his "fleet," as he designates it, is six Thomas 1909 cabs equipped with Jones taximeters, the vehicles going into commission on October 10, after which date more of the cabs will be added rapidly and regularly. Temporary headquarters have been taken at the old Pardee & Canary salesrooms, 1218-20 Michigan avenue.

A Philadelphia Branch for Maxwell-Briscoe.

William F. Smith, Philadelphia branch manager for Thomas B. Jeffery & Co., has resigned to become territorial manager for the Maxwell-Briscoe Motor Co., of Tarrytown, N. Y. He will have his headquarters in the Quaker City, where a Maxwell-Briscoe branch is to be established.

Haynes Plans Increase of Capital.

An increase of capital for the Haynes Automobile Co., of Kokomo, Ind., is being planned to the extent of $180,000. Investors in Kokomo are said to be prepared to take $130,000 of the amount, while outside capitalists have arranged for the $50,000 remainder.

The Week's Incorporations.

Wilson, Kan.—Wilson Automobile & Garage Co., under Kansas laws, with $3,000 capital.

Detroit, Mich.—National Motor Casting Co., under Michigan laws, with $14,000 capital.

Vincennes, Ind.—Johnson Auto Co., under Indiana laws, with $10,000 capital. Corporators—C. E. Dailey, F. P. Emison, and W. T. Johnson.

Chicago, Ill.—Central Wheel Co., under Illinois laws, with $2.500 capital. Corporators—John T. Watters, Emma Westendorf, Anna J. Westendorf.

South Bend, Ind.—White Garage Co., under Indiana laws, with $10,000 capital. Corporators—Cyrus C. Shafer, Thos. W. Slick, John Shafer and W. A. Slick.

Boston, Mass.—Gray-Aldrich Co., under Massachusetts laws, with $25,000 capital; to manufacture and deal in gas and gasolene engines. Corporators—E. Gray and C. S. Aldrich.

Nashville, Tenn.—Crescent Automobile Co., under Tennessee laws, with $15,000 capital. Corporators—J. A. Wardlow, F. W. Wallace, S. B. Cook, C. N. Woodworth, W. H. Ward.

Boston, Mass.—Oulton Motor & Manufacturing Co., under Massachusetts laws, with $200,000 capital; to manufacture and deal in hydrocarbon motors. Corporators—A. C. Morrison and T. Le Baron.

Buffalo, N. Y.—Chester Auto & Tire Filling Co., under New York laws, with $50,000 capital. Corporators—Theodore Chester, of Sudbury, Pa.; Asbury Chester, Wilson Chester, Harold Carle and H. C. Harrison, of Buffalo.

Brooklyn, N. Y.—Long Island Auto Supply Mfg. Co., under New York laws, with $25,000 capital; to manufacture automobile supplies. Corporators—L. Handel, New York City; H. L. Carr and C. Knopf, Brooklyn.

Wayne-Northern Merger Nears Completion.

Although the $1,000,000 Everitt-Metzger-Flanders Co., of Detroit, Mich., which was based on an amalgamation of the Wayne and Northern interests has been doing business right along, it has been generally known in the trade that the completion of the merger had been delayed. It is now said, however, that the details of the plan have finally been agreed upon and that its consummation will go into effect within the next five or six days. By this means the E-M-F concern acquires the license of the Northern Motor Car Co., and its membership in the Licensed Association of Automobile Manufacturers. The Northern stockholders will take stock in the newer concern, but otherwise there will be no changes, as is explained. Proxies are being obtained of the Northern holdings in Port Huron preliminary to the call for a ratification meeting.

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BRITISHERS AVOIDING BIG CARS

Small Machines Hold Their Own in a Declining Market—Upkeep Cost a Large Factor.

London, Sept. 22—Notwithstanding the enormous increase in the employment of the motor car both for business and pleasure purposes, there can be no disguising the fact that, at the present time, the motor trade of Great Britain is in a very grave position; so grave in fact that it is most difficult to say what will happen during the next three or four years. Although to a certain extent the depression is felt upon the Continent, yet there it may be partly due to over-production, coupled with, and, indeed, largely caused by, high prices. To a certain degree these causes have conduced to the existing state of things in England, but this general remark applies mostly to those firms who have devoted themselves almost entirely to the production of cars of high power. The fact is that with, perhaps, one solitary exception, the sales of large cars have fallen off tremendously.

There are several reasons for this, but the principal one is the question of upkeep, which, with the present prices of tires, is truly terrible, and forces itself unpleasantly upon every owner who does not come within the category of the very rich. On the other hand, this heavy depreciation of such vehicles is largely due to the cost of running, at at present, cars which were purchased for from £800 to £1,000 less than two years ago, and are now in perfect running order, can be obtained, second-hand, for £200, or even less. That there is considerable difficulty in finding buyers even at this low price is due to the fact that the cost of running—for that is what "upkeep" really means—is now understood, and the class who can afford to spend £1,000 a year on motoring is strictly limited.

But there is still a demand for small and moderately small cars, though this has received a certain check owing to the number of large vehicles which have been thrown on the market. As a matter of fact the demand for the small car can be best gauged by the prices of second hand vehicles of this class. A reference to advertisement columns of second-hand cars will show this, for it is quite common to see a vehicle which cost not more than £250 new, offered and sold a year later for £200 or even more. Apart from this, the demand is further proved by the fact that for every car thus advertised there are usually many applications. So far then as the medium and small cars, vehicles of from 6 horsepower to 12 horsepower, are concerned, there is little fear for the trade, if only the manufacturers will realize that they must work upon business lines.

Cheap Mail to England in Effect.

More or less extensive relations which the cis-Atlantic automobile trade enjoys with British concerns have in the past been ruffled by the forgetfulness of the American correspondents about the necessity for five cent stamps on the letter envelopes, resulting in additional penalty collections and some hard feeling on the other side. Beginning with the date of this issue, however, letter postage to England is reduced to 2 cents per half ounce, so that one common red stamp will ordinarily suffice.

Windsor Will Make Motor Buggies.

Automobile buggies of the Stanhope type are now being produced at the plant of the Windsor Carriage & Delivery Wagon Works, 100 London street West, Windsor, Ontario, the small Canadian city which lies opposite Detroit. A strong Canadian demand for the buggy type of motor vehicle has determined the company upon extensive manufacture along this line.

Columbia Carriage Produces a Car.

Hamilton, O., is proud over the fact that buggy type automobiles are now being produced within its borders, the Columbia Carriage Co., of that place, having exhibited on the street one of its new 12 horsepower runabout models. The company intends making motor buggies a feature of its line.

Davis to Do Pierce Publicity.

George M. Davis, formerly publicity promoter for the E. R. Thomas Motor Co., of Buffalo, and more recently interested in electrics, has joined the forces of the George N. Pierce Co., Buffalo, N. Y. While publicity may constitute a large part of his work for the Pierce company, his activities will not be entirely along advertising lines.

Locomotive Lights Lear Factory.

Sparks from a passing locomotive and spontaneous combustion from oily rags are two of the various causes assigned for a serious fire at the plant of the Oscar Lear Automobile Co., Springfield, O. The damage to the testing rooms and warehouse is estimated at between $5,000 and $10,000.

Deal Develops a Buggy Type.

Motor buggies have been taken up by the Deal Buggy Co., of Jonesville, Mich. The concern has heretofore been known only as manufacturers of horse drawn vehicles, but a new department has been created which will devote itself to the motor propelled types.

Hayes Acquires National Wheel.

The controlling interest in the National Wheel Co., of Jackson, Mich., having been bought by Clarence B. Hayes, the concern is to be reorganized and the capital and equipment greatly increased. The name will in all probability be changed to the Hayes Wheel Co.

READY MARKET FOR STOLEN TIRES

Chicago Police Discover an Alleged "Fence" System—Rubber Company Manager is Arrested.

Traffic in stolen automobile tires, which from single instances of crooked deals among chauffeurs and garage men has latterly developed into an extensive evil, received a setback last Friday in Chicago when the police took into custody John Sweeney, alias John Johnson, and Alexander Lavander, who subsequently confessed jointly to having stolen about 200 cases and tubes and who disclosed what is declared to be a bold and well organized system for the theft and sale of tires for motor cars. As a result of their disclosures, Charles H. Knight, manager of the Chicago Rubber Co., 425 Wabash avenue, was arrested and nearly $10,000 worth of alleged stolen tires recovered.

Four patrol wagon loads of the stolen property were hauled to the Central police station without fully exhausting the supply. The detectives went to the plant armed with a search warrant obtained by Dr. F. L. Hollenbeck, from whose machine a spare tire was taken two weeks ago. Upon being placed under arrest, Manager Knight, of the rubber company, admitted that he had purchased tires from the two culprits whom the police had induced to confess, but he maintained that he did not know that he was buying stolen goods.

The arrests in the case were brought about by detectives seeing Sweeney taking a spare tire from a machine standing by the curb. They questioned him and he told them he was employed by the owner of the car and had been sent to take the tire to a garage. He was taken in tow, however. Later he implicated the others. According to Sweeney and Lavander, the manager of the rubber company paid from $7 to $10 apiece for the tires they stole, and told them that he would buy all they were able to bring to him.

Tire Robbers Take to Diamonds.

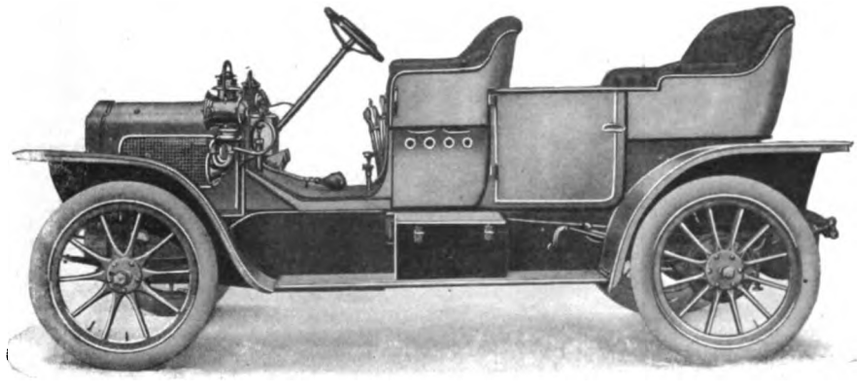
Offers of Diamond tires at suspiciously low prices may have an explanation in the fact that robbers broke open the rear window of the Diamond Rubber Co.'s branch at Cleveland, O., on Saturday night, the 26th ult., and stole over $1,000 worth of tubes and casings. Tracks of a horse and wagon in the alley indicated that the thieves had made careful preparation for a wholesale haul.

Streator Factory Spreading Out.

Two new concrete factory buildings are being constructed for the Streator Motor Car Co., of Streator, Ill. A greatly increased rpoduction for next year is being planned.

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THE 1909 WHITE STEAM CARS



During the coming season, the White Steam Cars will be built in two distinct models which, while differing widely in size, in power and in price, will follow the same general lines of construction. The horse-power ratings of these cars are based on the actual power delivered at the rear wheels, not merely on formulas or on the power delivered at the engine.

The larger of the new cars is known as the Model "M." It is rated at 40 steam horse-power and sells for $4,000, f. o. b. Cleveland, equipped with acetylene headlights and tank, oil lamps, horn and tool kit. The wheel base is 122 inches; the front tires 36 x 4 inches and the rear tires 36 x 5 inches. The car is regularly equipped with a straight-line seven-passenger body.

The smaller of the cars (shown in the above illustration) will be known as the Model "O." It is rated at 20 steam horse-power and sells for $2,000, f. o. b. Cleveland, equipped with oil lamps, horn and tool kit. The wheel-base is 104 inches and the tires, both front and rear, are 32 x 3½ inches. The car is regularly equipped with a straight-line five-passenger body.

The power plants of the two models are identical in design, the only difference between them being in the dimensions of the various parts. The principal mechanical change in the new cars, as compared with previous White models, is in the engine. The new engine is fitted with the Joy valve mechanism, instead of the Stephenson valve mechanism. The valves are driven from the connecting rods, as are the pumps. The eccentrics are done away with and the cylinders are brought close together, permitting the use of a short one-piece crank-shaft, with but two main bearings. The number of parts in the engine is reduced by one half and the entire construction greatly simplified.

As in previous models, the generator — the simplest steam-making device ever designed — consists simply of a series of coils of steel tubing joined together. The regulating system, whereby the temperature and pressure of the steam remain constant without in any way engaging or requiring the attention of the operator, is similar to that in the 1908 cars.

A circular containing full details of the new models will be sent on request.

THE WHITE COMPANY

CLEVELAND, OHIO

NEW YORK CITY, Broadway at 62d St.
BOSTON, 320 Newbury St.
PHILADELPHIA, 629-33 N. Broad St.
PITTSBURG, 138-48 Beatty St.
CLEVELAND, 407 Rockwell Ave.
CHICAGO, 240 Michigan Ave.
SAN FRANCISCO, 1460 Market St.
ATLANTA, 120-122 Marietta St.

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NEW YORK, OCTOBER 1, 1908.

Competitive Commercial Types.

In the field of pleasure vehicles there is small room for discussion as to the respective merits of the gasolene and electric types for the various sorts of work such as may be subject to classification. In the commercial field, however, the lines are less closely drawn and with the probable increase of interest in the rivalry over the capture of the business market it is possible to foresee at no very distant time a sharp controversy as to the comparative value of the two types.

In this connection it is of interest to note the discussion of the advantages of the electric commercial vehicle printed elsewhere in this issue, wherein is predicted a somewhat greater field for it than has been looked forward to in many quarters—particularly in the case of the so-called "mixed" or gasolene-electric type, wherein are blended most of the advantages of both elements with an avoidance of sundry of their disadvantages. Hitherto this system of propulsion has been regarded in the light of a hopeful prospect from the theoretical point of view without receiving much encouragement of a substantial nature in the performance of the limited number of vehicles in service, upon which it has been employed. The statement of the advantages of the simple electric vehicle deriving its power current from storage batteries when it comes to short-haul work is little likely to be combatted.

A point which may be received with some little surprise, however, is that the relative costs of charging current and gasolene are closely comparable. Supposing this to be true within narrow limits, the relative costs of operating electric and gasolene vehicles under similar conditions is reduced to the elements of first cost and cost of maintenance. The cost of storage battery maintenance, when conducted along rational and systematic lines, is known to be very low. Hence the maintenance of the gasolene motor and the change gear, which is an invariable accompaniment to its use, stands forth as the chief disparaging element in the relative economy of the two types. With careful treatment and good design, of course, this factor may be brought down to very low terms. But at present it is commonly rated among commercial vehicle users to be unpleasantly high.

Over against what may be termed present data, however, it must be considered that great numbers of gasolene vehicles of the commercial type have come into general use in passenger haulage within a comparatively short period, so short, in fact, as to preclude any close estimate being placed upon their average performance in the matter of economy. That they are of the most modern design, and constitute a vast improvement in many ways over the older types against which many unfavorable conclusions may be drawn, and that they are proving trustworthy in action, argues favorably for the cost figures of the future. Whether they will prove to be of an economical value commensurate with that of the electric, already reduced to terms of close refinement, will be an important as well as instructive conclusion once it has been reached.

About Locking the Differential.

An unusual and rather conspicuous provision laid down in connection with the regulations established by the British War Office for its light tractor competition is that all machines entered shall be provided with means of locking the differential gearing, the lock to be capable of manipulation from the foot board. Aside from any other interest in the forthcoming event this in itself furnishes a suggestive point for consideration by the commercial vehicle designer. The object is clearly that of providing means of securing traction in one of the driving wheels when the other is mired or is "anchored" on a slippery footing. The provision also may be supposed to contain some small element of safeguard against skidding.

It is commonly agreed that the differential gear, particularly with cars of the pleasure type is and has been in the past, responsible for many serious accidents, and that it is by no means perfectly satisfactory in its performance. It has also been suggested more than once that some provision by which its action would be controlled in proportion to the turning action of the steering wheels, or could be checked at will, would be of great benefit. Indeed, several devices have been placed on the market in which a modified differentiation was secured, and in one case—that of a high-wheeled buggy introduced early this year—a true differential brake is employed for the purpose contemplated in the above-mentioned specifications.

Apart from the utility of such a provision from the standpoint of the pleasure car designer, there is every reason to believe that its application to vehicles of the commercial type would be of the greatest benefit. Owners of trucks of both light and heavy patterns are frequently compelled to resort to extreme measures when hauling over wet or muddy courses as a result of the wild and uncontrolable action of the differential gear. The sticking of one driving wheel tends ordinarily to cause the other to be driven at a rate which precludes the possibility of proper traction being secured. The slipping of one wheel at once removes the driving torque from the other. Differential slipping between the two drivers tends to slew around the driven end of the vehicle, much as the swifter moving pleasure vehicle is made to skid. And usually the only recourse to be had is that of blocking one wheel or the other temporarily.

Aside from its mechanical simplicity and the fact that it is absolutely reliable and automatic, there is indeed, little to recommend the ordinary balance gear to the de-

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signer who is compelled to make every foot pound of motive power tell in the best possible manner. Just when the last ounce of power is most required the automaticity of the differential is apt to interfere to cause considerable losses and vexatious delays. To counteract this effect, it is a comparatively simple matter to provide some method of checking the action temporarily, or, if necessary, of concentrating the drive on either wheel. That such a provision would be well worth its cost almost goes without saying.

Revival of Wayside Entertainment.

A new force in the intrenchment of the motor car in popular esteem is developing in the persons of summer resort proprietors and promoters who more than ever before are coming to appreciate the advantages of catering to that section of the public which is devoted to highway travel. Hitherto their efforts have been so scattered as to be of small importance when considered in the aggregate. The rapidly increasing numbers of motor tourists every year, however, and the fact that its isolation from railroad or steamboat facilities is no longer a bar to the success of an otherwise attractive resort, is having due effect upon the landlords of the more popular recreation centers. Their arousal naturally involves an increase in the number of wayside attractions for the tourist, improvements in accommodations they offer and in the highways by which they are approached and so in a secondary way encourages the constantly increasing importance of the car as a practical means of transportation.

So great has this effect become that even in established resorts where the railroad has long been the chief means of approach and the highroad has been shamefully neglected, the growing use of automobiles has resulted in highway improvements and so, in the increased use of cars until the railroad travel has been impaired to a serious extent. Indeed in one instance the famous "mountain division" of an eastern railroad has suffered a falling off in its receipts during the season now closing of no less than one-third, it is said. The route of the "ideal tour" through the White Mountains of New Hampshire has been clouded with the dust of something like a hundred cars a day on the average this summer, and at one of the resorts in that section no less than 400 guests have sometimes arrived for dinner in touring cars and runabouts.

Hotel men have not been slow to appreciate the advantages to be derived from even the transient trade of the motoring public and their efforts to attract it are in large measure responsible for the tremendous increase in long-distance touring during the past year or two. From this it is easy to see what the future must hold for the vacationist. The lure of the countryside made doubly attractive by the thoughtful provision of mine-host for the comfort of his guests, and the well-laid road to his door which he is also more or less instrumental in providing, must tend to make the motor car more nearly indispensible than ever where recreation is sought.

A Corollary of the Industry.

Despite the continued and frequently offensive presence of vast numbers of cars on the highways it is sometimes difficult to realize the magnitude and importance which has actually been attained by the automobile industry in the few brief years since its inception. Nevertheless, in its relationship to other branches of productive activity it has assumed proportions which are far from negligible. Thus it has recently been credited with assisting in the reinforcement of the copper market—a function which would appear superficially to be about as remote from its general effect as could be imagined. Because of the great demand for brass in lamps, horns, attachments, and to a limited extent in the mechanism itself, as well as the use of copper in alloy, it is said that the automobile is responsible for an increase of no less than 6,000,000 pounds in the sales of domestic copper so far this year as compared with last. This statement appears less incredible when it is said that there are estimated to be some 250 pounds of copper consumed in the production of each average car.

"Dunc" Curry, the clairvoyant, auto editor, etc., attached to the Hearst establishment "has 'em again." Having decided that he is the automobile public, and that all the national associations are contained within his person, he has commenced to imagine that he is the whole industry, also. Having informed an anxious world what he, in the role of Automobile Public "demanded," and "officially accepted" records which are unacceptable by all rules of sport, he now has let the same world know the "unanimous wishes of the trade." Unless his employer is able to induce him to depend less on clairvoyance and more on the recognized rules of sport, and to understand that one, two, or three men do not constitute a national organization, and unless his friends can induce him occasionally to stand in front of an unmagnifying mirror, it soon may become necessary to write it "Donk" Curry.

COMING EVENTS

October 1-2, Indianapolis, Ind.—Indianapolis Automobile Trade Association's sealed bonnet endurance run.

October 2, Poughkeepsie, N. Y.—Race meet in conjunction with Dutchess County Fair.

October 2-3, Brighton Beach, L. I.—Moto Racing Association's 24 hours race.

October 6-9, Chicago, Ill.—Chicago Motor Club's 1,000 miles reliability run.

October 7, 8, 9, Cleveland-Toledo, Ohio—Cleveland Automobile Club's reliability contest.

October 10, Philadelphia, Pa.—Quaker City Motor Club's 200 miles road race, Fairmount Park.

October 10, Long Island—Motor Parkway sweepstakes for stock cars.

October 10, Providence, R. I.—Rhode Island Automobile Club's race meet, Narragansett Park.

October 14-16, Cleveland, O.—Cleveland Automobile Club's reliability run.

October 17, Hartford, Conn.—Automobile Club of Hartford's hill climb, Avon Mountain.

October 17, Kansas City, Mo.—Automobile Club of Kansas City's race meet, Elm Ridge track.

October 24, Long Island.—Vanderbilt cup contest.

November 26, Savannah, Ga.—Automobile Club of America's (New York), 400 miles race.

In connection with the present popularity of 24 hours races and the brave array of "records" which is trailing out in their wake it is pertinent to inquire whether anyone at present connected with the promotion of such affairs is aware of the real world's record distance for a drive of twice around the clock. For the benefit of those who cannot do so, it is well to refer to the date of June 28-29, 1907, when Selwyn F. Edge, of London, England, eclipsed all previous records by driving 1,581 miles 1,310 yards around the Brooklands motordrome in exactly 24 hours. This was a continuous one-man performance which, at that remote period was thought to be practically unapproachable.

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TRIO OF CARS STILL RUNNING

Persistency of Perfect Scores Prolongs Boston-Bretton Woods Contest—Survivors of Five Runs Start Again.

What may become of "endurance" contests in the days when cars are perfect and highways beyond reproach is being forecasted in Northern New England this week where three patient survivors of the Bay State Automobile Association's Boston-Bretton Woods 24 hours run are still striving to eliminate one another, a full week after the nominal conclusion of the event. Originally there were 22 cars in the contest. But that was last Wednesday, 23d ult., when the affair was still being considered in the light of a 24 hours run. As a matter of fact nine cars survived the difficulties of the first round to the White Mountains and returned with equally good prospects of being awarded the $200 trophy. Of the remainder of the score or two, 6 were under the shadow of penalization, while the balance fell by the wayside.



CONTESTANTS IN CONTROL AT BRETTON WOODS

To comprehend what is involved in the long-continuance of the tie, it must be understood that perfect score involved not simply covering the 375 miles and over of the course on schedule time, and that the course embraced all the charm of highway variety New England is capable of affording, but that the distance must be covered without making a single adjustment to the car or stopping the engine except at one point specified in the schedule.

On Friday following the nominal conclusion of the contest, the nine surviving cars with their drivers entered upon the process of elimination which has since been going on. By degrees the list was narrowed down until last (Wednesday) night, when but three remained, namely W. G. Jones' Studebaker, Dan Carris's Franklin, and H. Church's Shawmut. Up to the commencement of the run-off, the status of the contest, expressed in tabular form, was as follows:

Perfect Scores at End of 24 Hours.

Frank E. Wing, Marmon.
Harry Fosdick, Lancia.
A. Ayer, Shawmut.
H. Church, Shawmut.
Dan Carris, Franklin.
W. G. Jones, Studebaker.
F. Snyder, Oldsmobile.
Fred H. Pratt, Reo.
J. Coakley, Buick.

Penalizations End of 24 Hours.

	Points Lost.
E. W. Williams, Rambler	1
Harry W. Knight, Pierce	2
A. T. Fuller, Cadillac	22
S. F. Goss, Corbin	25
William Hilliard, Lancia	74
Oliver Light, Chalmers-Detroit	96
*C. Canterbury, Stevens-Duryea	1,000
*Frank Wentworth, Overland	1,000
*Lacaine, Buick	1,000
*L. Dore, Overland	1,000
*Mrs. Mabel Stearns, Overland	1,000
*A. H. Waitt, Buick	1,000

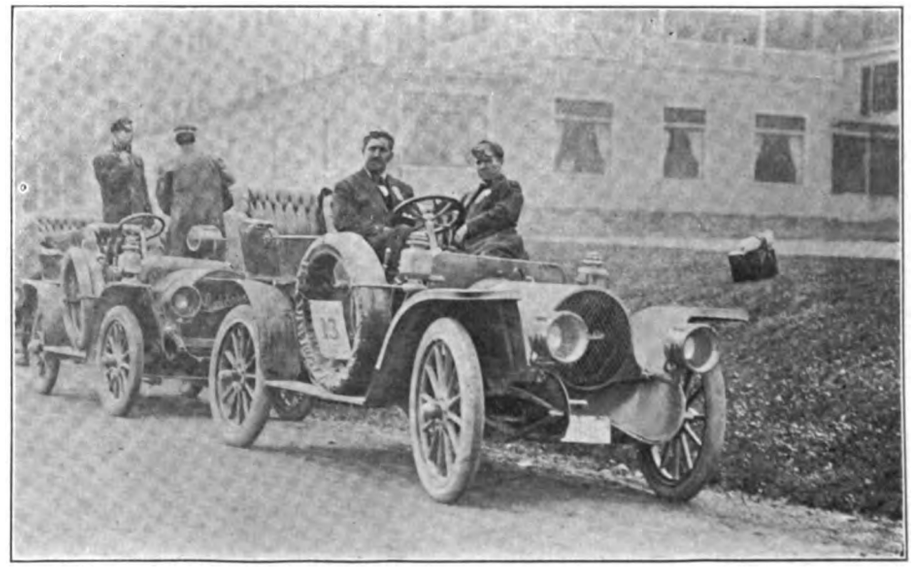
* Withdrew.

The contest had a highly spectacular start. Beginning in the dead of night, it was exceptional in being the first road contest to set out in this manner and the cars with their acetylene searchlights presented a weird appearance as they lined up in front of the Bay State Automobile Association's club house at 10 p. m., awaiting the word "go." A crowd of several thousand persons was on hand to see the start.

The run to Bretton Woods was made via Portsmouth, Rochester, N. H., and the Ossippees, and almost at the very outset cars began to have trouble. The majority carried four headlights with an extra movable searchlight to spot sign posts, but the dense pall of smoke from the forest fires, combined with a damp fog, was too heavy for the shafts of light to penetrate to any distance. Consequently the road was extremely hard to pick and caused several drivers to lose their way.

As far as Portsmouth, N. H., the route was excellent, but between that point and Rochester the character of the roads suddenly changed and the well laid macadam gave way to the soft sandy ruts for which this section is famed. Rochester, the first control, was reached about 3 o'clock Thursday morning, nearly every contestant going through on time.

However, before the White mountain control was reached, several cars had met with trouble, necessitating penalizations. Hilliard's Lancia had carburetter trouble owing to dirt in the gasoline; Frank Wentworth's Overland had lost time in adjustments, as had Light's Chalmers-Detroit. The Corbin driven by Goss had trouble with its steering gear on the way to Rochester, and Mrs. Stearns (the only woman driver in the contest), who pluckily drove her Overland runabout, suffered from injury to a gasolene feed pipe near the same spot, while George Canterbury was obliged to withdraw his Stevens, when the fuel tank punctured. Harry Knights failed to take on sufficient fuel before tackling the mountains and when his Pierce stalled, it cost him two points.



DAN CARRIS, FRANKLIN, PERFECT SCORE

While the contestants were a pretty hard looking half-frozen crowd when the first leg of the run finished at Bretton Woods about 8 a. m., Thursday, they were for the most part in fairly good spirits. All were covered from head to foot with dust and grime and when some of the drivers facetiously inquired for the manicure lady that person

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discreetly retired from business for the time being. It was generally agreed that the trip thus far had been a success, in spite of the adverse conditions encountered. A rest of one hour had been scheduled, before beginning the return trip, but as the contestants desired a little more time to



W. G. JONES, STUDEBAKER, PERFECT SCORE

stretch themselves and thaw out, the committee extended the rest period to 1½ hours. Then Arthur Knights set out with the confetti car and blazed the trail back to Boston.

Oliver Light was first to sample trouble on the return, when he failed to get his car away from the control and lost 82 points in addition to his previous penalization. The Rambler driven by E. W. Williams had a point chalked against it when its intake pipe got choked with dust and stalled the motor for 20 seconds.

Concord, N. H., was the first control on the return journey, and the run to this place was anything but joyous, the worst spot being the climb over Mt. Agassiz. The Buick touring car entry in charge of Lacaine, mixed things up with a fine young colt while going through Plymouth, N. H. The colt got so gay and frisky that it climbed into the car and forced it into a ditch, putting it completely out of commission. It seems that the animal was being trained by its owner to get accustomed to motor cars and unluckily for the driver, the beast was a little too eager in the pursuit of his education.

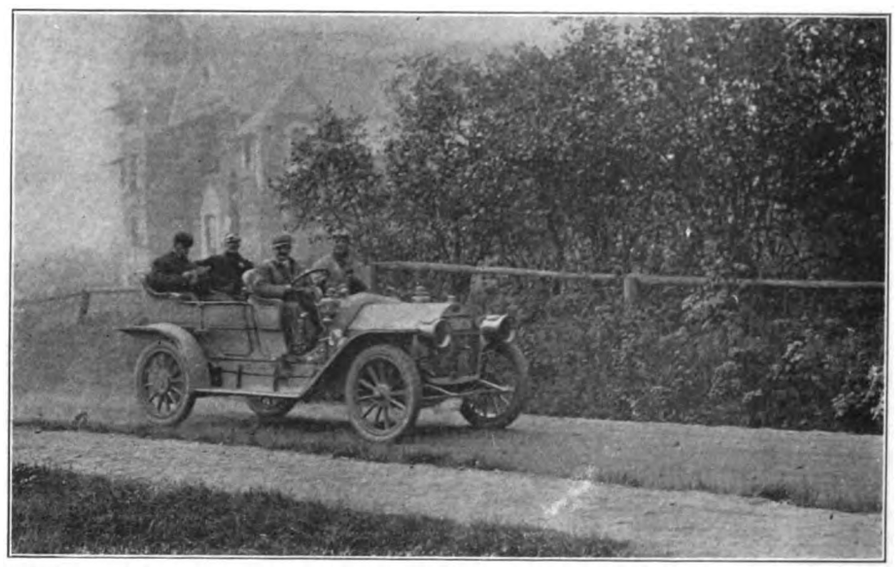
S. F. Goss pulled his Corbin into Concord 6 minutes late, which added to the time lost in tinkering with the steering gear and the 1½ minutes his engine stalled, cost him a penalty of 25 points. Hilliard had extremely hard luck with the Lancia he was piloting. He spent nearly an hour trying to get his carburetter working properly after dirt had put it out of commission and when he finally got running again, he was 16 minutes late at the control and lost a total of 74 points. The Cadillac handled, by A. T. Fuller, pulled into Boston 21 minutes late. Its motor had ceased running for less than a minute, which caused him a total fine of 22 marks.

The balance of the penalized cars did not finish at all. Canterbury was unable to make a repair on his tank and get into the running again, and Frank Wentworth, who got as far as Cambridge with an unbroken score, ran his Overland into a ditch and snapped off a wheel. The two other Overland entries were in the same hard luck. L. Dore had a reluctant carburetter and Mrs. Stearns, after losing 27 points for work on a gasolene feed, stalling the motor 2 minutes and reporting 13 minutes late at Rochester, gave up and did not return to Boston. Lacaine, who got as far as Bretton Woods with a clean score for his Buick, was obliged to quit, as did A. H. Waitt, the other Buick driver, who was forced into a ditch by the colt.

When the run proper terminated, the committee decided to begin the run-off on Friday, September 25, at 10 p. m., starting at Boston and retracing the route. Of the nine perfect score cars, seven started on the second round trip. These were Wing's Marmon, Fosdick's Lancia, Carris's Franklin, Jones's Studebaker, the two Shawmuts of Church and Ayer, and F. Snyder's Oldsmobile. Fred Pratt's Reo and J. Coakley's Buick, both runabouts, did not attempt to fight it out with the rest.

The seven drivers were not literally overcome with joy at the prospect of the long, tedious task confronting them, when their cars were unlocked at the garage. Bretton Woods, which had to be reached in 14 hours, was to be the only control on the round trip until Boston was reached again and only one hour was provided for luncheon and rest at this point. This was also the only time that the engine could be stopped.

The same horrible weather, the same ruts and bumps greeted the pilots on this second circuit, but the test only sufficed to reduce the number to six, while it reduced the number of perfect score cars to four. These were the Marmon, Studebaker, Shawmut and Franklin. Fosdick lost one point when his Lancia skidded into a ditch near Bretton Woods and a limited supply of gasolene caused the engine to stall for 20 seconds when tipped at an angle. Ayer, in the Shawmut touring car lost 38 minutes on the run back from Bretton Woods, as a result of gettink stuck in deep sand at Boscowen. The Shawmut runabout, however, fared better and remained perfect.



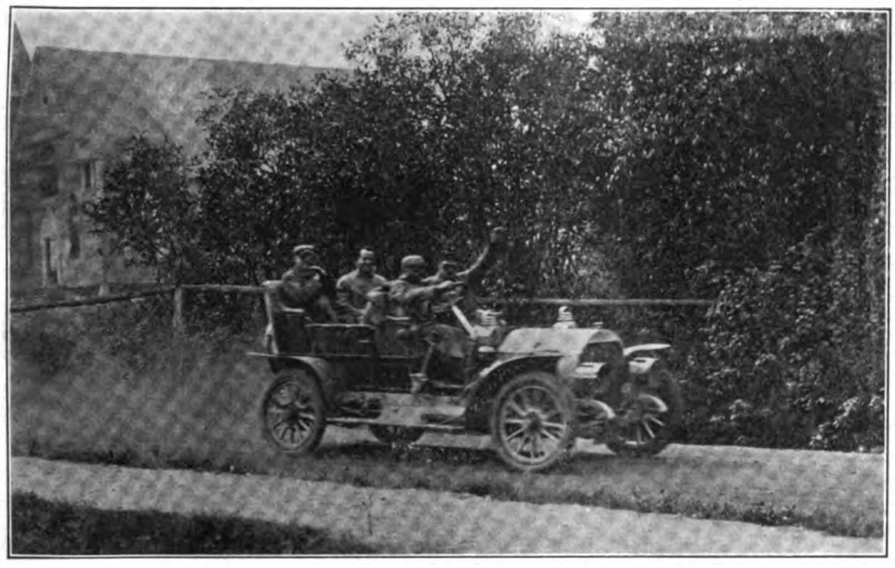
H. CHURCH, SHAWMUT, PERFECT SCORE

On Sunday, the 27th, the weary contest-

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ants had an opportunity to rest, and at 6 a. m. Monday, bright and early, the quartet which still held clean tallies, set out upon their third trial for the winning of the trophy.

The route for this day was to Portland, Me., and return, a distance of 180 miles, for which 10 hours was the allotted time. From Portsmouth, N. H., on the roads were miserable and on this part of the journey Wing's Marmon came to grief. At Wells, Me., 28 miles from Portsmouth, the car went into a ditch and broke a front wheel. This reduced the number of survivors to three: Jones, Church and Carris, making the return control on time. Up to this point these contestants had covered 954 miles.



FRANK WING, MARMON, ONE OF THE LONG STAYERS

Installment No. 4 of the run, on Tuesday, saw the plucky little trio of "perfects" start out on about the hardest run of them all. The route was to Intervale, N. H., via Portland, Me., Poland Springs, Bay of Naples and Fryeburg about 200 miles. From Boston to Portland the roads were good and the drivers had no trouble in reaching the first control at the latter place inside the 8 hours schedule. Leaving Portland though, mud holes, and plenty of them, were encountered, the rain having gotten in some of its effective work. Nevertheless, the three contenders reached the night control in good shape.

Wednesday, the fifth try at determining a winner, like its predecessor, was without success. Each of the trio completed the day's run with scores still intact, the cars stubbornly refusing to break down.

The cars left Intervale at 6 a. m., with Boston as a destination, going via Bretton Woods. The committee in charge of the run was non-plussed when it learned Wednesday evening that all three scores were still perfect. At a late hour, however, it was practically decided to make the three survivors keep plugging along and fight the affair out in the same weary way.

CLIMBFEST IN THE BERKSHIRES

Rosenblum, Carey and Hunt Capture the Honors on Snake Hill—Mason and Gustafson Win Motorcycle Events.

That main artery of the Berkshires, the Pittsfield-Lenox State road, was closed for three hours on Saturday last, September 26, when the Berkshire Automobile Club held its climb up Snake Hill near Pittsfield, Mass. The course, which embraced three "hairpin turns" and covered a stretch of 1⅕ miles, was none too safe for such a contest and only twelve contestants could be rounded up to enter cars in the programmed events.

The curtain raiser was called a "free-for-all, restricted, however, to cars costing between $2,000 and $3,500. Phillip Rosenblum of St. Augustine, Fla., captured this, when he sent a Stearns up the incline in 1:47. A 35 horsepower Jackson car, driven by Crotty, made second best time, while Stuart H. Clapp, in a Berkshire, scored third, and L. B. Gragne fourth with a Pope-Hartford.

I. M. Carey, at the wheel of a Pierce Arrow, swung around the turns to best advantage in the $4,000 class, getting up the slope in 2:07. This was a little better time than that of Daniel England, who was second with a Peerless.

The steam class proved to be a case of "On Stanley, on!" Dr. G. P. Hunt, in a steamer of that renowned characteristic, proved a little too good for Erwin H. Kennedy, driving another of the same make, when he whistled up like a peanut organ in the miserably slow time of 2:54.

Two motorcycle events, for one cylinder and two cylinder machines, respectively, were won by Alfred T. Mason (Curtiss) and Charles Gustafson (Indian), the latter making the hill in 1:38, which was a good deal better performance than that of any of the automobiles.

The summaries:

Free-for-all, $2,000 to $3,500—Won by Philip Rosenbaum (Stearns); second, Crotty and Holbrook (Jackson); third, Stuart H. Clapp (Berkshire); fourth, L. B. Bragne (Pope-Hartford). Time, 1:47.

$4,000 Touring Cars—Won by J. M. Carey (Pierce Arrow); second, Daniel England (Peerless). Time, 2:07.

Steam cars—Won by Dr. George P. Hunt, (Stanley); second, Edwin H. Kennedy (Stanley). Time, 2:54.

Motorcycles, one cylinder—Won by Alfred T. Mason (Curtiss); second, J. A. Finkle (R-S); third, L. V. Vine (Triumph); fourth, Edward David (Marsh-Metz). Time, 2:13.

Motorcycles, two cylinders—Won by Charles Gustafson (Indian); second, F. A. Minkler (Indian); third, Oliver R. Hutchinson (Marsh-Metz). Time, 1:38⅕.

Wilmington Holds a "Roadability Run."

Despite the long list of novelties in the arrangement of automobile contests, in which nearly every apparent possibility has long ago been thoroughly explored, if not exhausted, it remained for Wilmongton, Del., to give birth to yet another new sort of contest which was held on Saturday last, September 26th, and billed as a "roadability run." By the rules of the affair contestants were to drive over a known course from Wilmington to Coatsville, Pa., and return, a distance of 70 miles, following a blind time schedule which was left entirely to the individual imagination of each of the drivers. He who succeeded in approaching nearest to the secret schedule established by the judges prior to the start of the race, was to be adjudged the winner—quite independent of the performance of his car in other respects.

This peculiar honor was accorded to William T. Hammond, who drove his own 20 horsepower Mitchell runabout. He crossed the finish line 4 hours 38 minutes after starting. This was within 8 minutes of the secret official schedule time of 4 hours 30 minutes.

Second prize went to Charles C. Kurz, driving a Franklin, who was one minute behind the winner, and third honors were won by William Stanier with a Franklin runabout, who was 11 minutes off schedule, and three minutes behind the winner. All but two of the two dozen entrants finished in good shape with "perfect scores," save for their sealed time penalizations.

Ryan Speediest up "Old Baldy."

For the third time, Harmon D. Ryan, driving a White steamer, won the annual 100 miles race for the Fenner trophy, from Los Angeles to Mt. Baldy, Cal., on September 20. The other contestant in the event, a Kisselkar, dricen by Latham, was beaten by 39 minutes, Ryan's time being 3 hours 34 minutes.

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RIDE RINGS AROUND COMPETITORS

Drach and Leiser Win Milwaukee 24-Hours Race by Nearly 200 Miles—Two Fence Smashing Incidents.

Duplicating their achievement of last year, a team composed of Bob Drach and Fred Leiser, driving a Locomobile, entered by Dr. J. F. Schreiber, won the Milwaukee Automobile Club's 24 hours race at State Fair park, Milwaukee, on Friday and Saturday, September 25 and 26. They covered 992¾ miles in the allotted time, beating the nearest competitor, R. B. Mader (Mitchell) by nearly 200 miles, and improving their old mark for this track by a good margin. While the total distance covered was more than 100 miles short of the American record, it sets up a record for the Milwaukee track that will doubtless stand for some time, for this course is not an ideal one or as smooth as might be desired for such contests. After a few hours the dirt surface was completely worn from the track and the balance of the contest was run over what had become a ragged, rocky path.

R. Bader scored second place with his Mitchell, covering 808 miles and the Condon-Gesskins team in the White steamer, was third with 712 miles, after having given Bader a hot duel up to the 16th hour. The Midland driven by J. E. Miller and F. Roessler, was fourth with 693 miles; Heber-Odenbrett, the Buick team, fifth, 519 miles; and the Frellson-Eierman combination sixth with the Jackson entry, dropping out in the 17th hour at 350 miles. The Petrel with Schwader-Wait up, ran only 96 miles, and Rentner's Maxwell was retired by a mishap after covering 38 laps. Drach and Leiser kept the Locomobile at the head of the procession practically the entire race, taking the lead from the Mitchell in the second hour and holding it thereafter. The race was started by Mayor Rose at 4 o'clock Friday afternoon and the sensational and melodramatic features of the contest began almost immediately. Before the first hour was up Al Rentner, driving a Maxwell, sent his car through a fence, bruising himself slightly and damaging the car considerably—also the fence. There was no hope of making a repair and the car was withdrawn.

From the outset, it was quite evident that the Locomobile, Mitchell and White were going to outspeed the rest of the field and would finish in one-two-three order, barring accident. Mader's Mitchell held second place between the second and sixth hours, when unfortunately a pin lost from the magneto caused it to stop more than an hour for adjustment, giving second place to Condon's White. It was not until the 16th hour that Mader regained second place; the White having had trouble with its water tanks. From that time on, Mader held his position safely. Miller and Roessler, in the Midland, held fourth position throughout, while the Petrel, in charge of Schwader, withdrew after running six laps. Bates and Odenbrett had cylinder trouble with their Buick and lost more than six hours Saturday in trying to get the motor to run.

During the sixteenth hour, a second smashup occurred. Rudolph Eierman, at the wheel of the Jackson car, banged into the fence near the quarter-mile post with a loud crash. Fortunately neither Eierman nor Bucler, his mechanician, was seriously injured. The car bent its front axle beyond repair and was forced to withdraw.. Eierman declares that he was blinded by a cloud of dust, which fooled him as he was rounding the turn.

Indeed, dust bothered all of the drivers terribly. Bob Drach, who piloted the winning car, much of the time had his eyes inflamed so badly that he required the services of an eye specialist. On Saturday he returned to the wheel and gamely finished the race with one eye bandaged.

In addition to winning, the Locomobile had the distinction of scoring the greatest number of miles in one hour. In the 11th hour of the contest, Drach covered 50 miles, a really remarkable performance considering the ruts and dust on the track. The car went through without the least trouble other than tires.

Previous to the long race on Friday afternoon, a few short events were run off. In these, Harry Nelson, in a Pope-Hartford, gathered most of the laurels, winning four races. Nelson beat John Heber in a Buick (the only other competitor) by more than a mile in the ten miles race for the Augie Jones cup, and in the five miles handicap, in which the Buick received a flying start of half a mile, the Pope-Hartford again outclassed the smaller car, catching it in the fourth mile.

Milbrath, at the wheel of a Peerless, won the "Judge Neelen" five miles event, which was "open only to those who have come under Judge Neelen's supervision." In doing he outran a field of six cars. A. C. Brenckle, in a car known as the "Red Devil"—a new name for a motor car—also faced the starter in this event.

C. H. Neil, in a 90 horsepower six-cylinder Stearns, and Harry Nelson, at the stem of a four-cylinder car of the same make, gave an exhibition five miles race that was a "thriller." While hitting a mile-a-minute gait, the "six" blew up a tire with a loud report, taking a bad skid. It was undamaged, however. Nelson's four cylinder car finished in 6:18.

The summary of the 24 hours race is given in the accompanying table.

SUMMARY OF MILWAUKEE 24-HOURS RACE, BY HOURS

	Drivers and Car.	1	2	3	4	5	6	7	8	9	10	11	12
1	Drach-Leiser, Locomobile	41	87	129	167	212	253	291	333	371	408	458	503
2	R. B. Mader, Mitchell	44	87	117	160	200	200	234	272	308	343	364	405
3	Condon-Gesskins, White steamer	35	78	114	139	178	219	255	296	330	367	406	426
4	Miller-Roessler, Midland	30	57	91	117	127	163	197	229	264	295	330	350
5	Heber-Mortenson, Buick	29	50	70	94	111	129	161	191	226	257	288	315
	Frellson-Eierman, Jackson	26	48	76	112	147	168	185	208	208	214	229	253
	Swader-Wait, Petrel	24	59	65	65	85	96	out					
	Al. Rentner, Maxwell	38	out										

	Drivers and Car.	13	14	15	16	17	18	19	20	21	22	23	24
1	Drach-Leiser, Locomobile	542	571	613	658	700	748	783	826	867	911	952	992¾
2	R. B. Mader, Mitchell	436	472	501	535	569	604	638	671	708	739	774	808¾
3	Condon-Gesskins, White steamer	449	477	504	515	538	558	577	615	646	652	680	712
4	Miller-Roessler, Midland	381	411	443	469	491	517	543	570	604	631	662	693½
5	Heber-Mortenson, Buick	355	389	438	440	440	440	444	446	446	446	478	519¼
	Frellson-Eierman, Jackson	262	296	318	350	out							
	Swader-Wait, Petrel												
	Al. Rentner, Maxwell												

Christie Gives Montreal a Thrill.

Walter Christie's journey in search of fame and fortune led him to Montreal, Canada, where, on Saturday and Sunday, September 26 and 27, he distinguished himself by setting up the mark of 1:10, which was gravely announced as breaking the "world's record for one mile on a half-mile track." Other star performers in the cast of the two-day program were Barney Oldfield and Charles Soules. Oldfield's best two-lap turn was exploited in 1:15. Interest in the huge crowd of spectators rose to a fever heat when Soules lowered the figure by a minute. Christie's exhibition following immediately afterward was the immediate cause of riotous enthusiasm.

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WISEMAN NEARLY WHOLE SHOW

Many Thousands See Him Capture Three Events at Tanforan—Free's Comet First in Exciting Novelty Race.

Any one entertaining the slightest doubt as to the Pacific Coast's enthusiasm over motor track racing might have been thoroughly reassured by taking a trip to Tanforan Park, San Francisco, on Sunday, September 20, when the Olympic Club held its second annual track fest. The park was crowded almost to its capacity with 10,000 spectators, occupying the grandstand and field, while by actual count there were no less than 750 cars parked about the rail.

The star of the matinee was F. J. Wiseman, who at the wheel of a Stoddard-Dayton, won the three events in which he was entered, two 10 miles stock car races and a free-for-all. The best time of the day for a mile lap was scored by Fred Dundee, driving a White steamer in a 10 miles bout with C. Kellogg (Peerless), and V. Verilhae (Thomas). Dundee won the event and did one mile lap in 1.02, setting up a new mark for the track in the fully equipped stock touring car class.

In the opening five miles event for members of the Olympic Club, three contestants blinked when the starter's pistol was fired. C. S. Howard began to leave Rosenfeld's Peerless, and Boas's Thomas in his wake, soon after the start. He was never headed.

Cars listing at $2,750 and under participated in the second dash and Wiseman took the event with ease, pushing his Stoddard-Dayton around for 10 miles in 11:11⅗.

Howard again distinguished himself in the $2,500-$3,500 class 10 miles, leading the entire distance.

Bert Dingley fought it out with Wiseman in the next 10 miles race and provided the biggest excitement of the afternoon. It was nip and tuck for three miles, the latter sticking to the Stoddard-Dayton car until in the fourth mile showed Dingley that he was a little too good for him. Wiseman was not passed thereafter and won in 11:25.

F. Free, who was expected to be a "feature" with his Comet car, did not come to life until the novelty race. In this drivers raced on foot a distance of 50 yards to their cars, cranking the motors and then driving one mile. Dundee and Howard jumped away first, but the Comet driver soon cut loose on his orbit, passing the White and eclipsing Howard's Buick at the tape.

Following this event, Fred Dundee redeemed himself in the $3,500 and over class, when he won with the White in 11:16, and also made the 1:02 mark for the mile.

Wiseman triumphed for the third time in the last event on the program—the free-for-all. The Stoddard-Dayton easily disposed of the Comets, driven by Free and Cooper, the White entry meeting with generator trouble. Wiseman's time was 11:21⅘, 10 seconds slower than his first performance for the distance. Two five miles motorcycle events were on the card, W. G. Collins and W. Dreyer, riding Indian machines, being the respective winners. The summaries:

Five miles handicap, for members of the Olympic Club—Won by C. S. Howard, 5 seconds, (Buick); second, Max L. Rosenfeld, scratch, (Peerless). Time, 6:08⅕.

Ten miles, stock cars, listed at $2,750 and under—Won by F. J. Wiseman (Stoddard-Dayton); second, Bert Dingley (Chalmers-Detroit); third, C. S. Howard (Buick). Time, 11:11⅗.

Ten miles, stock cars listed at $1,500 and under—Won by C. S. Howard (Buick); second, T. Hart (Sunset); third, Frank Murray (Buick). Time, 11:10⅗.

Ten miles, stock cars listed at $2,500 to $3,000, inclusive—Won by F. J. Wiseman (Stoddard-Dayton); second, Bert Dingley (Chalmers-Detroit); third, Fred Dundee (White). Time, 11:25.

One mile novelty race, machines on scratch, drivers to go back 100 yards, run to cars and crank them and drive a mile—Won by F. Free (Comet); second, C. S. Howard (Buick). Time, 1:41⅗.

Ten miles, stock cars listed at $3,500 and over—Won by Fred Dundee (White); second, C. Kellogg (Peerless). Time, 11:16.

Ten miles, free-for-all—Won by F. J. Wiseman (Stoddard-Dayton). Time, 11:21⅘.

Five miles motorcycle, free-for-all—Won by W. G. Collins (Indian); second, A. Holsberg (Thor). Time, 5:20⅕.

Five miles motorcycle, single cylinder—Won by W. Dreyer (Indian). Time, 7:09⅕.

It is Now a Morrell-Thompson Row.

"If Robert Lee Morrell, one-time chairman of the A. A. A. racing board, and now chairman of the Automobile Club of America's contest committee, and Jefferson De-Monte Thompson, present chairman of the American Automobile Association's racing board, would stand aside and were eliminated from consideration, all trouble between the two organizations would disappear as if by magic," is the opinion expressed by one of the men in position to know the what's what of the controversy. "The renewed upheaval," he continued, "is largely a bitter personal affair between those two men and until some one orders or induces them to 'go hence,' I do not believe any very lasting peace is possible. Morrell, who trains with the 'auto editors' and clairvoyants and gives them lots of 'tips,' believes he has 'put it all over' Thompson and Thompson—well, I don't know just what he does think. But both men are stubborn and so anxious to 'do' each other that they don't appear to care what turmoil they create and as both have the time and the money, unless they both are thrown overboard by their respective organizations, they probably will play the part of Kilkenny cats for an indefinite period, and the sport will suffer meantime."

TO INTERPRET THE ARGUMENT

A. C. A. and A. A. A. Committees to Hold Conference—The Brighton Beach Outlaws Profiting by the Tangle.

It transpires that the remarkable agreement whereby the American Automobile Association practically conveyed most of its power over competition affairs to New York's local organization, the Automobile Club of America, never was designed to mean what it says. Men on both sides agree that it was not their intention, as stated by the now famous or infamous definition of an "international race," that all open or free-for-all contests should be made international or to permit any crafty promoter to bunco the public merely by labeling his project "international."

In order to rectify these misunderstandings and to obtain a clear interpretation of the agreement, both organizations are to appoint conference committees, the A. C. A. already having designated W. P. Hamilton, Dave H. Morris, W. G. McAdoo and Robert L. Morrell for the purpose.

Meanwhile, the press agents of the outlaw Motor Racing Association, Inc., are making the most of their opportunities to secure free advertising for their forthcoming 24 hours race. By labeling it "international" and securing an A. C. A. sanction, they claim that the A. A. A. has no jurisdiction over them, with which the A. A. A. does not agree, and which really is of minor importance compared with the fact that practically all of the entrants suspended themselves by competing in the racing corporation's previous outlaw race which was run without regard for either the A. A. A. or A. C. A. As the men have not been reinstated by the A. A. A. they clearly are ineligible to compete, the basic principle of all agreements between all sports-governing organizations being that each shall respect the other's rules and punishments. It would seem, therefore, that if the Automobile Club of America does not uphold the A. C. A. in the present affair, it will violate the ostensible principle for which it originally contended and will indicate that it did not act in good faith in entering into the agreement.

Outlaws to Drive at Brighton Beach.

Unless the American Automobile Association is unwontedly successful in reinforcing its barrier of disqualification against them, practically all the drivers who were recently placed under the ban as a result of their participation in the outlaw 24 hours race of the Motor Racing Association, will again be seen under similar circumstances in the second twice-around-the-clock contest under the same management on Friday and Saturday, October 2 and 3, at the Brighton Beach track. To date, 14 cars have been entered, 11 of which are of American manufacture.

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"13" MAKES ONLY PERFECT SCORE

Hargrave Wins Kansas City Run—Eight Days' Battle with Rain and Mud—Farmer Gathers Rich Graft.

One perfect score, eighteen with scores and three without, tells in brief the story of the eight days' endurance run of the Kansas City Automobile Club, which was brought to a close on Saturday last, 26th inst., when 21 tired drivers drew their cars up along Grand Avenue, Kansas City, and patiently waited while the technical committee minutely examined engines, transmissions, axles and whatnot in an effort to prove that nothing had been left undone to knock the underpinning from perfect scores. Fortunately for the future peace of mind of the technical committee it did not have many technical penalizations to mete out, as there was only one perfect score before it got to work, and there still remained one perfect score when the committee finished its labors.

Harry Hargraves' Corbin was the perfect score winner, its nearest competitor being E. J. Anderson's Rambler, penalized 6 points. Several attempts were made to dislodge Hargrave from his position, as the entrants of cars that finished with only a few points against them discovered a bent axle on Fletcher Cowherd's Corbin, which Hargrave drove. After a round-the-block demonstration that that affliction was not sufficient to prevent the machine from undertaking another long tour, however, the committee was satisfied that no penalty was necessary.

It would not be stretching the truth to say that it is doubtful if any endurance run has ever been held that provided a more racking strain on cars and drivers than the one promoted by the Kansas City Automobile Club. Surely it was the hardest ever held over that part of the map. Eight days of it, totaling more than 900 miles, through rain, over hills, and a great part of the distance over the un-auto-explored roads of Oklahoma was unmistakably an endurance test in every sense of the word.

As described in last week's Motor World 31 cars left Kansas City on September 19th, and before the first day's run ended six had dropped from the perfect score division. The second day's run from Emporia to Wellington resulted in a loss of points for three more and the absolute elimination of two cars. But the following day, when the rain came, and when the cars had to plow through quicksand-bottomed lakes, that was the time when real men wept tears of anguish when they could not reach the controls on time. Ten perfect scores were left at the ending of the third day, when the cars got to Enid.

More mud was encountered in the fourth day's run from Enid to Oklahoma City on the 22d inst., and three cars fell by the wayside before they reached the night control. The luncheon station was at El Reno and one perfect score went down before that place was reached. J. F. Moriarity's Stevens-Duryea was the victim. Moriarity rolled up to the control two hours ahead of time, but just before he reached the line his engine stopped for want of gasolene. Realizing that no engine will run without gasolene to help it along the driver rushed into a grovery store, grabbed a quart measure, filled it before the astonished clerk could recover from his surprise, and hastened back to his car. It was quick work, but it cost four precious minutes. The cars that finished at Oklahoma without marks against them were the Chalmers-Detroit, Corbin, Moon, Ford, Rambler and two of the Maxwells.

Rough roads and mudholes were the features of the trip from Oklahoma City to Guthrie on Wednesday, 2d inst., and they chased the Moon car from the head of the class away down to the bottom. The next day brought one of the Maxwells down as well as the Ford.

When the cars checked in at Oloa, Kan., on Friday night, the 25th, there was only one driver who grinned broadly. He was Hargrave, for up to that point his car had not received a penalization, and, moreover, his was the only one that had not. A mud hole in the Flint hills was responsible for the dropping of Carl Simmons's Maxwell. The car ran over the hills nicely and coasted down into a mud hole that looked innocent until the party got into it. It proved to be of greater depth than Simmons estimated and required nearly two hours herculean work to extricate it. E. J. Anderson's Rambler fell from grace when the official inspector got after it at the finish of the day's run. The car survived the hard schedule, but at the expense of a broken fender bolt and a lost hub cap.

Driver D. B. Huss, of the little Brush runabout, was a victim of Good Samaritanism. After going out of his way to secure help for a disabled car containing a woman and child, he lost the course and arrived at the night control three hours late, and after the checkers had abandoned the post. For this he was later disqualified, though finishing on schedule with the others next day.

The little Chalmers-Detroit, which, up to that time had enjoyed company with the perfect scorers, also had a peck of trouble on the next to the last day. A tire gave way and while the occupants were looking at it another followed. That accounts for another failure to come in with a perfect score. Points were also lost by the Packard and the Stevens-Duryea when "hog backs" got in the way and the cars had to be dug out. A "hog back" it appears, is a grown up waterbreak, and like corn and girls and other nice things, they attain some size in Kansas.

Only one incident marred the otherwise perfect day, except for the mudholes and "razorbacks." That was the enterprising holdup of a Rock (Kan.) farmer, who said at the time that his name was Smith, but later changed it to Erickson. When the pilot car got to a point two miles from Rock, the bridge over a small creek was not in its accustomed place. The committeemen were wondering what to do when a young man rode up and offered to let them go through a field he said he **owned,** but reckoned it ought to be worth something to him. W. G. Coumbe entered into a verbal agreement with the young man to stay at the gate and direct the other cars properly, in consideration of which service Mr. Coumbe gave him $5.

Presently Moriarity's car came along.

"You cannot go through my field unless you pay me $2," said the young man left at the gate by the committee. "I've got a lot of choice cattle in there and they'll scare so much that it will bean a big loss to me." Moriarity asked the man his name and then insisted that "Smith" give areceipt for the insisted that "Smith" give a receipt for the $2.

The young man hesitated and then admitted that his name was not "Smith," but John Erickson, and he added:

"I own most of the land around here."

"Don't wonder at it," grumbled Moriarity as he tucked the receipt into his pocket and drove off.

Later reports at the night control showed that Erickson collected $51 from 22 contesting cars, one non-contestant and the pilot car.

The final day's run into Kansas City on Saturday was easy and enjoyable. Aching backs ached less as the goal drew nearer and there was not a driver who was not glad to see the last control. It was a success, they all agreed, but hoped next year's run would last only five days. Mrs. Kirkland's driving was a revelation to the seasoned man-veterans, for she finished smiling and well up with the leaders, though penalized.

An interesting point is that Hargrave's winning Corbin carried number "13" through the run. An unlucky number gets the only perfect score!

The list of the 21 contestants who completed the long and strenuous run, with the records made, is as follows:

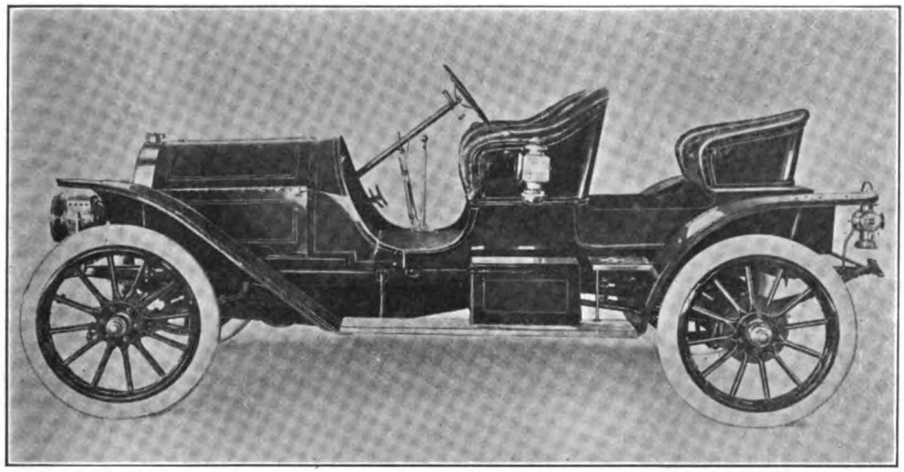
Harry Hargrave, Corbin	1,000
E. J. Anderson, Rambler	994
F. L. Woodward, Knox	989
R. C. Greenlease, Cadillac	980
L. A. Robertson, Franklin	975
J. F. Moriarity, Stevens-Duryea	960
Mrs. Kirkland, Overland	952
Dudley Munger, Peerless	935
W. S. Hathaway, Maxwell	932
J. B. Porter, Chalmers-Detroit	921
C. M. Norris, Ford	919
E. P. Moriarity, Chalmers-Detroit	896
E. P. Moriarity, Packard	886
W. L. Walls, Studebaker	868
W. S. Hathaway, Maxwell	842
E. H. Jones, Maxwell	723
C. Muehlebach, Pope-Hartford	667
C. J. Simmons, Maxwell	479
C. B. Merrill, Moon	000
D. B. Huss, Brush	000
H. F. Worth, Buick	000

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STODDARD-DAYTON OPTIONS BROAD

Models for 1909 Include Variety of Sizes, Uniform in Design and Construction—Noteworthy Changes in Detail.

In a remarkably pleasing application of the principle that the man who buys a car of modest price or small capacity does not by that token relinquish his requirement of all that current practice has deemed best in construction, the Dayton Motor Car Co. is offering as its 1909 line, no less than three different sizes of the same machine. That is to say, while three different types and powers of car are listed, their characteristics are absolutely uniform from the design and construction of the power plants to the outline of the bodies; the differences between them are only those of price, power and capacity. They also share the common benefit of being constructed entirely at the Dayton (Ohio) factory of the company where every component except wheels, carburetters and ignition apparatus are produced by approved and economical methods.



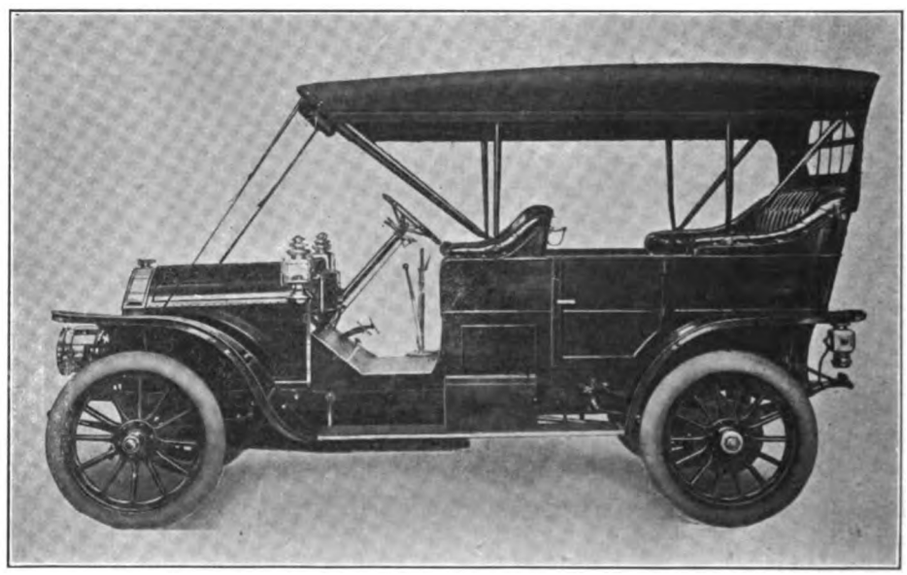
STODDARD-DAYTON "9 H" 25 HORSEPOWER

Beginning with the prefix "9," as indicating the year of production, the list includes models "F," "A" and "H." In addition, and distinguished from the "A" car by the purely runabout characteristics of wheel base and engine position with their attendant details, is model "C." Model "K" is the largest and is a modified form of the present Model "G," brought into the newly standardized form to correspond with the other machines of the line. The engine sizes range from 45 down to 25 horsepower, and the seating capacities vary according to the types of body employed. These are largely optional with the purchaser and comprise an unusually comprehensive offering to choose from. There are the plain, straight line bodies seating four, and in the larger models seven passengers, the "baby tonneau" types with low-backed rear seats of uniform delineation with the front seats, and roadster models with a variety of rumble accommodations. Thus the owner may select a plain box seat with artillery backs for two passengers, individual bucket seats, or the single seat which is more commonly seen in service. In any case, the interchangeable design of all the bodies makes it possible for any desired arrangement to be supplied on requisition, while the owner by the same token is enabled to alter the arrangement of his car at any time he may desire.

The mechanical construction of the cars remains the same in general layout as heretofore. The valve-in-the-head motor, with single rocker arm for actuating both valves is retained; the selective type change gear, shaft drive, and arrangement of control mechanism are unchanged in principle. A number of rather significant alterations in detail have been made, however, which are worthy of note.

Thus in the motor, the former copper jackets have been replaced with cast jackets, the cylinders now being formed in pairs, with large end plates for each twin casting, affording ample room for cleaning and finishing operations. The arrangement of the two-to-one and auxiliary driving gears has been changed somewhat, it now being possible to remove the gear case cover without disturbing the fan drive. The motor lubricating system has been improved also and now comprises a thoroughly effective and automatic method of drenching all bearing surfaces with a constant supply of oil. The lower part of the crank case is divided into two longitudinal compartments, the lower forming an oil-well, into which all overflow from the motor is drained through a suitable filter. From this point the supply is raised by a positive plunger pump driven from the cam shaft to a distributing manifold, whence it is taken by pipe leads to the feeding points. The arrangement of ducts and oil ways is such that by the assistance of centrifugal and rotary action the lubricant is carried to every inch of bearing surface in the motor. A noteworthy instance of this is the method taken of supplying the pillar on which the distributing mechanism for the ignition system is mounted. For this, a spiral groove in the driving shaft is employed to raise the oil to the commutator proper, while provision is made for the overflow to be returned to the case through an independent channel. In the case of the smaller motors the method of mounting in the chassis by means of channel steel cross arms, instead of integrally cast members, also is a creditable detail.

In the arrangement of the transmission, few changes have been made except in the method of actuating the change gear, in which the striking lever, instead of being mounted on the inside of the frame sill, as formerly, is now carried outside the frame in the more conventional position, a strengthening bracket-housing serving to protect and reinforce the attachment of the levers and rocker shafts. The transmission bearings also are made longer.



STODDARD-DAYTON "9 F" 45 HORSEPOWER

In the chassis construction, the frame

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sills have been strengthened very materially, and the steering rod has been brought out to the right knuckle over instead of under the axle. In this way it is removed from the troublesome danger zone it formerly occupied. The wheels and brake drums have been increased in strength, while the side strut rods are now hinged to the frame instead of being given the former ball and socket connection.

In body construction, a metal sheathing has taken the place of the fabric covering for the wood laminations hitherto employed, making a more lasting and climate proof surface to receive the finish. The option offered in bodies, also is extended to the equipment, as for instance, in the case of the ignition system, where a choice is offered of four different types of magneto—U. & H., Bosch, Witherbee, and Splitdorf. In this way, while the machines themselves are absolutely uniform and standard in construction, regardles of size, the purchaser has the benefit of an unusually wide option in finish and fitting, which enables him to give as much scope to individual taste as may be desired.

Pet Cocks in Rear Axle Housings.

Thoughtful makers are accustomed to fitting pet cocks in the housings of rear axles of the live type in order to enable the operator to determine correctly the proper level at which the oil should stand in the bath. Where this has not been done originally, the owner may fit one for himself at slight expense. Too much oil in the casing involves a drenching of the wheels with the overflow. The evils of the opposite extreme are too obvious to need mention specifically. The happy medium, however, is sometimes difficult to attain without some such guide.

Caution in Refilling the Radiator.

Ordinarily there is no danger in refilling with cold water the radiator of a machine which has been running for some little time. In case the water level in the radiator is sufficiently low so that the tops of the cylinders are uncovered, however, it should be seen to that the motor is well cooled off before the water supply is replenished. Otherwise there is danger of cracking the cylinders at the exposed surface, owing to the contraction due to the rapid cooling effect of the sudden application of water at low temperature.

Putting New Rings in Worn Cylinders.

When putting new piston rings into a cylinder which is worn larger at the top than at the bottom, they should have very long halved or tongued ends, fitting rather closely together and loose enough to work perfectly free in the grooves. Unless these precautions are taken, there may be a tendency either to clog in the lower portion of the bore or to spring apart in the upper portion, thus causing undue leakage of gas.

NEW ELMORE FEATURES FOR 1909

Two Models to be Added to the Line—Improvements in Power Plant and Steering System.

With the rapid approach of the fall and winter season with its accompaniment of show dates, the specifications of new and forthcoming models appear with almost bewildering frequency. Notable among these are some of the details of the new Elmore models "44" and "33" which became known only recently. As a matter of course, the distinguishing feature of these machines—the two-cycle motor—will be continued, the three and four cylinder types being employed as in the two current models. In other respects the more important specifications will remain unaltered. Improvements of a more or less significant character have been made, however, which are worthy of note.

Thus in the motors, the use of the offset method of crank mounting makes its appearance, while the radiator size has been slightly increased, incidentally improving the general appearance of the machines, since it involves a bonnet some 1½ inches higher than before. As the frame has been lowered 2 inches, a new form of front axle has been adopted, while the addition of a new steering column also serves to alter the appearance of the machine somewhat. The motor controlling levers are arranged as heretofore, but the steering gear is changed to permit a wider steering lock than before, and to improve the control of the vehicle in the matter of readiness of response.

By altering the position of the actuating spring and placing it back of the cone, the design of the master clutch has been considerably improved. Similarly the design of the rear spring mounting has been improved by increasing the number of spring leaves in service, and reducing the thickness of the members, thus producing a more yielding and responsive mounting. At the same time the distinctiveness of the three-quarter platform system is retained. The tire sizes on the model "33" have been increased from those employed on the corresponding model current to 33 by 4 inches, the ½-inch increase in small diameter doing a great deal in the way of relieving the springs of the more arduous classes of work which it is called upon to perform.

Misleading Carburetter Symptoms.

A fruitful source of puzzling difficulty with many types of carburetter is the automatic intake valve employed to establish the proper dilution of the mixture at various speeds. When this is found to be working incorrectly the most natural inference is that the spring is improperly adjusted. That such is not always the case, but that a far simpler if less apparent difficulty may be at the root of the trouble, was the experience of a foreign motorist of no little self-assumed authority on such matters.

A couple of months after he had begun to drive his present car, as he relates, he found that it was developing an altogether too high rate of fuel consumption. The odor of the exhaust was offensive, and there was an occasional difficulty in starting.

"As I had been experimenting with lubricating oil," he says, "I saddled a brand of the latter with the cause of the foul exhaust. But that evidently did not explain everything, for on reverting to the oil which had previously given good results, there was only a trifling improvement. Deeper investigation failed to disclose anything beyond the evident fact that the mixture was too rich. The car is fitted with one of the best types of automatic air valve that I have seen, but, as we all know, automaticity in these matters is dependent on correct setting. I came to the concluson that the automatic valve was not responding to the call of the engine at low speeds, at least, because the controlling spring was too strong for the engine when pulling slowly. The diagnosis was correct, and substituting a weaker spring for the one in use, the trouble disappeared. . . . .

"The other day I was investigating a somewhat obscure effect, which showed that the two rear cylinders were missing when the engine was throttled down to the lowest point. When I came to dismount the vertical seating for the spring, I found that the plunger rod had no effect on it. It had jammed—which incidentally explained trouble I had had in starting up from cold, that had begun coincidentally with the spring readjustment referred to."

Clearing a Choked Carburetter Jet.

As has frequently been suggested, it is possible occasionally to remove the clogging obstacle from a choked carburetter jet merely by racing the engine. When the clogging is sufficient to cause the stoppage of the motor, however, this remedy appears to be out of the question. By injecting a few drops of gasolene into the cylinders and cranking, immediately opening the throttle to its full amount, tremendous suction is developed for the one or two cycles which may be secured in this way. One or two attempts made in this way often prove sufficient to pull the obstruction through the jet, thus clearing it without necessitating any dismounting of parts or loss of time.

When equipping a car with shock absorbers there is small danger of going astray if the maker's instructions are followed to the letter. In the subsequent readjustments of the equipment, however, there is room for considerable difficulty to be encountered unless great pains are taken to secure uniform adjustment of the braking action on the four corners of the chassis.

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ELIMINATES STARTING DIFFICULTY

Novel Features in New Model of the Unterberg & Helme Magneto—How Uniform Current is Secured.

Because it entirely eliminates that ancient and sometimes justifiable objection to the use of such devices—the starting difficulty—the Unterberg & Helme magneto, for which J. S. Bretz Co., New York City, are the American importers, is entitled to special consideration. Although this instrument

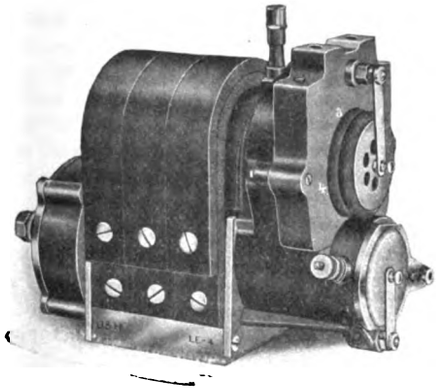


Fig. 1

has been on the American market for some little time and is already favorably known, a new model has just been brought over which embodies novelties in the arrangement of the interrupter and condenser as well as in minor details. Like the other types it possesses the remarkable feature of yielding a uniform current regardless of the rate of rotation of the armature between the slowest possible speed and the normal of ordinary service. Hence the starting

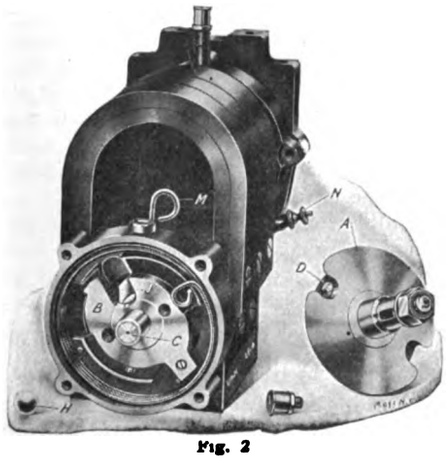


Fig. 2

spark is as powerful as that developed at normal speed and not only is the labor of cranking alleviated by this means, but any uncertainties due to imperfect gassification of the charges at low crank shaft speeds are done away with by virtue of the high rate of inflammation secured.

As will be seen from Fig. 1, there is little in the external appearance of the device to indicate its unusual features. It is of the pure high-tension type with both primary and secondary windings on the armature so that it is wholly self-contained. The driving and distributing mechanisms are disposed at opposite ends of the armature so that the electrical and mechanical connections are separated as widely as possible. The armature is mounted on ball bearings so that only semi-occasional oiling is required, and other provisions of like purpose serve to reduce the amount of necessary attention to a minimum.

The manner in which the strong spark is developed at low speeds is already more or less familiar as employed in the older types.

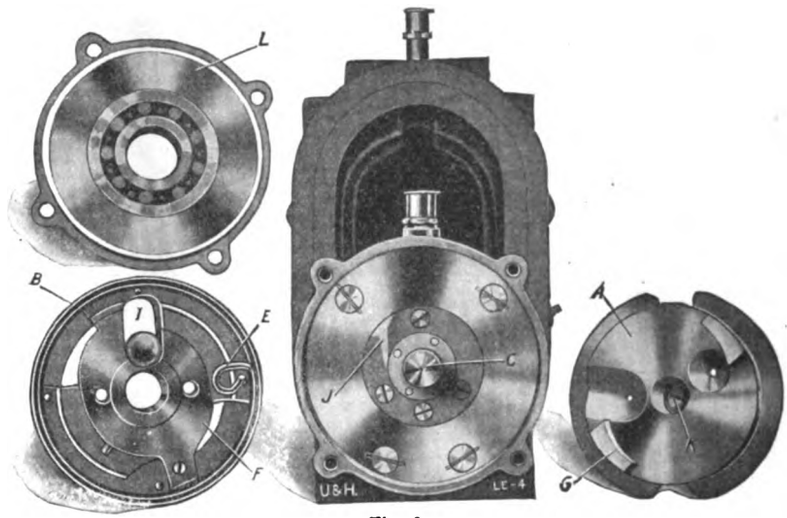


Fig. 3

The starting mechanism itself is shown in Fig. 2, which is an end view taken with the steel driving disc, A, removed from the armature shaft. The reverse of the disc also is shown in Fig. 3, as well as the cover plate, L, and a bronze disc, B, which is affixed to the armature shaft. A coil spring, one end of which is secured to B, and the other to a pin on disc, A, forms the permanent driving connection between the two. A pair of cam-shaped surfaces, F, on B, are held by the spring against two corresponding stops, G. Consequently the spring compels the disc, B, and so the armature to follow A when the latter is driven. At the same time the steel ball, H, which is carried loosely in the slot, I, projects behind B, and is pressed forward at a single point in each revolution by contact with a third cam surface, J, coming against the flat face of the disc, A. The cam, J, being stationary with the magneto frame, the movement of the disc, B, is at once arrested, while A, continues to turn, the ball rolling around in its slot and pressing against A. By this means the spring, E, is wound up until a radial depression in disc A, comes opposite the ball, when the latter is released by slipping into the depression, thereby escaping the cam, J, momentarily and releasing the armature. The armature is then driven forward by the spring tension, and at a rate entirely proportional to the strength of the spring. Its speed is thus greater than that

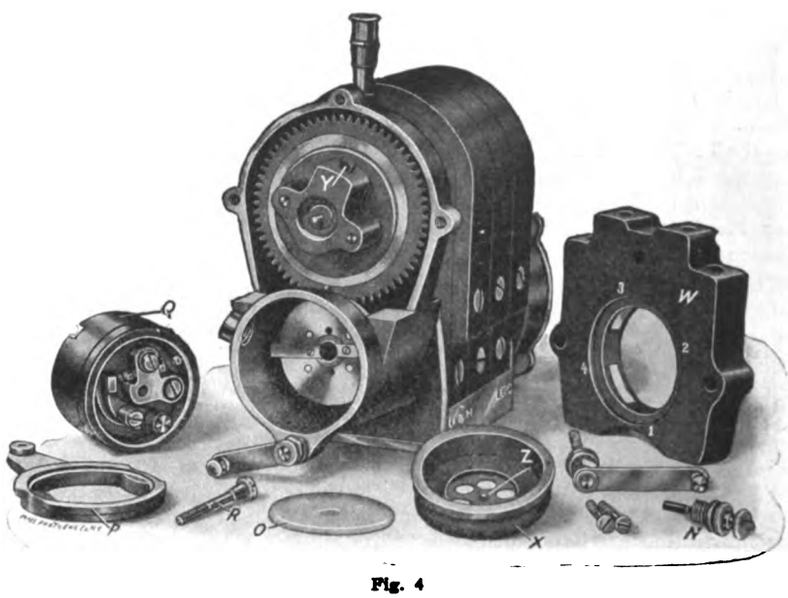


Fig. 4

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of the driving disc by an amount which is determined by the designer. As soon as surfaces F and G are re-engaged, the armature is again arrested until released in the manner described.

This arrangement serves to procure a relatively high rate of rotation for the armature during the zone of maximum current generation absolutely independent of the speed of the driving mechanism. At speeds upwards of 60 revolutions per minute, when the momentary acceleration is no longer required, the ball is driven radially outward by centrifugal force coming to rest at the outer end of the slot, I. The driving and driven parts are then locked together and remain so until the speed again falls below the rate of efiective current production. A further point to be observed is that the armature is invariably released at a point to be observed is that the armature is invariably released at a fixed point which is independent of the position given the interrupter by the spark lever.

A dissected view of the electrical end of the magneto is shown in Fig. 4, in which N is the ground connection to the switch; O, the cover plate over the interrupter; P the ring carrying the interrupter cams, and Q the interrupter housing. The latter is held in place by means of the central screw, R. The action of interruption is brought about by contact between a circular fiber contact finger on the end of the interrupter arm and the cam faces on the interior of the ring, P. The contact, although circular, does not revolve, consequently there is no danger of unequal timing through irregular wear. For the same reason the cam surfaces are of hardened steel—the combination of steel to fiber producing no effect on the stationary members.

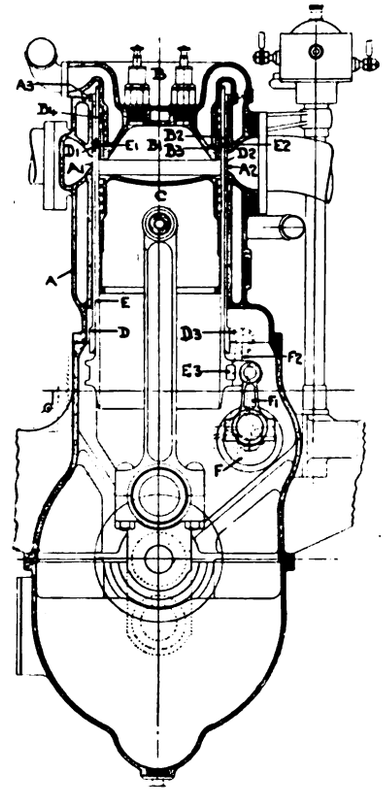
The condenser is enclosed in a ring which is set into the back of the interrupter housing and retained by a threaded disc. The molded insulation of the distributor, shown at W, has four contacts embedded in it, against which the carbon brush, Y, wipes. The former is held in place by three screws. The safety spark gap consists of a metal point, connected to Y, from which the spark jumps to the point Z in the housing, X. A mica window in X permits the spark to be seen without risk of exploding gasolene vapor. A turn of the spring clip seen permits X to be removed, thus permitting exposure of the distributor for the purpose of cleaning.

Another illustration of the care observed in providing for the convenience of the operator is revealed in the method of timing. In Fig. 2, is shown the timing pin, M, by which the armature is located in its proper position for firing. This operation is accomplished in a moment without removing any of the parts of the magneto. The fly wheel is turned until one of the pistons is in its earliest firing position. The armature is located by the pin M, and the magneto is then coupled to the engine in the position thus indicated.

DAIMLER'S "SENSATION" AMERICAN

New Engine Developed from a Chicago Inventor's Device—He Co-operates in Modifying the Design.

Considerable stir is being created in England, and to a less degree on the Continent as well, over the introduction of a modified form of the Silent Knight engine, which first made its appearance in Chicago several years ago, where it later appeared in the car of the same name made by Knight & Kilbourne. As told by the Motor World



two weeks ago, the English Daimler Co. have had in view for a year and more the introduction of a new motor of this general type, although it was not known until recently how closely the Knight patents had been followed. It now appears that the inventor himself has been working in conjunction with the Daimler engineers for many months, and that the resulting modification of his original engine is to be used in the Daimler cars for 1909. Further, it is reported that the Panhard works are already experimenting with the motor and that the makers of the Belgian Minerva car have already taken it up, while representatives of the F. I. A. T. concern, have come from Italy to watch the experiments in France.

Unlike the motor already known in this country, the more recent development is made without the auxiliary exhaust port at the base of the cylinder. Also it is altered in one or two other, though less significant respects. Its construction, which is extremely radical, is shown in the accompanying illustration, the manner in which two sliding, cylindrical valve sleeves have been made to replace the usual poppet valves being perfectly apparent.

In place of the ordinary type of cylinder, a plain casting with independent head is employed, the upper end being closed by a head carrying a piston-like extension, B, which projects slightly into the combustion chamber, forming a pocket around the circumference for the reception of the upper ends of the two sleeves, D and E. These are interposed between the piston and the cylinder wall, being driven from the eccentric shaft, F, which replaces the ordinary cam shaft. Two radial ports are cut in each of the sleeves at proportionate distances from the top, and in such a position that at certain points in the cycle those on either side may register with the wall ports in the cylinder proper, which are used in the distribution of the gases. The actuation of the two sleeves is such that the ordinary operations of the four-stroke cycle may be accomplished as in the regular type of motor in common use.

Among the advantages claimed for the system are, first of all, silence in action, since there are no spring-actuated parts, and no tappets—all the moving parts being in constant, instead of intermittent motion. In addition to this, the valve opening being accomplished by a differential movement of the two sleeves, it is possible to obtain a very quick opening and closing action, which further, is under perfect control. The upper ends of the sleeves sinking into the circular well betwen the cylinder head and the false head which projects from it, form at the point of highest compression and explosion pressures in the cycle, a very tight and restricted combustion chamber. Improved methods of lubrication are thought to have overcome any possible objection which may have existed on the score of engine friction.

The Daimler Co. has in preparation no less than three different models of the engine, at 22, 38 and 48 horsepower, respectively. Tests made with the new models are said to have demonstrated an unusually high development of power for the piston displacement, as well as remarkable smoothness of torque at low speeds and heavy loads.

The Cause of Uneven Brake Wear.

When improperly hardened or when composed of poor grades of metal the cams which are so commonly employed for applying internal expanding brakes are likely to wear unevenly. The same difficulty also occurs sometimes with the shoes of this type of brake. The result in either case is that the braking action is distributed unevenly over the drum and the retarding action is irregular and uncertain. This is an inherent difficulty with this type of brake which is only to be remedied by the exercise of great care in selecting the materials.

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COMMERCIAL VEHICLE PROBLEMS

Electrics for Cities and Gasolene for Country Roads, Says Churchward—Analysis of the Relative Conditions.

In contrasting the relative performances of electric and gasolene driven vehicles, particularly of the commercial variety it is customary to compare their characteristics without regard to the idea that properly they may be constituted to perform totally different classes of service. Thus for obvious reasons the electric stands at a disadvantage as compared with the gasolene machine for work involving long hauls over very hard roads, and simiiarly the smooth action and economical performance of the electric makes it as well if not even better suited for purely city transportation. Alex. Churchward, whose investigations of motor vehicle problems have already been brought to notice more than once in these columns, forecasts an even wider field of usefulness for the electric vehicle than that prescribed by these limits. So soon as the commercial vehicle user shall have awakened to the need of handling the problem of highway transportation on a purely engineering basis, questions of economy are bound to be more carefully considered.

"When comparing the operation of motor driven and horse drawn vehicles, a great deal of prejudice is frequently shown against the former, much of which is well founded, and when we come to analyze the reasons for this prejudice we can hardly blame those who have entertained objections and do make adverse criticisms," remarks Mr. Churchward. "In the early days, and even now in some cases, the purchaser was at the mercy of the glib tongued salesman, whose only aim was to sell the vehicle and pocket his commission, regardless of whether the vehicle was suited to his client's requirements or capable of performing the particular service required. In other words, the salesman promised and all but guaranteed that the vehicle would fill all the requirements of the purchaser. While this purchaser would not buy an electric light or steam plant offhand, but would call in an accredited consulting engineer and have his plans and specifications properly drawn up to suit his requirements, where the purchase of a motor vehicle is contemplated no such process is usually followed, and the most clever and persistent salesman or the lowest price frequently gets the order.

"The evil results of this system, or rather lack of system, are to be seen to-day on our streets, and some time will be required to overcome this prejudice and convince the present large users of the horse-drawn vehicles that a properly selected motor vehicle will be economical, reliable and perform the required service better, quicker and cheaper than their horse-drawn vehicles at present do.

"To-day the leading electrical manufacturing companies will not sell railway motors to a customer unless they know the exact duty of the service on a known road bed. How much more necessary it must therefore be to know the exact conditions of service, where the tractive effort due to road bed alone may vary 1,000 per cent. is obvious.

"Not until this matter is handled in a proper engineering manner will the motor driven vehicle be a genuine commercial success. The day of employing motor driven vehicles, chiefly for advertising purposes, has gone by; the advantages to be gained by the use of such vehicles has been fully demonstrated on a basis of utility and service and the prospective purchaser must and may be shown that there will be a real and tangible saving.

"It must be granted, therefore, that the day will soon come when motor propelled vehicles will be installed and properly selected and then the question at once arises: Which will be the most economical power to use, gasolene or electricity? Each has its own particular field and cannot be ousted by the other—if properly chosen and cared for.

"For cities having well paved streets and not too hilly, and the distance per day to be covered not over 40 miles, the electric delivery wagon will always make a good showing against the gasolene vehicle of the same capacity.

"First. Because of ease of control.

"Second. Rapid acceleration without jerking or straining the mechanism.

"Third. When vehicle is stopped all fuel consumption ceases.

"Fourth. No noise or odor.

"Fifth. Lower maintenance and upkeep on tires due to better and more even acceleration.

Sixth. Lower maintenance of the running gear because of its lower limits of speed.

"Seventh. No jarring or shock when changing speeds.

Eighth. Less cost per net ton mile for fuel, i. e., current against gasolene.

"In England the storage battery companies are now ready to contract to maintain vehicle batteries at so much per mile, and I predict that before long the same state of affairs will exist here. When this does take place the two great items of expense, batteries and tires, will be put on a known basis of so much per mile.

"The expense of charging vehicle batteries from electric light circuits does not cut much figure in cost of operation or cost per ton mile. An electric delivery wagon of standard make will not cost more to operate when charged from city circuits than a similar capacity gasoline vehicle. In other words, the cost of electricity per net ton mile is not more than the cost of gasolene per net ton mile at the present average current prices. The electric vehicle can be kept in any stable or garage in the heart of the city without any extra insurance, while the gasolene vehicle must have special accommodations.

"The maintenance of the battery on the electric vehicle is to-day no more than that of the engine and gear changing device on the gasolene rig. And again, to get low maintenance and maximum economy from a gasolene vehicle it is necessary to employ a higher priced driver than with the simpler electric. The electric motor and controller installed in the modern vehicle has been so far perfected that the maintenance is practically nil.

"Therefore, the comparison at present for city work is between the upkeep of the storage battery against that of the engine, change gears and their accessories, and after all is said and done, results will be found in favor of the storage battery, providing it is properly charged and inspected and the work it is called upon to do is not outside of its proper limitations.

"For suburban service, poor roads and long hauls, the gasolene delivery wagon is superior and will show great economy over both the electric and horse-drawn vehicle, provided it has been properly selected for the work it has to perform. Up to 3½ tons net load the electric is most suited for city work and even to 5 tons where the run is not too long. For suburban work and greater loads the combined gasolene electric will surely compete favorably with the straight gasolene vehicle.

"This is apparent for the following reasons:

"First. Perfect control under any condition.

"Second. No gears to change.

"Third. Impossible to stall engine due to overload or starting too quickly on bad roads. The system is so designed that as heavy road or grades are encountered the torque is automatically increased and speed decreased up to full capacity of engine.

"Fourth. Only one control pedal or lever.

"Fifth. The efficiency of the electric transmission due to its flexibility as high as any form of change gears.

"Sixth. Smooth acceleration from standstill to full speed."

Adjustment for Automobile Lubrication.

In caring for motors which are lubricated by the simple splash method from the crank pit, it should be borne in mind that the entire success of the operation depends upon the adjustment of the oil level within a very limited range. The total variation between the correct amount and either too much or too little probably is not over 5 per cent. of the total quantity. When it is considered that in many machines the crank case capacity is not over 1½ quarts, the need of delicate manipulation in filling is at once apparent. It is chiefly because of this embarrassing feature of the simple system that the more complicated methods of automatic lubrication are justifiable.

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ALL AROUND VIEWS ON GOOD ROADS

Motorists and Grangers Meet Experts in Convention at Atlantic City—Broad Discussion of Highway Problems.

Behind the steering wheel and from the side of the road are entirely different points of view so far as motor cars are concerned. Hence, perhaps, not the least beneficial effect following the New Jersey good roads convention called at Atlantic City, N. J., on Friday and Saturday, 25 and 26th uit., is that the "freeholders" who attended came into friendly contact with many members of the automobile clubs and because of the motor car riding which the automobilists were liberal in providing for them are now greatly modified in their antagonism toward the machines. For the first time, perhaps, some of them have had a view of how matters look to the owner of a car.

Riot and bloodshed at the convention were sidetracked in advance by a truce arranged between the Associated Automobile Clubs of New Jersey, the State Farmers' Grange, and the Boards of Freeholders, to the effect that all subjects relating to speed laws and the like should be ruled out and the meeting confine itself strictly to the actual construction, engineering and financial problems involved in State highway improvement. Although many of those participating in the proceedings were bursting to speak their minds either against the motorists or the constabulary, as the case might be, the screws were clamped down close by the chair in every instance, and peace prevailed.

With long-headed policy, a lot of the automobilists arranged to take to Atlantic City in their machines as many farmer and freeholder delegates as their cars would hold. Not only the saving in railroad fare but the prospective pleasures of the trip inclined to a ready acceptance of such invitations, and the ride opened the eyes of the passengers as to the ease with which an automobile is steered and controlled. They also say that speeds which to the man on the roadside looked reckless, are a slow unfolding of the highway ahead to the motorist. After passing through seven counties and touching widely separated towns in order to pick up delegates, W. C. Crosby, chairman of the convention committee and acting president of the Associated Automobile Clubs of New Jersey, was able to give those in his car a demonstration of how "Jersey justice" is administered, as he was stopped by a constable about 40 miles from Atlantic City and charged with going in excess of 30 miles an hour. Everybody in the car knew the absurdity of the charge, but the justice before whom the case was taken refused even to allow Crosby to plead, and summarily pronounced him guilty. The motorist entered an appeal and continued his trip, letting his passengers draw their own lesson from the incident.

Busy agents for dust preventatives and patent surfaces for highways found plenty of people to work on and to give demonstrations to, as the convention was attended by members of the Associated Automobile Clubs, which isued the first call for it, and by representatives of the New Jersey farmer and freeholder interests, together with county engineers and good roads experts from many places. Governor Fort was ill, and could not come as he had promised to do, but his speech was read by Col. Frederick Gilkyson, State commissioner of public highways. From Washington, representing the Federal Government, A. S. Cushman, director of public roads, attended, and New York State contributed a paper by State Engineer Skene, which was read by George C. Diehl, county engineer of Buffalo.

In addition to booming the scheme for the ocean boulevard, from Cape May to the Atlantic Highlands and New York City, Governor Fort's speech at the opening session pointed out that 1,350 miles of New Jersey road have been built with State aid and 432 without it, and that the problem of maintaining these roads is going to be a big one, inasmuch as it will cost about $300 per mile to keep them in condition after they wear down a little more. The annual expense involved for repairs alone would therefore be about $261,000, he declared, two-thirds of which amount is now paid by the registration fees of automobile owners. He urged the early abolishment of tolls on the few remaining toll roads in the State and suggested that something a little more yielding to horses' feet than macadam be used in future road construction.

During the afternoon session the following addresses were made: "From the Grangers' Viewpoint," by G. W. F. Gaunt, master of the New Jersey State Grange. "From the Road Drivers' Viewpoint," by James M. Beldon, secretary of the Essex County Road Drivers' Association. "Good Roads from the Standpoint of the Dweller Along the Way," by Frank Bergen, Elizabeth. "From the Automobilists' Viewpoint." by J. B. R. Smith, New Jersey Commissioner of Motor Vehicles. "From the Citizens' Standpoint, the Relation of the User of the Highway," by Judge W. H. Spear, Jersey city. Friday night the delegates were entertained by the Atlantic City Automobile Club with a beefsteak dinner at one of the hotels, the "doings" being heralded as "A Night in the Kitchen."

At the closing session on Saturday, further speeches and discussions were the order of the proceedings, after which the committee on resolutions undertook its duty of crystalizing in black and white the general sentiments and results. Their labors as approved by the convention effected a set of resolutions commending the aims and purposes of the gathering in assisting the good roads movement and providing for an annual convention in the interest of good roads, to be held under the direction of the Associated Automobile Clubs of New Jersey. Although the discussion of legal matters relating to automobiles had been barred from the convention speeches or discussion, the prevailing sentiment favoring modifications in the present stringent New Jersey automobile law found expression in a resolution to that effect.

Incidental to the serious business, the possibilities for seaside frivolities and entertainment which Atlantic City offers were fully explored, the gaiety of the resort having as yet in nowise abated. The 200 automobiles used by the members of the motoring fraternity in bringing themselves and a good share of the non-motoring delegates to the convention were kept busy all the time in the service of the ladies.

Big Loss Caused by Poor Roads.

That $3,000,000 is lost daily in the United States because of poor roads is the statement by which Samuel Hill, the well known road expert of Seattle, Wash., sums up the constant waste and expense that lack of properly built highways impose upon those who have to haul loads in the rural districts. On his way to the First International Congress of Road Builders, which is to be held in Paris for two weeks following October 11, Hill stopped over in New York City a few days, before taking ship, and talked freely about road matters. He advocates the use of convict labor by the states, and thinks that the Federal government should be much more liberal in making appropriations for the assistance of districts desiring improved highways. At Paris he will tell of the very successful and satisfactory roads constructed in the State of Washington by the use of cube rocks of graduated sizes, melted tar and fine pebbles.

Good Roads Enthusiasm in California.

By proposing a special bond issue of $18,000,000 for the construction of two great highways in California to join the county seats of all the counties in the State, Governor Gillett has secured the good will of all local good roads advocates all over the territory. At a good roads congress held in Sacramento on the 19th ult., 82 delegates, representing 11 counties, rose up en masse and called him blessed. A long list of addresses were delivered concerning various phases of road financing and building, and technical men representing the counties, the State and Federal government, gave the convention the results of their investigations.

To Raise Road Building Fund.

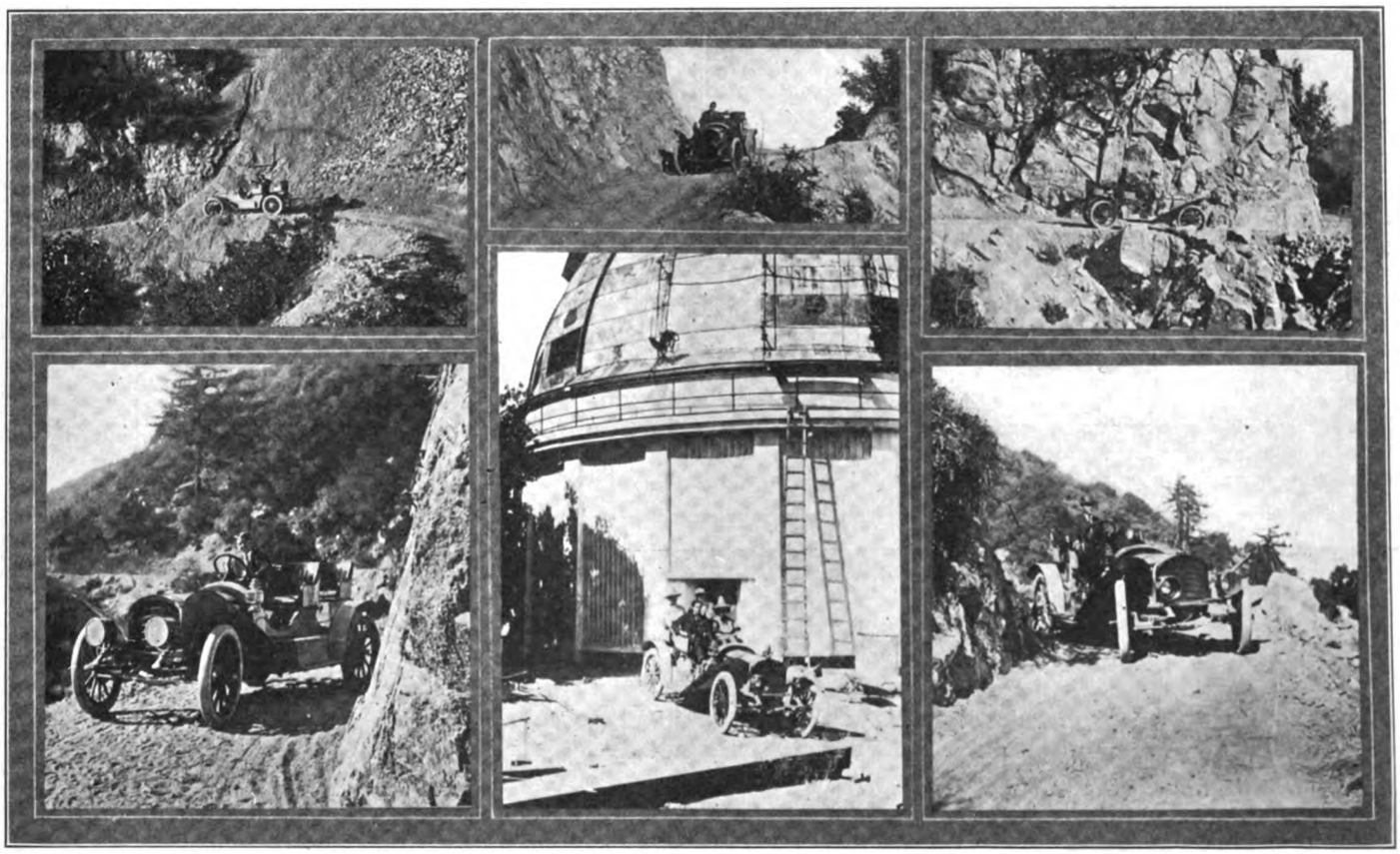
So desirous are the members of the Scranton (Pa.) Automobile Association that a State road be built over the Poconos toward Stroudsburg, Pa., that they have undertaken to raise $6,000 to assist the townships along the line. With such a financial lift, the farmers and the residents of the small towns are expected to go into the movement with enthusiasm.

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AUTOMOBILE FOR SKY EXPLORERS

Mount Wilson Observatory to Have Motor Car Service—Successful Rambler Test on Zigzag Mountain Road.

Not long ago, a public spirited citizen of a western village wired Andrew Carnegie: "Can you please furnish our town with a jail?" Upon another occasion, a librarian is said to have written the eminent steel magnate: "Could you kindly furnish our Carnegie library with an automobile?"



VIEWS SHOWING RAMBLER CLIMBING THE CROOKED ROAD UP MOUNT WILSON

It is understood that these modest requests were not fulfilled. Nevertheless, the automobile is destined to play an important part in the scientific work to be accomplished by the Carnegie Institute of Washington in the big observatory now being erected on the top of Mount Wilson, 14 miles from Pasadena, Cal. Professor Ritchey, superintendent of the Carnegie Institute, who is in charge of the work of building the huge 60-inch telescope, has during the past year been facing quite a problem in connection with the erection of the large observatory. The distance from the Pasadena workshops to the top of the mountain is nine miles, and Professor Ritchey and other astronomers have to make frequent trips to the summit. Formerly they walked up, thereby consuming a great deal of time, so during the past year they built a road at a cost of several thousand dollars. This has a rise of 5,200 feet in the nine miles over which it extends, and skirts the edge of the mountain, with many short turns and dangerous inclines, some grades being as great as 25 per cent.

It occurred to Professor Ritchey and his associates that a great deal of time could be saved by using an automobile that could negotiate the grade—provided such a one could be found. The matter was taken up with W. K. Cowan, Los Angeles, representative of Thos. B. Jeffery & Co., and a Rambler car was furnished for a test trip to the top of the mountain.

The ascent was made in 1 hour and 15 minutes, most of the climb being made on the intermediate gear. Many of the turns were so short that the car had to be backed once or twice in order to make the turn safely.

The success of the test was such as to convince Professor Ritchey of the adaptability of the automobile to such strenuous hill climbing, thus saving a great deal of time and making it possible for necessary supplies to be transported to the top of the mountain, without difficulty. The elimination of the necessity for physical exertion on the part of the members of the astronomical staff is in itself a matter of much importance.

This is the second astromomical station in California to receive the benefit of motor car transportation. An automobile stage line was started in operation about two months ago, running up Mt. Hamilton to the famous Lick Observatory, near San Jose.

Automobile Line Planned for Mt. Desert.

A new and strategic development of the conflict between the pro-exclusionists and non-exclusionists of the automobile from Bar Harbor was brought to light late last week when it was discovered that a syndicate had purchased the Green Mountain road, one of the most beautiful and exclusive pleasure drives on the island and proposed converting it into an automobile route up which sight-seeing cars would be driven for the purpose of giving the public the benefit of the abundant views. Just who is back of the plan and what further extension of it may be contemplated has not as yet been learned. It is known that a thorough reconstruction of the road will be untertaken before another season opens, however, so that the business of automobile transportation may go merrily forward as soon as the season permits. Just what means the summer residents will take to further block the use of motor cars on the island remains to be seen, but it is known that they are by no means idle, and next summer undoubtedly will witness active renewal of the merry war.

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PRIZE ARGUMENTS FOR SALESMEN

Jeffery Institutes Odd but Practical Contest —Ten Planks in Rambler Selling Platform Prize Winners Produce.

It is part of the trade of salesmanship to have the advantages of the product from the manufacturing, marketing and utility points of view condensed and studied to a degree where they form a part of every sentence spoken and every action carried out. It is not always, however, that the manufacturer or dealer is able to modify his selling platform as it were, nor to gather about him assistants of the sort who would be able to make the most advantageous use of such a platform did it exist. On this account, competitions organized by and within selling organizations to determine the most telling arguments to be used, in carrying or suppressing opposition, are at once interesting and instructive. A case in point is the recent contest instituted by Thomas B. Jeffery & Co., in an effort to bring out the best reasons why it is most advantageous for a dealer to engage in the sale of the Rambler car.

No less than 217 experienced and successful Rambler dealers grasped the opportunity of bidding for a share in the $125 prize distribution. Ten men, each of whom has been identified with the company for many years, served in the judiciary capacity. Needless to say the contest was productive of a host of useful and suggestive ideas.

J. F. St. Clair, Concordia, Kansas, won the first prize of $50. Miss Ella J. Brown, who, as secretary of the Coit Automobile Co., Omaha, Neb., has helped manage a $300,000 business during the past year, was awarded the second prize of $25, while L. G. Martin, Pittsburg, Pa., drew third prize, and I. R. Campbell, Des Moines, Iowa, fourth.

The ten best reasons ultimately chosen are as follows:

"The goods—the quality of the Rambler product.

"The reputation and stability of the company.

"The factory—the largest and most complete of its kind.

"The advertising—the most extensive and effective done by any manufacturer.

"The sales helps—the system of answering the inquiries of all prospective customers by personal letter without cost to the dealers.

"The interchangeability of parts and quick service in supplying came.

"Prices of parts—one-half to two-thirds lower than those of any other car.

"Fourteen thousand satisfied users—every one helping the dealer to sell Ramblers.

"Fourteen thousand cars in use—not a single one out of commission.

"The policy of the company—fair prices, best product, fair treatment."

Wagon with Detachable Power Plant.

Users of business vehicles of the self-propelled type are probably in a good position to appreciate the "strong" feature of the new Grabowsky power wagon, which is the quick detachable power plant. Instead of the more conventional arrangement of parts, the entire motor and change gear group is mounted on the two side rails of the sub-frame in such a way that by loosening a couple of bolts and casting off a half dozen minor connections, the entire aggregation may be drawn forward and out of the machine. In this way it is possible to replace the engine with a fresh one in a few moments, or to perform some trifling repair under the most advantageous circumstances, without delay and without having to resort to acrobatic contortions. This feature, as well as numerous others peculiar to the line are described and illustrated in the new catalogue the Grabowsky Power Wagon Co., Detroit, Mich., have issued.

"The A B C of Electricity" will aid you in understanding many things about ignition that may now seem hard of understanding. Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

Long Island Motor Parkway Sweepstakes

SATURDAY, OCTOBER 10.
Starting at 9 A. M. Leading makes of cars to compete. $5,000 in prizes—cash or plate.

William K. Vanderbilt, Jr. Cnp Race

SATURDAY, OCTOBER 24.
Starting at daylight. American and foreign contestants. Speed. Endurance. Crack drivers.

Fastest course in the world, including 11 miles of cement parkway. Boxes, seats, parking spaces, at 437 Fifth Avenue, Telephone 5293—38th St., New York City.

The Vanderbilt Cup Commission.

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DECALOG OF THE STORAGE BATTERY

Weiss Formulates Ten Precepts for Its Care —Methods for Testing and Regulating Its Condition.

Because the early training of the average motorist was almost wholly in the use of dry batteries for ignition purposes there is a very general tendency to neglect accumulators when applied to this use. This tendency is further accentuated in cases where double ignition is provided for, by the fact that the batteries are seldom called into requisition. Hence the best possible results are seldom attained. On this account, the watchful Technical Committee of the Long Island Automobile Club has been moved to issue a decalog of storage battery precepts which, because of their concise and comprehensive nature should be studied by every user as well as by those whose duty it becomes at times to instruct the novice in the care of his new machine.

"Although a storage battery is a somewhat delicate apparatus and easily spoiled," says the committee through its chairman, Louis T. Weiss, "yet ordinary care, and a rigid adherence to a few simple rules will keep the cells well and healthy so that the expert or doctor will not be needed during the greater part of their useful life." The Ten Commandments for the battery user, are as follows:

First. The first necessity is cleanliness. There are exceptionally few cases to be observed where cleanliness is apparent. There is nothing that more easily provides and causes a leakage of the current, than accumulation of dust and many other kindred types of matter. When such are permitted to remain on the top of the cells they become saturated with the moisture which inadvertently sprays from the cells or cells while charging, and thus form an excellent by-pass from positive to negative terminals, and in a very short time entirely empties the battery.

Again, this moisture is permitted to attack the terminals of the battery, and these being generally made of brass or similar metal are easily attacked and corroded so that they are immovable, and sometimes entirely enveloped by a heavy coasting of blue crystals of sulphate of copper. This salt is readily soluble in water and acids, and if allowed to get into the electrolyte of the battery, is fatal to its life. Yet how often is this salt washed off with water, or removed by other methods, and allowed to fall into the cells? It is well to keep the terminals coated with vaseline or thick grease and so prevent corrosion. Just a few minutes, say once a week, will suffice to clean up a battery, and so comply with that first and most necessary rule.

Second. Always keep the plates covered with their electrolyte, or acid, because if they are exposed or out of the liquid a sulphation occurs of such a nature as to damage the plates irreparably, besides which that exposed surfaces is inactive and useless.

Third. Never add sulphuric acid to the cells to compensate loss, unless such loss has been caused by a spilling of the acid, and then first ascertain the specific gravity of the acid remaining in the cells and make up with diluted acid of the corresponding specific gravity till the plates are again covered. In all cases of adding to, or compensating evaporation losses (except as above stated) nothing should be used but pure, distilled water, and absolutely pure and clean acid. A healthy battery used continuously, should not require any addition of acid more than once a year, but will probably require pure water at least once a week, if not more often.

Fourth. Provide yourself with a hydrometer to enable you to test your electrolyte and acids periodically, and you will avoid a great deal of trouble.

It may be said that the condition of the specific gravity is the pulse of the cell, and certainly it is the one means of ascertaining the condition of health of the cell or battery; like one's pulse, which enables the doctor to tell you whether you are well or not.

Let us suppose that the specific gravity of the electrolyte as given by the maker of the battery to be maintained at 1.250 degrees, at a temperature of 60 degrees Fahrenheit, when fully charged and cell in thorough working condition. Then apply the following:

At the end of the complete discharge the specific gravity will read somewhere about 1.150 degrees. If only half discharged, then about 1.200 degrees. If only one-quarter, 1.225 degrees, or three-quarters, 1.175 degrees, so that one may arrange a scale whereby the amount of charge used, or that remaining in the cells, may be estimated.

On re-charging, the specific gravity will rise from its reading of 1.150 or whatever it may be, to that of 1.250 again, thereby indicating the cell has received its full charge. In cases where the specific gravity will not show any rise during or at the end of its charge, it indicates a short circuit, and the cell has not received its charge.

In cases where the specific gravity comes up to 1.250 at the end of its charge, but falls to a lower figure during a period of idleness or standing for say 24 to 48 hours, this also indicates a short circuit, or else local action (or internal discharge), due to contamination of the electrolyte by some impurity.

Fifth. Never, on any account, discharge your battery below 1.8 volts per cell, because it develops a condition of chemical natures that is not easily remedied. To ascertain this it is necessary to have a small pocket voltmeter, reading from say 0 to 3 volts. These are also very inexpensive and will, if used, greatly prolong the life of your battery by helping you to know when the battery has fulfilled its functions. It is the greatest defect that a battery has, that it cannot give warning, groan, or in some way protest against being overworked.

The normal voltage of the storage battery is 2.0 per cell when doing no work, which is, if the electrolyte be 1.250 specific gravity, usually raised to about 2.10 volts. The storage battery, unless worked below 1.80 volts, has a recuperative power of rising from 1.80 volts to the normal of 2.10 volts within a few minutes after the discharge current has been discontinued. Unless a current is passing of say one-half of one ampere, the voltmeter reading is useless.

Sixth. Never adopt the method of putting a wire across the positive and negative terminals to see if there is any "spark." It is almost a dead short circuit, and if the cell be of a small capacity of say, thirty ampere hours, and the wire No. 16 copper, the current passing may be anything from 30 to 100 amperes for a fraction of time, which, when calculated is a very appreciable amount of the total capacity. It is also very detrimental to the cell in assisting the disintegration of the plates or active material thereon.

Seventh. Never be tempted to try everybody's advice upon any defect if it is serious but get good advice at once from a reliable source. Hardly two persons have the same experience or the same conditions, and what another did satisfactorily may be very unsatisfactory for you to do.

Eighth. Never allow the cells to stand in a discharged condition, as it becomes very difficult to get them properly charged if left standing any length of time, unless great care is taken during the succeeding charge.

Ninth. Do not forget that the discharge current of the battery may be affected by the adjustment of the trembler of the sparking coil. The current rate of the discharge should be about one-half an ampere, but a badly adjusted coil may take as much as 3 or even more amperes, thus eating up the energy of the cells, in ampere hours, in one-sixth of the time. Thus a 30 ampere-hour cell discharging at one-half an ampere will last 60 hours, but discharging at 3 amperes will last only about 8 or 9 hours.

Tenth. Although, as before stated, the storage battery is a more or less delicate apparatus, yet if only one-tenth of the attention given to the mechanical parts of the car be bestowed on the battery it will be found to be a wonderfully robust and reliable apparatus. But if neglected entirely and left to attend to itself, or do the best it can for itself, it will be found to arrive very soon at a condition of disease generated by a congestion of small ailments.

In addition to the ten, an eleventh commandment also is added, which, like all eleventh commandments is sufficiently obvious to be overlooked frequently. It is: Always adhere strictly to the maker's instructions which will apply to his type of cells.

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—Afford to **buy** it because it is moderate in price.

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The Mitchell Agent will be glad to take you out at any time you say. Just call him up—no obligation on your part.

Try the $2,000 Touring Car—the $2,800 Limousine—the $1,250 Roadster or the $1,000 Runabout.

Get demonstrations of high priced cars and compare the Mitchell with them.

Call up the Mitchell Agent to-day and just say

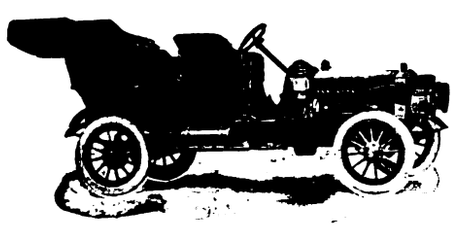
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Write for Catalogue No. 18, describing the other Mitchell models.

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30	9.25	710x90	11.85
32	9.45	760	12.10
34	9.55	810	12.60
36	9.75	840	12.80
28x3½	11.85	870	13.25
30	12.10	910	14.10
32	12.60	960	16.70
34	13.25	1010	18.15
36	14.10	765x105	15.10
30x4	15.10	815	15.35
31	15.20	875	16.70
32	15.35	915	18.15
34	16.70	820x120	17.35
36	18.15	850	18.35
32x4½	17.35	880	19.35
34	19.35	920	20.70
36	20.70	1020	22.15
34x5	20.10	1080	24.00
36	21.60	895x135	21.50
34x5½	21.50	935	22.15
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NOTE.—A discount of five per cent. will be allowed if cash accompanies order; otherwise these prices are net.

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The Week's Patents.

892,452. Spring Wheel for Motor Cars and Other Vehicles. Emilo Rodriguez, Chiswick, London, England. Filed July 23, 1907. Serial No. 385,130.

1. In combination, a felly having two springs of elliptical shape connected thereto by a bolt, the ends of the springs connected to cross bolts, a tread suspended upon the said springs by side pieces, a bolt carried by the said side pieces, carrying a roller, a flexible band of leather connected to the said cross bolts of the springs, the said roller resting in the leather band, to flexibly support the tread.

892,481. Glass Front for Automobiles. Julius Wieden, Los Angeles, Cal. Filed Oct. 2, 1907. Serial No. 395,631.

1. A glass front for automobiles comprising a frame, means for attaching the frame to an automobile, a series of transparent panels pivoted in the frame, an operating bar connected with all of the panels, a strap around the center of each panel, each strap having an ear, an operating bar connected to the ears, a hand lever pivoted on the frame, a link connecting the hand lever to the operating bar, a sector, and latch mechanism for latching the hand lever in position on the sector.

892,499. Carburetter. Ernest N. Broderick, Detroit, Mich. Filed May 22, 1907. Serial No. 375,030.

1. A carburetter comprising a float chamber, a vaporizing chamber over the float chamber, an atomizing valve discharging from the float chamber into the vaporizing chamber, opposite air inlet ports in the vaporizing chamber, a valve closure within the vaporizing chamber, adapted to close said ports either independently or simultaneously, deflecting means opposing the air ports, an outlet port in the vaporizing chamber, a closure for the port within the chamber, and a throttle lever controlling the atomizing valve and inlet and outlet closures.

892,539. Driving Mechanism. George W. Morris, Racine, Wis. Filed April 20, 1908. Serial No. 428,204.

1. In a device of the class described, the combination with a shaft and a wheel loosely mounted on said shaft and provided with an internal gear and a laterally-extending annular flange, of a second wheel loosely supported on said flange and also provided with an internal gear, and a clutch device secured to and slidingly mounted upon said shaft and adapted to be moved into engagement with either of said internal gears.

892,544. Engine Starter. George L. Odenbrett, Milwaukee, Wis. Filed Oct. 5, 1907. Serial No. 396,105.

1. A starter for multiple cylinder engines, comprising a selecting valve driven by the engine and adapted to establish communication with the respective cylinders of the engine when their pistons are in position to receive an explosion, a charging chamber communicating with the selecting valve, an air reservoir and a gas reservoir communicating with the charging chamber, and controlling valves in the connections between the charging chamber and the air reservoir and the gas reservoir and the selecting valve respectively.

892,569. Fuel Burning Apparatus for Motor Vehicles. George E. Whitney, Boston, Mass., assignor, by mesne assignments, to Stanley Motor Carriage Company, a Corporation of Massachusetts. Filed Feb. 18, 1901. Serial No. 47,723.

1. In an apparatus of the class described, one or more mixing chambers having curved side walls and top and bottom plates, air supply tubes leading through said chambers and plates, an inlet conduit for each mixing chamber entering the latter adjacent and approximately tangentially to the curved side wall thereof arranged to project its supply through the bottom plate and towards the top plate of its chamber.

892,609. Starting Device for Explosive Engines. Lawrence S. Nash, Detroit, Mich. Filed July 31, 1907. Serial No. 386,358.

1. Starting mechanism for a multi-cylinder engine, comprising a pair of valves each adapted to admit compressed air to the cylinder of the engine, a cam shaft driven by the engine cams movable on the said shaft, adapted to operate said valves, a slide rod journaled in the shaft, oblique slots formed in the shaft, studs extending through the slots, connecting the slide rod and cams, and a spring on the slide rod, normally holding said cams disengaged with the valves.

892,673. Wheel Tire. Andre Michelin, Paris, France. Filed No. 4, 1905. Serial No. 285,817.

In combination in a tire, a body, a tread attached thereto, a band of leather over said tread, rivets passing through said tread and band of leather, a layer of rubber uniting said band of leather to said tread, and a layer of rubber between said tread and the body, in the middle part of the tire, in which layer the washers of the rivets are embedded.

892,691. Roller Bearing. Eliel L. Sharpneck, Winthrop, Mass. Filed July 8, 1907. Serial No. 382,577.

1. A roller bearing comprising a cylindrical casing having an annular rib on its inner surface, a series of anti-friction rolls having annular channels, engaged with said rib, and annular grooves, a series of pairs of separator rolls, arranged between the anti-friction rolls, one of each pair of the separator rolls having annular ribs engaged in the annular grooves of the anti-friction rolls, and rotatable means engaged with each pair of separator rolls, as described.

892,744. Transmission Gear. Frederick E. Landberg, McCook, Neb. Filed Aug. 27, 1906. Serial No. 332,257.

1. The combination, with an intermediately pivoted transverse axle and wheels loosely mounted on the ends thereof, of gears rigidly secured to said wheels, a shaft mounted on said axle, gears carried by said shaft and adapted to mesh with the gears on said wheels, an auxiliary shaft on said axle, means to drive said auxiliary shaft including a sprocket mounted thereon and having universal movement with relation thereto, and means of connection between said main and auxiliary shafts.

892,761. Radiator. George W. Nutz, Chicago, Ill. Filed Sept. 16, 1907. Serial No. 392,973.

1. In a radiator of the type herein described, the combination of a casing comprising upper and lower horizontal members and vertical side members forming an open center, a series of radiator tubes arranged in said center and a series of secondary tubes arranged within the radiator tubes and open to the atmosphere at both ends, one of the casing members having a curved inlet throat formed by a flat plate to which the secondary tubes are attached at one end and a curved plate forming a deflector for directing the air into the secondary tubes, substantially as set forth.

892,763. Induction Coil Unit. Carl A.

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Hfanstiehl, Highland Park, Ill. Filed Nov. 11, 1907. Serial No. 401,640.

A coil section or unit, comprising a pair of outer spool heads formed with central orifices and anular necks, one of which necks fits over the other, an intermediate head formed with a corresponding orifice and with a small passage adjacent to said orifice, said intermediate head being arranged intermediate of the outer spool heads, and reversed coil windings in the annular cavities between the heads aforesaid and connected together by a wire extension passing through the small passage aforesaid, substantially as set forth.

892,790. Compound Explosive Engine. Joseph A. Williams, Cleveland, O. Filed June 7, 1905. Serial No. 264,088.

1. In a compound explosive engine, a high-pressure cylinder, a valve connected with said high-pressure cylinder through which air may be admitted thereto during the exhaust from the said cylinder, means for preventing said valve from opening except during the exhaust from the high-pressure cylinder, and a second valve through which the air is drawn from the cylinder, said air scavenging and cooling the cylinder.

892,832. Radiator for Automobiles. August L. F. Holzerland, Buffalo, N. Y. Filed Sept. 10, 1906. Serial No. 333,978.

1. In a radiator for automobiles and the like, the combination with the inlet-chamber having an inlet-pipe, an outlet chamber having an outlet pipe, and the fluid passages connecting said chambers, of a fluid receiver within the inlet chamber and inclined in opposite directions from said inlet pipe.

892,853. Pneumatic Tire for Vehicle Wheels. John R. Kline, Los Angeles, Cal. Filed Feb. 20, 1907. Serial No. 358,518.

1. A pneumatic tire comprising an outer tube and inner tubular means having a plurality of sections formed as elastic cells placed end to end, each forming a pneumatic chamber, and means for inflating all of said cells simultaneously comprising a distributing tube having an inwardly opening check valve, a check valve opening inwardly in each cell from without the distributor tube and accessible from without the distributor tube to permit forcible opening thereof.

892,859. Speed Changing Gear. Charles H. Lee, New York, N. Y. Filed June 21, 1907. Serial No. 380,044.

1. A speed changing gear, comprising a drive shaft, a driven shaft, a plurality of gears adapted to be locked to one of said shafts, a plurality of gears mounted on the other of said shafts and intermeshing with the corresponding first mentioned gears, the gears on one of said shafts varying in size, whereby dicerent relative rates o frotation of the shafts may be secured, selective means for locking any one of the other set of gears to its shaft, and means for unlocking all of the dicerent sized set of gears from their shaft, save the high speed gear when the high speed gear of the other set of gears is locked to its shaft by the operation of said lelective means.

892,864. Cooler for Automobiles and the Like. Jonathan D. Maxwell, Tarrytown, N. Y., assignor to Maxwell Briscoe Motor Company, North Tarrytown, N. Y. Original application led Dec. 31, 1904, Serial No. 239,160. Divided and this application filed Sept. 28, 1905. Serial No. 280,451.

1. In an automobile, the combination with an engine having a cylinder with a jacket for cooling medium, of a radiator having unright channels forming a primary field and a secondary field for passage of the cooling medium, and a central chamber in communication with said channels and arranged substantially horizontally and medially across said radiator, to receive the heated fluid from said jacket, said fluid passing from said central chamber to said primary cooling field, whence it returns into said central chamber, and thence passes to said secondary cooling field, substantially as described.

892,866. Roller Bearing. Eimle Moonen, Paris, France. Filed May 8, 1907. Serial No. 372,603.

1. In a roller bearing, the combination of two bearing rings, each in one piece, one of which is provided with a circular rib and the other with a circular channel, an extensible segment lodged in said channel forming a rib on the ring, rollers having grooves engaging with the circular rib and with the segment, the channel ring being provided with holes for permitting access to the segment to compress the same, whereby the bearing can be assembled and dismounted by sliding one bearing ring along the rollers carried by the other bearing ring.

"The A B C of Electricity." Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

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THE UNTERBERG & HELMLE

Self-Starting Magneto

is described in this issue on page 25.

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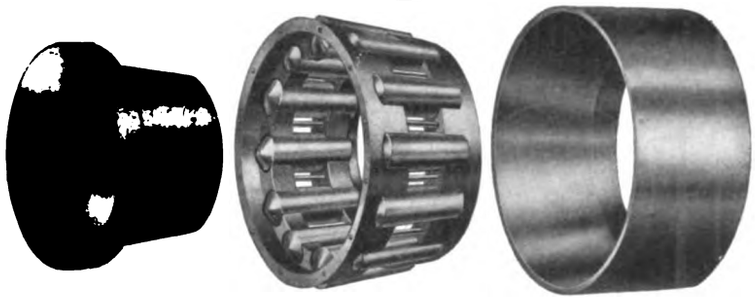
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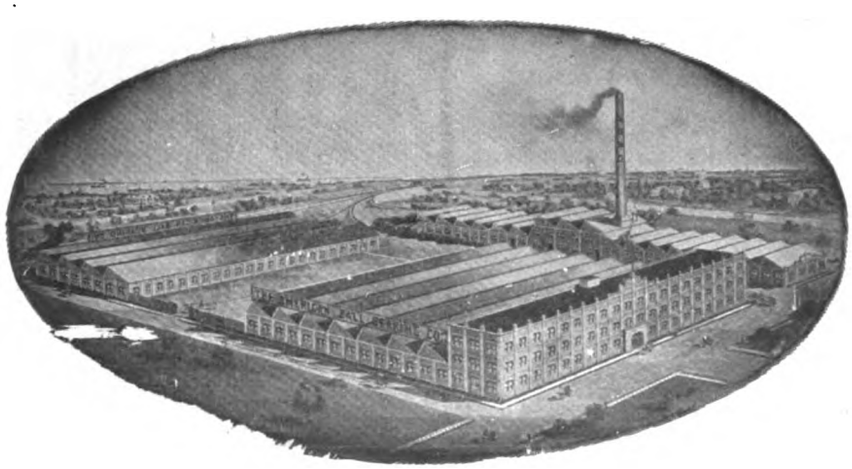
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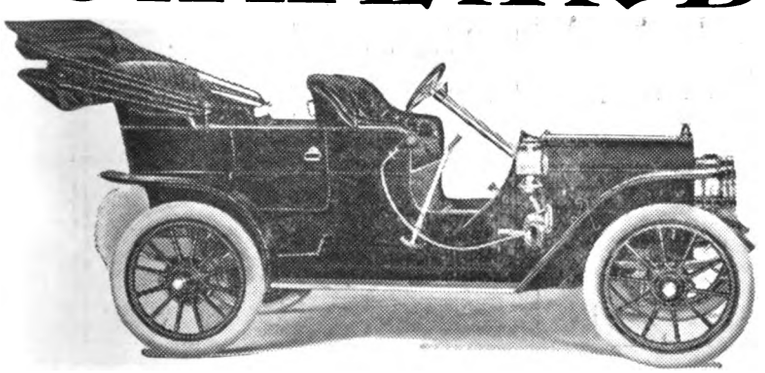
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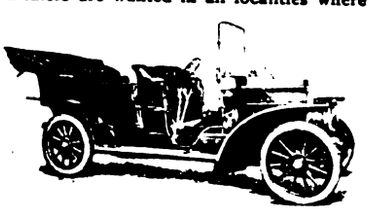
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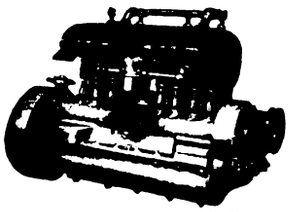
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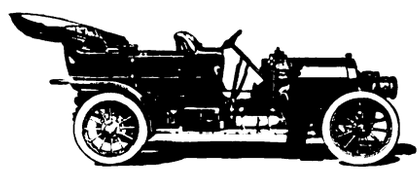
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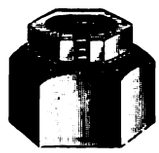
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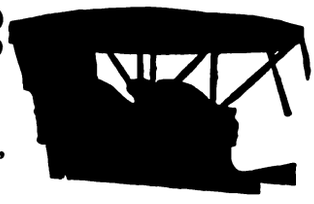
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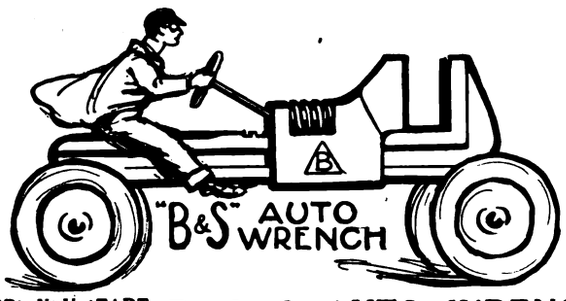
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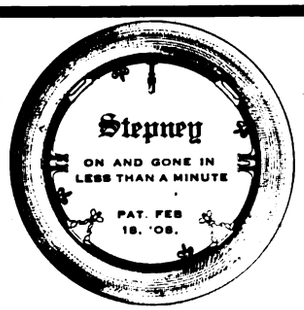


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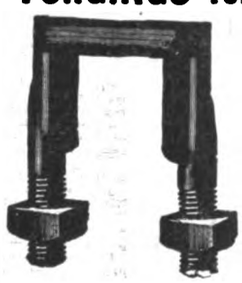
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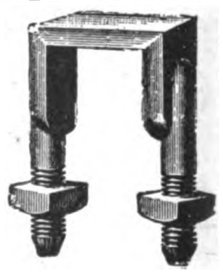
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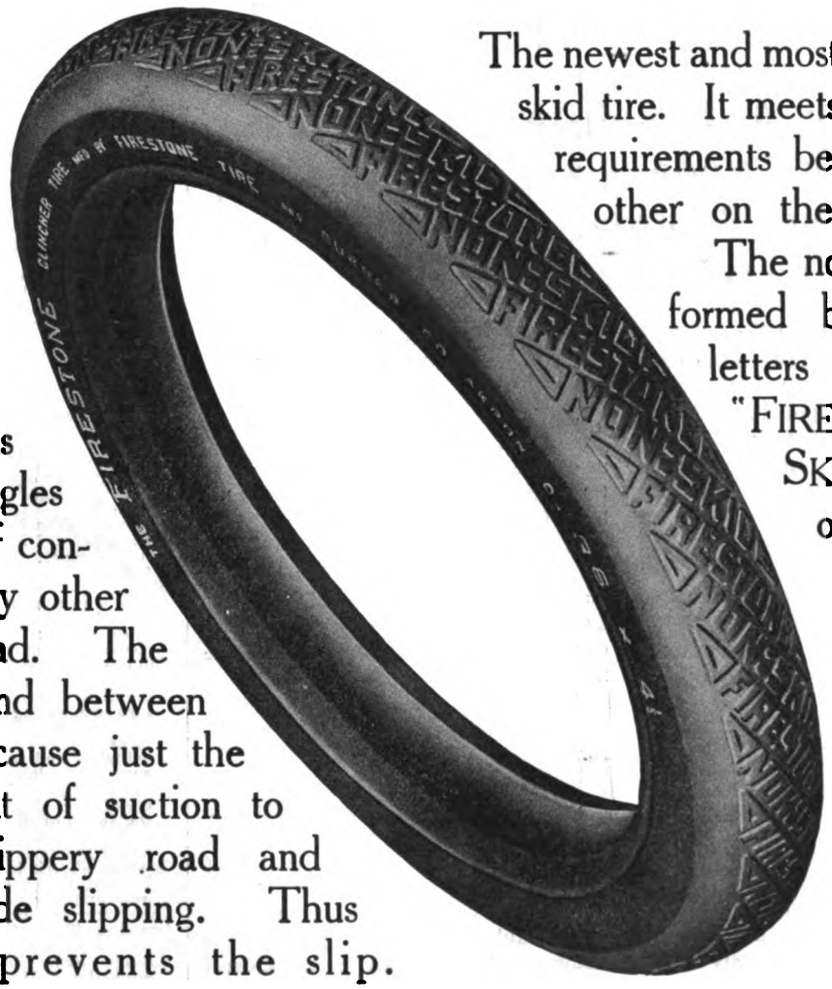
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The newest and most practical non-skid tire. It meets the necessary requirements better than any other on the market.

The non-skid tread is formed by the raised letters of the words "FIRESTONE NON-SKID" arranged obliquely across the body or tread surface of the tire

The letters of the words form more angles and points of contact than any other non-skid tread. The spaces in and between the letters cause just the right amount of suction to grip the slippery road and prevent side slipping. Thus the name prevents the slip.

Don't fail to see this remarkable tire at any of our Branches.

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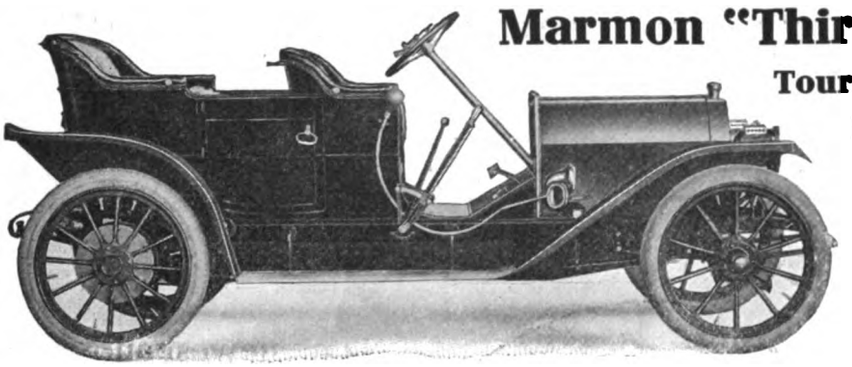
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The Easiest Riding Car In The World



Marmon "Thirty-two"

Touring Car or Roadster

$2400

Not An Automobile On Paper But A High-Grade Marmon, Carefully Built and Completely Equipped, At A Very Attractive Price.

In meeting the demand for a lighter car at a price within easy reach of a larger circle of buyers, this Company has not felt called upon to slight its design, cheapen its material nor permit any variation from the superb workmanship that has characterized the Marmon from the beginning.

An institution known for more than fifty years as a builder of machinery of the highest grade cannot afford to attach its name and guaranty to an automobile that will not measure up with the best at home or abroad.

Understand, therefore, that the 32 H. P. Marmon, selling at $2,400, is a high-grade car in every sense of the word.

The design is not merely one that looks good on paper, but it is a reality—practical, proven.

In careful workmanship, in choice of materials, in patient building, in all that goes to make a really excellent, dependable automobile, this $2,400 car will maintain the Marmon reputation.

Another thing—these cars are being built.

We are not merely collecting orders on hopes.

The cars are being built—built by us and built to endure under hard service.

And you may be sure that the makers of the Marmon are going to be in business and will be responsible to their customers, just as they have been for over fifty years.

We are certain from past successful experience that there is an ample market among thoughtful buyers for automobiles possessing the Marmon character, and backed by a reasonable firm.

And to that class of buyers, a Marmon at $2,400 is a bargain that speaks for itself.

Weighing not to exceed 2,000 lbs., fully equipped, and having 32 to 40 H. P., this car has a world of power and speed.

Light, graceful, unusually quiet and comfortable, this car presents a known value which invites the closest mechanical inspection.

Furnished with either five-passenger, four-passenger or roadster body. The rear seat of the four-passenger body can be removed leaving a platform for trunks and luggage, making it an ideal suburban car.

Specifications

Frame—Pressed steel.
Motor—Four cylinders, four cycle, water cooled. Bore 4½ inches; stroke 4¼ inches. Cylinders cast in pairs and set vertical.
Horsepower—Thirty-two to Forty.
Transmission—Selective type sliding gear arranged very compactly in case adjoining differential housing on rear axle—three speeds and reverse. Mounted in large H-B ball bearings.
Clutch—Expanding ring.
Drive—Bevel gear, shaft drive.
Rear Axle—Floating type. Bevel gear differential removable through axle housing directly to the rear. Large H.B ball bearings throughout.
Front Axle—Forged steel I section.
Brakes—Two brake shoes 14 inches diameter by two inches face in each rear wheel. Both internal expanding placed side by side, both faced with fabric. Operated by equalizers. Improved screw and segment adjustment conveniently placed.
Clearance—Ten inches.
Wheelbase—112 inches. Tread 56½ inches.
Wheels—34x3½ inches quick detachable tires.
Steering Gear—Irreversible, screw and nut. One adjusting nut. Eighteen inch steering wheel.
Control—Spark and throttle levers on steering wheel. Foot accelerator.
Oiling—Patented automatic force feed in motor, delivering oil through the hollow crank shaft directly into the main bearings, connecting rod bearings, and piston pin bearings. Oil thrown off by movement of crank lubricates the walls of the cylinders and other bearings. Oil pressure is regulated with an adjustable relief valve placed conveniently outside the crank case. Oil returns to reservoir below the sweep of the cranks and is used over and over. Oil consumption and wear reduced to the minimum.
Ignition—Bosch high tension magneto and battery, dual system, one set of plugs over intake valves.
Carburetor—Automatic, float feed.
Gasoline Tank—Capacity seventeen gallons; tank under front seat, gravity feed.
Springs—Rear, full elliptic 40x2; front, semi-elliptic 35x2.
Body—Sheet metal.
Finish—Black or maroon with running gear in same.
Tools—Very complete assortment of tools neatly arranged.
Weight—2,000 pounds.
Equipment—Two large gas lamps, gas generator or Prest-O-Lite tank; two dash and one oil tail light; horn with flexible tube and bulb; complete assortment of tools, two oilers, jack, tire repair kit and pump. Price $2,400 f. o. b. Indianapolis, Indiana.

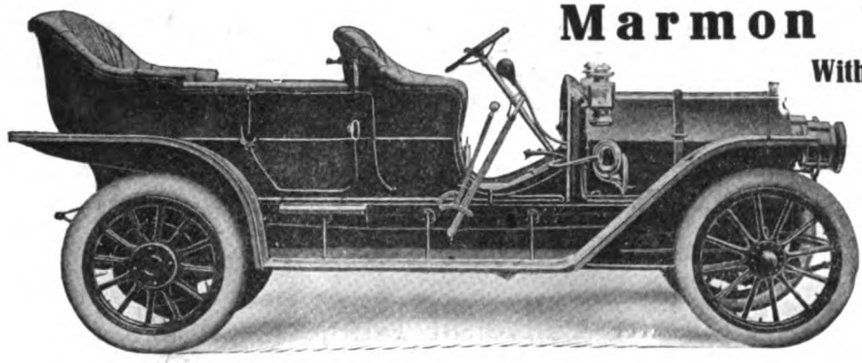
NORDYKE & MARMON CO., (Estab. 1851) Indianapolis, Ind.

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Announcement 1909

THE MARMON CAR

The Easiest Riding Car In The World



Marmon "Fifty"

With Seven-Passenger or Four-Passenger Body

$3750

A Car of Known Value, Acknowledging No Superior At Home or Abroad.

The Marmon Car has for many years been known to the well informed as one of the three or four really high-grade cars produced in America.

The Marmon "Fifty" represents the last word in automobile design and construction to date. Luxury in the extreme marks its easy riding qualities, luxury marks its appearance; and, above all, luxury lies in the knowledge that it will do its work steadily from the beginning to the end of the journey. Faster than you care to go, with ample reserve power for the steepest grades or the heaviest roads, it carries seven passengers in ease and comfort.

A reading of the specifications will at once inform the experienced motorist that he gets in this model all—and more—that he obtains in the most famous foreign cars sold at two or three times the price, and more than he gets in any other American car at any price.

And it is worth remembering that these cars are designed and built entirely by us in the Marmon way—marked by the best engineering skill and the most conscientious workmanship.

The Marmon "Fifty" may be had with either Seven Passenger Touring Car or Close-coupled Four passenger body.

The Marmon Forty-five Roadster

This roadster possesses all the high character of The Marmon "Fifty," with a little shorter wheel base, a slightly smaller engine, and a few other details necessary to make the roadster a distinctive type. It offers a combination of high speed with unusually easy riding qualities.

Price, fully equipped, $3500

Specifications

Frames—Pressed channel steel. One frame carries the body and a sub-frame carries the power plant.
Motor—Water cooled, four cylinders, vertical, four cycle, bore five and three-eighths inches, stroke five inches. Cylinders cast in pairs, intake valves on one side, exhaust valves on the other side.
Horsepower—Fifty-Sixty.
Transmission—Selective, three speeds and reverse. Mounted in large H-B ball bearings. No gears in action on direct drive. Automatic brake slows down clutch and gears.
Drive—Bevel gear, shaft drive.
Rear Axle—Floating type. Bevel gear differential removable directly through rear of axle housing. Large H-B ball bearings throughout.
Front Axle—Steel I section.
Brakes—Two, 17 inches diameter by 2-inch face in each rear wheel side by side. Internal expanding faced with fabric, simple, convenient adjustment. Operated by equalizers.
Clearance—10 inches.
Wheel Base—118 inches. Tread 56½ inches.
Wheels—36x4 inches; 36x5; quick detachable tires.
Steering Gear—Screw and nut. Irreversible. Mounted in conical roller bearings, enclosed in dust proof, oil-tight case.
Control—Spark and throttle levers on the steering wheel. Foot accelerator.
Oiling—Patented automatic force feed in motor, delivering oil through the hollow crank shaft directly into the main bearings, connecting-rod bearings and piston-pin bearings. Oil thrown off by movement of cranks lubricates the walls of the cylinders and other bearings. Oil pressure is regulated with an adjustable relief valve placed conveniently outside of the crank case. Oil returns to reservoir below sweep of cranks and is used over and over.
Ignition—Jump spark. Bosch high tension magneto and Battery. Two independent systems.
Carburetor—Automatic float feed.
Gasoline Tank—Capacity 20 gallons. Carries reserve supply with separate outlet for same. Pressure feed by mechanically operated air pump.
Springs—Full elliptic front and rear.
Body—Cast aluminum entirely.
Finish—Black or maroon with running gear the same.
Equipment—Two large gas lamps; gas generator or Prest-O-Lite tank; two dash and one oil tail light; horn with flexible tube and bulb; complete assortment of tools, two oilers, jack, tire repair kit and pump; two extra folding seats in tonneau. Price $3,750.00 f. o. b. Indianapolis, Indiana.

NORDYKE & MARMON CO., (Estab. 1851) Indianapolis, Ind.

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Standard Detachable Rim

Resolution passed by the NATIONAL ASSOCIATION OF AUTOMOBILE MANUFACTURERS at a meeting held in New York, August 5th, 1908.

"Whereas, the Standard Universal Rim, described in the report of "the Special Rim Committee, has been recommended by the committee "as mechanically satisfactory, be it

"RESOLVED that this association hereby adopts the rim so de- "scribed as standard, subject to the consummation by the Special Rim "Committee of satisfactory commercial arrangements with the patentee "and manufacturers."

At the above meeting all the detachable rims now on the market as well as proposed new rims were carefully considered.

THIS IS THE RIM



Standard Rim as Used for Clincher Tires



Standard Rim as Used for Dunlop Tires

Hartford Rubber Works Co.
Hartford, Conn.

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Stewart Speedometer

For 1909 we announce the most complete and beautiful line of SPEEDOMETERS ever shown—values not possible for any other speed indicator to even equal.

They combine features of workmanship, materials, construction, equipment and performance that have never been equaled by any speed indicator at any price.



Model 5, 90 mile, $50.
Model 4, 60 mile, $40.

Model 4. The same beautifully designed instrument as of last season, to which we have added an improved trip register of three dials, recording miles and tenths, which can be reset to a zero automatically. This instrument will also be equipped with a maximum speed hand. The construction of the mechanism for operating the trip and maximum hands is different to any heretofore used, and enables us to eliminate springs and other devices liable to derangement. Price, ... **$40.00**

Model 5. A duplicate of Model 4 in every feature, but made to indicate speed of 90 miles. Price last season $75, but owing to the enormous quantities being sold we will this season list the same at **$50.00**

Model 9. Comprises the No. 4 Speedometer and a 4-inch 8-day Chelsea Clock, the best automobile clock on the market; both mounted on a handsome brass base, and equipped with electric light **The most attractive combination possible.** Price, ... **$75.00**

Model 11. Something entirely new in speedometer construction. A 4-inch instrument similar in design to the Model 4, but will indicate speed from zero to 60 miles; is equipped with both season and trip register and automatic resetting device. The scale is three times the length of that used on any other speedometer, and which makes it the most easily read indicator on the market. The construction is of the costliest kind, every part is of the same high standard used in all our instruments and includes jewel bearings. **This instrument is destined to be the quickest selling, most attractive, most satisfying of all instruments, regardless of price.** Price, . . **$25.00**



Model 11, $25.



Model 12, $15.

Model 10. A combination of the above described Model 11 speedometer and 8-day Chelsea Clock, mounted on a brass base, equipped with electric light. Price, . . **$60.00**

Model 12. The handsomest little instrument ever produced; will indicate speed of 50 miles; has enclosed season odometer with capacity of 10,000 miles. Is in every feature the same as our $25 instrument of last season, with the exception that it is made with a 3-inch dial. **It is a thoroughly high grade instrument, better than any other speedometer, as a trial alongside any other make will prove.**

All Models to be equipped with the famous Stewart Flexible Shaft and Swivel Joint, and all are **covered by an ironclad 5-year guarantee.** Send for our 1909 catalog.

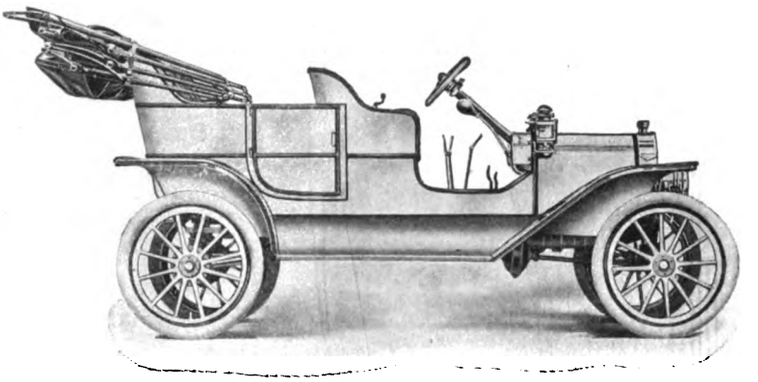
STEWART & CLARK MFG. CO. 509 Diversey Blvd. Chicago, U. S. A.

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FORD FOUR-CYLINDER TOURING CAR

$850.00

When you can couple the Ford guarantee—the guarantee of the best known automobile manufacturer in the world, whose imprint is already on more good cars than any other concern has made or promised—with the lowest price ever announced for a Touring Car, it's a mighty safe buy.



MODEL T TOURING CAR, $850.00
High Priced Quality in a Low Priced Car.

Here is the first and only chance ever offered to secure a touring car at a reasonable price, a price any man can afford to pay. It is a big, roomy, powerful car, of handsome appearance and finish, at a price lower than you are asked to pay for any four cylinder runabout, excepting the "FAMOUS FORD." This car sounds the death knell of high prices and big profits.

When this now famous FORD runabout was announced other manufacturers, despairing of being able to compete, knocked—"A good car could not be built at the price, much less sold." Every knock was a boost. With 20,000 cars Ford proved the car was right. Ford's financial standing to-day proves the price was right. And the knocking that will be done on this new car will be silenced in the same fashion.

Henry Ford promised three years ago to build a high grade touring car, and sell it at a heretofore unheard of price, and now just as surely as every claim made for the small car was made good, just so surely has Ford made good this promise.

The Model T is that car, the car that was promised, a four cylinder, 20 horse power touring car—a roomy, commodious, comfortable family car, that looks good, and is as good as it looks.

This is no imitation car. Henry Ford has never found the need to copy, and the fact that he has never designed a failure is your security that in the Model T touring car Ford continues to be two years ahead of any car manufactured to-day.

We have no high sounding name with which to charm sales. It's the same old name, "plain as any name could be"; it's just "FORD," but it has the advantage of being already on 20,000 cars (real automobiles) that have "delivered the goods."

You know that Henry Ford can build a better car for less money than any other manufacturer on the face of the earth. You know it because he has always done it, and that is your guarantee of his ability, and your security in dealing with him.

Our organization is made up of that same force of men that you have learned to know as being connected with the manufacture and sale of an honest product. It's the same old Company that has been doing business right along; the same old successful organization and plant.

Not having anything new but the car, and because it is unnecessary for us to spend money to solicit confidence in our company (that being already secured by past performances) we can devote all our time and money to taking care of the orders for the car that people have actually been waiting for—a family car at an honest price.

The Model T is a four cylinder, 20 horsepower car of graceful design, powerful in appearance and reality, and of sturdy construction. It is not a new car in the sense that it has been conceived, designed and built all in a few weeks. Mr. Ford started on the car three years ago. Two years were spent in designing, experimenting and research. A year ago the first cars were shown, and for twelve months have been in constant service.

These experimental cars have been run under every conceivable condition. All last winter they were tried on the snow and slush covered country roads—all summer they have worked on the hills, on the sand and mud roads in good and bad weather.

It is a new car, however, in the sense that it is not an old chassis with a new body or an old engine in a new chassis, but it is a new car built throughout to meet the requirements of a family car. The engine is new (20 horsepower), cylinders cast in one block with top removable so that the cylinders, pistons, valves, etc., are get-at-able. The chassis is new, a hundred inch wheel base and 30 inch wheels. The transmission is of new de-

FORD—THE CAR THAT LASTS LONGEST

Ford Motor Company

Member American Motor Car Mfrs.' Assn., New York.

259 PIQUETTE AVENUE, DETROIT, U. S. A.

RETAIL BRANCH STORES:

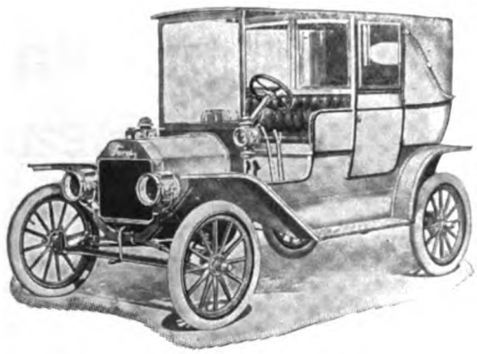
147-149-153-163 Columbus Ave. BOSTON
1721-23 Broadway NEW YORK
727 Main St. BUFFALO
Broad and Buttonwood Sts. PHILADELPHIA
1444 Michigan Ave. CHICAGO

CANADIAN TRADE supplied by Ford Motor

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20 HORSEPOWER FIVE PASSENGER FORD

f. o. b. Detroit



MODEL T TOWN CAR, $1,000.00
High Priced Quality in a Low Priced Car.

Any car now selling up to several hundred dollars more could, if built in the Ford factory from Ford designs, by Ford methods and in Ford quantities, be sold at the Ford price if the makers would be satisfied with the Ford profit per car.

sign (planetary, of course), and altogether silent; $150,000 worth of new machinery and tools were added before we could start to build.

Vanadium steel, the strongest, toughest and most endurable steel ever manufactured, is used throughout the entire car. The only reason every automobile manufacturer is not using Vanadium steel is either that they cannot afford to or do not know how. To use it in Fords required two years of experimenting, and an expenditure of $200,000, plus the increased price of steel.

We could have announced the car last year; we wanted to prove it in actual service; held it a year when we knew people were anxious to buy. Now we know the car is right. It's built for the sort of use the average buyer gives a car, and no car made, no matter what the price, can excel this Model T in practicability and service.

Announcing this car at this time we are not taking time by the forelock—we are not announcing with the intention of waiting for orders before commencing to build. October 1 will find us delivering cars, not promises. Not a line of advertising appeared, not an order accepted until we had the completed car and knew exactly when we could start to fill orders. Our dealers have guaranteed us an enormous demand, however, so that an immediate order is advisable. While we do not know how many of these cars we will build in the next twelve months, the price per car is based on building 25,000 cars. We will not build any less—we may build more. We have manufacturing facilities for 100 complete cars per day. A careful study of conditions and of reports from our selling force indicates that even this large capacity will be insufficient. So wire your order—now is the proper time to buy.

SPECIFICATIONS.

MOTOR—Four cylinder, four cycle, vertical, 20 horsepower; cylinders cast in single block, with water jackets and upper half of crank case integral. Water jacketed cylinder head removable, offering easy access to all interior parts of engine. Pressed steel lower half of crank case extends to form lower oil tight housing for flywheel, transmission, magneto and universal joint.
TRANSMISSION—New design Ford spur planetary; no internal gears. Silent at all speeds. The quietest, easiest transmission ever manufactured.
IGNITION—By Ford low tension magneto generator, an integral part of the engine direct driven by engine shaft; no gears, belts, brushes or contact points. Simplest and most positive system of ignition.
CONTROL AND DRIVE—All forward speeds by foot lever, reverse by hand lever, transmission brake by second pedal, emergency brake on rear hubs by second hand lever. Drive on left side, throttle and spark control under steering wheel.
WHEELS—Thirty inch artillery wood type, pneumatic tires, 3 inch front, 3½ inch rear; tread, 56 inches; wheel base, 100 inches; weight, 1,200 pounds.
GASOLINE CAPACITY—Ten gallons, enough for 225 miles.
EQUIPMENT—Three oil lamps and tube horn. With body ironed for top.
BODIES—Touring car as shown and now ready for delivery; also supplied in landaulet, taximeter cab, coupe and town car style. Runabout and roadster.
PRICE—On touring car, $850.00; landaulet or taximeter, $950.00; coupe, $950.00; town car, $1.000.00 F. O. B. Detroit.
DELIVERY—Beginning October 1 on touring cars; November 1 on other styles; runabout and roadster for spring delivery.

We want some more dealers—live, wide-awake hustlers. If you are that kind of a man, even tho not now a dealer in automobiles, there's a chance to make money with the Ford line right in your own home town. Write to-day for full particulars, for we are ready to make contracts for 1909.

AND COSTS LEAST WHILE IT LASTS

Ford Motor Company

Member American Motor Car Mfrs.' Assn., New York.

259 PIQUETTE AVENUE, DETROIT, U. S. A.

914 Euclid Ave., S. E. CLEVELAND | 268-270 Jefferson Ave. DETROIT | 318-320 E. Eleventh St. KANSAS CITY | 3669 Olive St. ST. LOUIS | 1556 Broadway DENVER | 19th Ave. and E. Mercer St. SEATTLE

Company of Canada, Limited, Walkerville, Ontario.

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50 H. P. **SIMPLEX** **$5,750**

Licensed under Selden Patent and guaranteed for one year.

WINS The 24-Hour Race at Brighton Beach

Setting 16 New World's Records

Beating the previous world's records 23 hours in the 24 and beating by the tremendous margin of 70 miles, the previous best 24 hour performance of any car in the world.

One and one-half hours before the end of the 24 hours, the Simplex, driven by Lescault and Robertson, had passed all previous records for the 24 hours. At the conclusion of the race, the winning Simplex was in perfect condition, not a bolt, nut or screw being out of place. The car was capable of immediately repeating its performance, and if pushed, in considerably faster time. Driven by Lescault, the Simplex made in the 5th hour the record run of 57 miles, beating its own previous world's record of 56 miles in one hour, made during the last 24 hour race.

Hour.		Previous Record.
1	Simplex 55	52
2	Simplex 107	101
4	Simplex 198	193
5	Simplex 255	245
6	Simplex 302	294
7	Simplex 350	332
8	Simplex 401	380
9	Simplex 454	423
10	Simplex 508	465
11	Simplex 559	515
12	Simplex 612	565
13	Simplex 658	616
14	Simplex 710	664
15	Simplex 761	705
16	Simplex 810	755
17	Simplex 856	803
18	Simplex 903	849
19	Simplex 949	883
20	Simplex 992	928
21	Simplex 1041	972
22	Simplex 1086	1019
23	Simplex 1131	1060
24	Simplex 1177	1107

Palmer & Singer Mfg. Co.

1620-22-24 Broadway, New York. **1321 Michigan Ave., Chicago.**

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FORM NO. 518. 3-03 50M.

CABLE ADDRESS:
DACHOUSE, NEW YORK

WYCKOFF, CHURCH & PARTRIDGE

GENERAL EASTERN AGENTS FOR

The Stearns
Best of the World

OPERATING THE W. C. P. SUPPLY HOUSE

COMPLETE GARAGE AND REPAIR DEPTS.

1739 BROADWAY — BROADWAY AT 56TH STREET — 1743 BROADWAY

TELEPHONE: 6400 COLUMBUS

NEW YORK, September 26, 1908

National Sales Corporation
296 Broadway
New York City

RECEIVED
SEP 28 1908
NATIONAL SALES CORP'N.



ANSWERED

Gentlemen:

After a thorough test on the road of the Peugeot chains which you sent to me to use in the Twenty-four Hour Race, I take pleasure in informing you that these chains went through the race without adjustment and without attention of any sort. They were in every way perfectly satisfactory, and I highly recommend them to anyone wishing to procure a satisfactory chain.

Thanking you for your kindness in affording us an opportunity to use them, beg to remain

Yours very truly,

WYCKOFF, CHURCH & PARTRIDGE

By Guy W. Vaughan

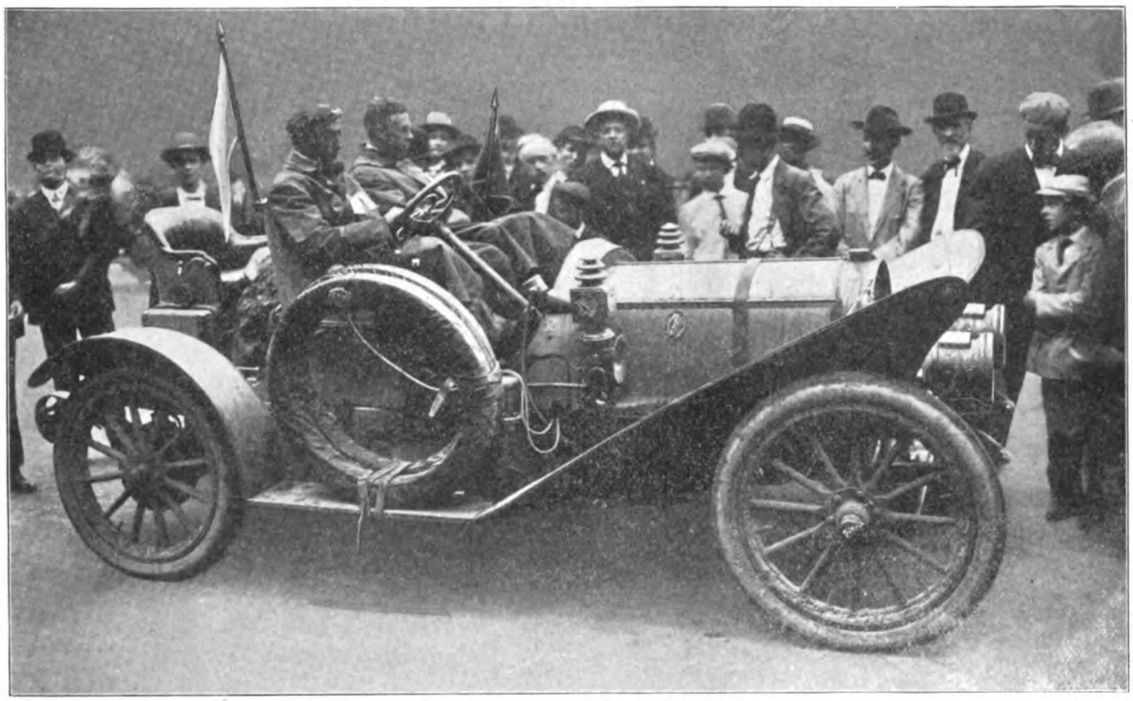
Machine Shop Superintendent

GWV/B

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ANOTHER RAMBLER RECORD

One Thousand Miles in Eight Days and Every Vital Part Perfect



RAMBLER ROADSTER AT CONCLUSION OF EIGHT DAY RUN.

EVERY vital part of the Rambler 1908 Roadster Model 34-A was in perfect condition at the finish of the great 1,000 mile, eight day reliability contest of the Kansas City Automobile Club. Second place was awarded to the Rambler—because of a six points penalty.

Only six points penalty—a remarkable record.

Seven days run of the eight showed a perfect score.

A hub cap was torn off when the roadster took the ditch in an exciting dash through a mire, filled with rocks, mud and disabled automobiles. That cost us three points, but the Rambler got through.

Then a spring shackle turned when the car took the ditch to pass another disabled car. That cost us three points more.

Forty-one cars were entered. Only twenty finished. Not one, selling within $700 of the cost of the Rambler, finished without a breakdown and all the high priced cars, driven by expert drivers, were there. The Rambler engine was running better at the finish than at the start.

There are certain mechanical features of the Rambler which made this great performance possible. If you care to know what these are, drop us a postal and we will be glad to send full details at once.

THE CAR OF STEADY SERVICE

Thomas B. Jeffery & Company, Main Office and Factory: **Kenosha, Wis.**

Branches and Distributing Agencies: Chicago, Milwaukee, Boston, Philadelphia, San Francisco.

Representatives in all leading cities.

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, October 8, 1908. No. 2

ROYAL HAS A REORGANIZATION

Creditors' Committee Assists Company to Start Again with Ample Capital—Producing New Models.

Endeavors to save the Royal Motor Car Co., of Cleveland, O., from dissolution, following the company's going into the hands of a receiver last fall, have been successful to the extent that a complete reorganization is announced as being effected. F. A. Scott, acting for the Superior Savings & Trust Co., of Cleveland, the corporation appointed as receiver, has obtained from the creditors' committee an arrangement whereby the reorganized company will resume activity with ample and unencumbered resources and plenty of working capital.

By considerable effort the assets of the company have been preserved with comparatively little loss, and at the same time the agency organization and good will have been carefully held together. Business can thus be resumed under the advantages of the company's old footing in the industry.

Under a permission order from Judge Taylor, of the United States court, the receiver has been able to go ahead and produce sample cars of the model it is proposed to offer for 1909. The agents throughout the country who have been handling the Royal car, have been advised of the success of the reorganization and that demonstrating cars will soon be shipped.

Seeks to Sell Logan Property.

A petition for authority to sell the property of the bankrupt Logan Construction Co., of Chillicothe, O., has been filed by the trustee of the estate with Elijah Cutright, Jr., the referee in bankruptcy. The hearing on the petition takes place October 10 at the referee's office in the Ross County Bank building, at Chillicothe. An appraisal of all the property except the book accounts shows machinery, $3,186.00; office fixtures, $416.25; stock, $15,895.55, and real estate, $18,736.00, making a total of $38,-233.80, with judgment liens on the real estate amounting to $760.00.

Haas to Develop Standard's Truck.

Although it has not been generally known in the trade, the Standard Roller Bearing Co., Philadelphia, Pa., for some time has been experimenting with a combination gasolene-electric truck. The services of H. J. Haas, formerly superintendent of the E. R. Thomas Motor Co., of Buffalo, N. Y., have now been secured to carry out its development. The design is based on a system, the basic patents for which are owned by the Standard company, and the formation of an independent company, to be known as the Standard Gasolene and Electric Truck Co., to handle this branch of the business, is contemplated.

Friswell Made Factory Manager.

Arthur E. Friswell has been made factory manager of the Hartford Rubber Works Co., at Hartford, Conn., to fill the vacancy caused by the death on September 22, of Valentine B. Lang, who in addition to his duties as vice-president of the company, had charge of the factory. Past experience in a similar capacity with the Mechanical Fabric Co., of Providence, R. I., before going to Hartford, well qualifies Friswell for his new duties.

Mooers with Cleveland Auto-Cab.

Louis P. Mooers, engineer and designer, instead of joining the staff of the Aerocar Motor Co., of Detroit, Mich., as reported recently, has gone with the Cleveland Auto-Cab Co., which has its offices in Cleveland and its plant in Geneva, Ohio. Mooers will be in charge of a large part of the work at the latter place.

Bailey Resigns from St. Louis Car.

Theodore P. Bailey has resigned as general manager of the automobile department of the St. Louis Car Co., of St. Louis, Mo., makers of the American Mors. His successor to the place has not as yet been appointed.

SHOW SPACE IN HEAVY DEMAND

Allotments for Forthcoming Exhibitions are Being Made—Car Makers Crowd Chicago's Facilities.

Show matters brought many prominent tradesmen to New York City this week, to attend the sessions of the National Association of Automobile Manufacturers, the American Motor Car Manufacturers Association, or the Association of Licensed Automobile Manufacturers, all of which have show and business meetings scheduled. A general meeting of the N. A. A. M. was held on Wednesday morning at which all of the directors were present. This was followed by a meeting of the show committee in the afternoon, at which allotments of Chicago show space to the automobile manufacturers were made.

For the Chicago show there were 95 manufacturers of cars who desired exhibition space, and of these, 84 were given an allotment, the other 11 having been late in making application. The latter will be taken care of in the Coliseum basement, however. The space alloted takes in the main floors of the Coliseum, the Annex, and the Armory, as well as a large part of the Coliseum basement. The Motor and Accessory Manufacturers, Inc., undertakes the allotment of the gallery space to its members.

Mora Heads a New Company.

Real automobiles, with gasolene motor and all the mechanism, but made in juvenile sizes at a low price, will constitute the product of a newly organized concern of which S. H. Mora, of the Mora Motor Car Co., is president. The Child's Automobile Co. is the name adopted, and the company will use the factory building on Siegrist street, Newark, N. Y., formerly occupied by the Mora factory. The cars will be small, single cylinder affairs of a so-called "pony" type, to sell for from $150 to $250, and are intended for children.

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In the Retail World.

C. M. Atherton has opened an automobile establishment in Sheldon, Ia. Garaging and repair facilities are a feature.

Peter Wood has opened a garage at 23 Eighth avenue, Newark, N. J. He will conduct a general storage and renting business.

Yount & Blincoe, of Sedalia, Mo., have closed their automobile garage. The business affairs of the concern are being wound up.

The Packard Motor Car Co. has opened a branch office at 14 Branford place, Newark, N. J. Gilbert V. Burdett is the local manager.

William Stout & Co. is the style of a new firm which has "opened up" at Irvington, N. J. The firm will engage in a garage and repair business.

To handle the Ford in Utica, N. Y., a new concern, called the Ford Sales Co., has been formed. Frank E. Henabray and A. P. Howarth are the owners.

The Independent Automobile Co. has been formed in Indianapolis, Ind., to handle the Oakland car. The company's salesroom will be located at 216 East Vermont street.

The Moon Motor Sales Co., of which C. A. Duerr is the head, has leased new quarters at 1781 Broadway, New York City. The concern will handle the Moon car, made in St. Louis, Mo.

"Distress warrants" have been issued against the Augusta Motor Co., of Augusta, Ga., by R. E. Heath, who claims that the concern is back in its rent. Seven automobiles were attached.

The Penn Motor Car Co., of Philadelphia, Pa., expects to move into a large three-story brick building at the northwest corner of Broad and Cherry streets early in October. The rear part of the building will be used for garage and repair purposes, while the front will be fitted as show rooms, business offices and reception rooms, with special rooms for the ladies.

Duerr in Receiver's Hands.

Bankruptcy proceedings against Chas. A. Duerr & Co., 2182 Broadway, New York City, have been instituted by Julius O. Foote, attorney for three of the creditors. The petition alleges that the corporation is insolvent, and that preferential payments have been made. Judge Holt appointed Lindsay Russell as receiver. The nominal assets have been given as $60,000, though their actual value has been estimated at $40,000, while the liabilities, according to Foote, are about $100,000. The concern is indebted to two of the petitioning creditors, the Firestone Tire & Rubber Co., and the Hartford Rubber Works Co., to the amount of $401 and $251, respectively.

Duerr is a pioneer New York agent and has the distinction of being one of the earliest defendants named in the prosecution of the Selden patent, incidental to his handling the Ford at that time. Latterly he has had the Royal agency. The corporation was organized in May, 1903, with a capital stock of $5,000, which was increased to $30,000 in December, 1906. Last January the company acquired the lease and assets of the Metropolitan Auto Co., and has since made garaging and storage a large feature of the business. About 100 cars are using the garage, under contracts of from three months to three years, each paying $30 per month, making a monthly income of about $3,000. It is thought that the receiver will endeavor to continue the company's garage service in order to save many of the dependent assets.

Bendix Seeks Loan in Logansport.

In its efforts to get started in Logansport, Ind., the Bendix Automobile Co. has asked for a loan of $75,000 cash, tendering as security a large block of preferred stock. Members of the Land & Improvement Co., a newly organized Logansport association which is seeking to encourage manufacturing concerns to locate in the city, have pledged $20,000 of the amount and hope to arouse enough "public spirit" to get the rest.

To Make Electric Vehicles in Toledo.

Basing expectations of success on the merits of a new storage battery invented by A. F. Clark, a new concern, to be known as the Toledo Electric Vehicle Co., has been started in Toledo, O. It has been incorporated at $50,000, with Willard E. Allen, A. F. Clark, Frederick B. Willard, E. J. Hall and J. W. Schaufelberger as the incorporators. A factory building for electric runabouts has been secured at Collingwood and Delaware avenues.

Kissel Kar Agency for New York.

New York City representation for the Kissel Kar has been arranged, the Apthorp Motor Car Co., 214 West Eighteenth street, having closed a contract with the Kissel Motor Car Co., of Hartford, Wis., to handle the latter company's three models in the metropolis and its vicinity. F. S. Dickinson is president of the Apthorp company, which was but recently organized.

Strawbridge Succeeds Woods.

James B. Strawbridge has been elected general manager and treasurer of the Cleveland Motor Car Co., of New York City. He succeeds Walter A. Woods, who resigned last July to organize an independent enterprise.

Paying the Third Pope Dividend.

Checks for the payment of the third dividend of 25 per cent. to the creditors of the Pope Mfg. Co. have been sent out. It is planned to pay the creditors in full and have the reorganization in effect before November 15.

The Week's Incorporations.

Lansing, Mich.—Auto Body Co., The increases its capital from $25,000 to $150,000.

Clute Brothers' automobile business in Cohoes, N. Y., has been sold to the Campbell & Clute Machine Co., It will continue without material change of policy.

Cincinnati, O.—Eagle Automobile Co., The, under Ohio laws, with $10,000 capital. Corporators—F. L. Rhau, Henry Kressell, John Murphy, Fred L. Hoffman and C. O'Hern.

Branford, Conn.—Shore Line Garage Co., The, under Connecticut laws, with $10,000 capital. Corporators—John T. Manson, Minotte S. Chatfield and Winthrop G. Bushnell, all of New Haven, Conn.

Chicago, Ill.—Multi-Unit Gas Engine Co., under Illinois laws, with $25,000 capital; to manufacture and deal in motors and motor vehicles. Corporators—James J. Maloney, A. C. Garey, William L. Simonton.

Oklahoma to Rebuild Old Cars.

Even if Oklahoma City, Okla., cannot have a full fledged automobile manufacturing plant, it will have the next best thing, in an establishment which will devote itself to buying old cars and rebuilding them for the market. The Auto Sales Co. is arranging for large purchases of decrepit machines, which after being rebuilt, refurbished and decked in dashing colors, will be sent forth to compete with newer but no more sprightly models.

Roberts to Move to Sandusky.

Removal from Clyde to Sandusky, O., has been decided upon by the board of directors of the Roberts Motor Co., which at present has its plant at the former place. A large number of the employes, with their families, will follow the factory to its new location.

Lillibridge Files Bankruptcy Proceedings.

Ray D. Lillibridge, formerly president of the Rees Company, of New York City, an automobile storage concern, has filed a petition in bankruptcy, with liabilities of $12,431. The petitioner has been identified with the trade in agency and advertising relations for some time.

Spiers Resigns from the Standard.

John C. Spiers, factory manager of the Standard Roller Bearing Co., of Philadelphia, Pa., has resigned. E. M. Eveland has temporarily assumed the management of the factory, in addition to his other duties.

Morrison Seeks Relief in Bankruptcy.

Albert E. Morrison, of Boston, Mass., at one time with the Morrison Automobile Co. and at present manager of a Boston taximeter cab company, has filed a voluntary petition in bankruptcy. He has liabilities of $3,070, and no assets.

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EXPORTS GAIN IN FEW MARKETS

August Shows Increases in Only Four Divisions—Record for the Eight Months Given in Detail.

Comparison of the export figures for the month of August, while showing a considerable gain over the corresponding month last year in the markets of Germany, British North America, Other Asia and Oceania, and Other Countries, nevertheless indicates a general falling off in the other outlets. The total for the month is $390,870 as against $506,522, while the number of machines exported was 156, against 256 for August of last year. The traffic in parts also had a reduction, from $69,054 to $44,074. Next to British North America, the biggest purchaser for the month was the United Kingdom, with $125,904, somewhat less, however, than the $129,300 of the previous August. France bought $15,565, as compared with $45,385; Mexico, $15,740, as against $34,488, and West Indies and Bermuda $6,055, as against $56,372. The gain in British North America was from $135,905 to $173,768; in Germany from $8,093 to $14,508; in Other Asia and Oceania from $3,656 to $10,459, and in Other Countries from $1,950 to $2,736.

For the eight months concluding with August, the United Kingdom is the leading customer, with a total of $1,491,465 as against $1,464,470 for the same period last year. Gains are also shown in Other Asia and Oceania, and in Other Countries, the former having a total of $98,732 as against $49,484 last year, and the latter $24,327 as against $14,981. The total for the period, however, manifests a decline, the combined purchases amounting to $4,004,811 as against $4,752,012 for the eight months of 1907. The August increase in sales to British North America was not sufficient to offset the declines in the previous months, so that the total for the period was $866,604 as against $1,036,291 last year.

The summary in detail is as follows:

	August		Eight Months Ending August		
	1907	1908	1906	1907	1908
Automobiles, and parts of	.....	.....	*$2,356,110	.....	.....
Automobiles	$437,468	$346,796	‡$906,892	$4,263,437	$3,569,962
Parts of	69,054	44,074	‡73,418	488,575	434,849
Exported to—					
United Kingdom	129,300	125,904	952,543	1,464,470	1,491,465
France	45,385	15,565	271,286	528,253	526,323
Germany	8,093	14,508	107,675	152,936	138,039
Italy	436	93	234,997	241,536	219,229
Other Europe	18,011	4,796	171,255	251,245	169,350
British North America	135,905	173,768	656,343	1,036,291	866,604
Mexico	34,488	15,740	484,865	487,099	202,774
West Indies and Bermuda	56,372	6,055	201,441	209,722	111,578
South America	25,050	6,329	84,409	153,540	86,179
British East Indies	7,239	2,147	23,545	26,963	19,707
British Australasia	40,637	12,770	87,957	135,492	50,504
Other Asia and Oceania	3,656	10,459	44,535	49,484	98,732
Other Countries	1,950	2,736	15,569	14,981	24,327
Total	$506,522	$390,870	$3,336,420	$4,752,012	$4,004,811

* Figures are for six months, January to June, 1906. † Number not started prior to July 1, 1906. ‡ Figures are for July and August, 1906.

Northern Merger is Completed.

Absorption of the Northern Motor Co., including the factories at Detroit and Port Huron, Mich., by the Everitt-Metzger-Flanders Co., of Detroit, has finally been accomplished, the capital stock of the latter concern having been raised from its temporary $500,000 mark to $1,000.000 to consummate the deal. The Detroit plant will be used for making replacement parts not only for all future E-M-F cars but for all past models of Waynes and Northerns, while the Port Huron plant will supply axles for the new product. In connection with the sale of a large part of the E-M-F output by the Studebaker Automobile Co., E. Le Roy Pelletier is to handle the advertising of all the Studebaker models.

Selden Celebrates a Christening.

The Selden Motor Vehicle Co., of Rochester, N. Y., gave a luncheon to its representatives and sales agents on the 30th ult., at which Louis Caswell, the new sales manager, was the guest of honor. George B. Selden, president of the company, related some of the history in connection with his own part in the industry, in addition to which there were a number of other speeches and a christening of the 1909 model.

Engineers Have Employment Bureau.

Manufacturers seeking additions to their technical staffs are now given the opportunity of consulting an information bureau which has been established by the Society of Automobile Engineers and in which will be kept the names and qualifications of members seeking new positions. For the present the bureau will have its headquarters with the secretary of the society, at 231 West 39th street, New York City.

Regal and Oakland are Members.

The Regal Motor Car Co., of Detroit, Mich., and the Oakland Motor Car Co., of Pontiac, Mich., have been admitted to membership in the American Motor Car Manufacturers' Association. The latter company will show at the Grand Central Palace.

YEAR'S LOSS BY GARAGE FIRES

Insurance Company's Figures Approximate Total of $2,000,000—Careless Handling of Gasolene Largely Responsible.

Preying upon both the trade and the private owner, but particularly upon that portion of the trade engaged in the garaging of cars, fire has during the past year caused recorded losses approximating $2,000,000, while the losses that have not been made a matter of public record doubtless aggregate hundreds of thousands of dollars more. As showing how great is the fire hazard on garages and automobiles from an insurance standpoint, one of the leading New York fire insurance companies has prepared a list of the more important losses in such risks in the United States from September 18, 1907, to September 22, 1908. This forms a record of an even hundred fires, with the damage in each instance ranging from $500 to $500,000. The total shown for the period is $1,893,700, comprising damages to buildings and equipment, and to cars. Some 40 per cent. of the total number of fires occurred in public garages.

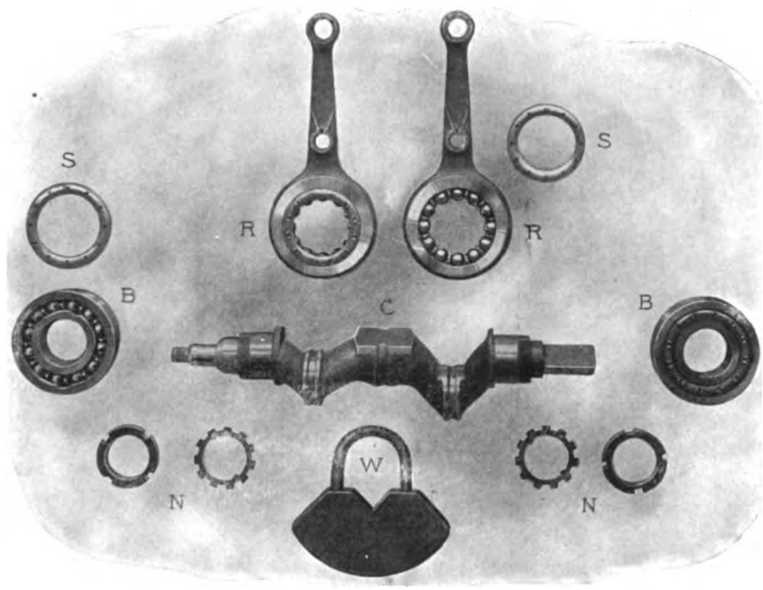
Gasolene handled in a more or less careless fashion is the preponderating basis of damage, a very large proportion of the causes assigned having to do with the accidental ignition of the fuel or its vapor while replenishing cars or as a result of leaky tanks. Some of the fires have had an incendiary or a spontaneous combustion origin and in at least one case lightning was responsible for a conflagration. Another big fire was due to an acetylene gas explosion; but such instances are only a sprinkling among the more regular and monotonous repetitions of the unexpected flaming up of gasolene.

In the details of the manner in which the fuel or vapor became ignited it is shown that a great part of the total number of fires were started while fuel tanks were being filled—a proof of the dangers that exist in connection with this operation if the greatest care be not exercised in extinguishing lamps, stopping the engine, prohibiting nearby smoking and the taking of other precautions. Even the manipulation of electric light wall switches giving a long spark or flash when the circuit is broken, presents a danger, while the testing of dry cells near open gasolene was in one instance the cause of the place going up in flames.

That the insurance rates asked on many risks are excessive may seem very apparent to the would-be insurer, but in the face of the facts presented by the record for the year, the insuring companies have reason to regard the fire hazard in the automobile business as being far above the normal. In many localities the rates are being raised because of the heavy recent losses on garage risks.

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The Simplicity of
THE WHITE STEAM CAR



In the principles of construction—as in the method of operation—the White Steam Car is simpler than any other type of automobile. Consider, for example, the design of the White crank-shaft and compare it with the corresponding member in other cars. In the above illustration is shown the crank-shaft of the 1909 White engine and all the parts attached thereto. The crank-shaft, C, is a short one-piece forging of tool steel with but two main bearings, B,B. These bearings may be removed by taking off the lock nuts and lock washers, N,N. The two connecting rods R,R, are one-piece forgings fitted with ball bearings, as shown. With the addition of the counter weight, W, the crank-shaft is complete.

In all accepted types of gasoline engines there are from three to seven main bearings. As is well known, when any shaft has more than two bearings, there is the ever-present danger that they will work out of alignment. Moreover, the crankshaft of the gasoline engine has either four or six connecting rod bearings, which are invariably only plain bearings instead of ball bearings. It will thus be seen that there are only from one-half to one-third of the number of parts used in connection with the White crank-shaft as are used inconnection with the crank-shaft of a gasoline engine.

Next week we shall compare the two valves of the White engine with the eight or twelve valves of the gasoline engine.

Write for circular containing details of the new White cars.

THE WHITE COMPANY

CLEVELAND, OHIO

NEW YORK CITY, Broadway at 62d St.
BOSTON, 320 Newbury St.
PHILADELPHIA, 629-33 N. Broad St.
PITTSBURG, 138-48 Beatty St.
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CHICAGO, 240 Michigan Ave.
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NEW YORK. OCTOBER 8, 1908.

Winning the Carriage Trade.

As has been pointed out frequently during the past two or three years, the carriage making industry and more particularly the carriage dealer is constantly growing into closer accord with the automobile industry, its spirit and its aims, and is coming to share more seriously its burdens. Were visible confirmation of this fact required, no more convincing evidence could be brought forward than is obtainable at the fifteenth annual exposition of the National Carriage Dealers' Protective Association which is being held at the Grand Central Palace, New York City, this week. Not alone is it true that along side the forty-odd exhibits of finished carriages are the exhibits of nearly half as many manufacturers either of finished automobiles or automobile components designed especially for consumption by the carriage trade. The attitude of respect for and interest in the automobile manifest by the attending dealers in this purely trade gathering is in itself impressive and expressive of a movement which is destined to be of more than passing importance to the newer industry.

Another side of the matter is revealed in the attitude of the automobile makers who have placed their representatives on the floor. Their respect for the carriage dealer and in many instances the earnestness with which they are seeking his patronage is, perhaps, significant of a new order of things in the methods of marketing the motor vehicle. The average repository of the carriage dealer, in town or country is greatly at variance with the average automobile salesroom. The spirit which pervades it and the attitude of its tenants with respect to business is equally foreign to the air which pervades the typical automobile establishment. Regardless of the apparent disparagement between the two lines, the fact remains that the carriage dealer is a merchant of recognized standing in the community and that he handles a staple line and deals with a class of buyers with whom the automobile maker is in many instances particularly anxious to get in touch.

Considered in the broadest possible spirit, it is difficult to under-estimate the advantages to be derived from marketing the automobile in a way which is calculated to reach the great masses of buyers on the plane of their understanding. The dashing, extravagant phase of automobiling with its appeal to certain classes of customers must be considered as distinctly apart from the soberer field wherein are considered only the matters of dollars invested and dollars earned. The commercial vehicle movement has its strongest feature just at present in the service which the passenger automobile can be made to perform where transportation is a daily necessity. This is a harder market to exploit than that of the purely recreative vehicle and therefore one which must be handled with combined economy and aggressiveness. For this purpose the carriage dealer is attaining a recognized standing among the makers of a certain farseeing class, and there can be no question that his experience and ambition are destined to be of great value to them.

Steering Gear Considerations.

Instructions as to the handling of cars, particularly on the garage floor are never considered complete without the precept that the steering gear should not be actuated from the hand wheel except when the machine is moving under its own power. Otherwise, it is stated, and with perfect truth, the heavy load thrown upon the parts when the front wheels are swung is apt to injure them to a serious extent. Taken in connection with a broad criticism of steering gear design in general which is printed in another column, opportunity is opened for reflection as to whether the continued iteration of this caution is not an acknowledgement of unnecessary weakness on the part of the average mechanism. Not that its inability to withstand unnecessary stresses applied in the reverse direction is absolute proof of inefficiency, but that it may indicate a condition which is, to say the least, undesirable in what is beyond question the most important mechanical system in the vehicle.

On a purely theoretical basis, the rolling action of the front wheels when swung; the fact that the only strains upon the connecting linkage are those injected by roadside obstructions; and the consideration that the inevitable "spring" of the rods, together with the give of the elastic connections—should be sufficient argument in favor of a mechanism no heavier than that commonly employed. At the same time it must be conceded that these are not the only strains to which the steering gear is subject; that the motion of the chassis over the axle, the vibration of the entire fabric and the errors due to possible disalignment of parts, subject the gear to loads which are beyond calculation, and that even the stresses commonly reckoned with, may at times increase to utterly disproportionate amounts. Hence it is open to question whether the average steering gear really is heavy enough for the work which must be thrown upon it in actual service under extreme conditions.

The old-time fallacy of ascribing every serious accident suffered when running at high speed to some defection of the steering mechanism is pretty well exploded. At the same time there can be no question that the number of accidents occurring from year to year, which are actually blameable to this source is far too great to conduce to the peace of mind of the nervous passenger in the swift-moving car.

After a period of comparative security lasting over several years, makers at length arrived at the conclusion that the average dimensions of the brakes were too small for the duty they must endure. Consequently a general increase in brake sizes has occurred which is equally to the credit of the

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builders and the safety of the owner. It may be that the near future will witness an equally general strengthening out of the steering system. Certainly such a change would add to the mental security of the driver, if not the physical, while in the matter of expense and weight added to the car, it would involve little or no serious complications.

Minimizing the Fire Risk.

Nearly two million dollars' worth of damage to the industry brought about in the brief space of one year by fire losses, and in many individual instances caused directly or indirectly by the presence of gasolene vapor in and about cars or garages, is a record too serious to be ignored. Despite an abundance of legal measures restricting the handling of the volatile fluid, despite the natural precautions of wise property owners, an average of more than eight fires of this sort are reported monthly. What minor, unreported losses occur, and how far they may go to swell the actual total is beyond conjecture. Certainly the figures write a sober lesson of the need of caution in the housing and maintenance of cars.

There are absolutely no phases of the automobile fire risk which have not been investigated or which may not be guarded against successfully, save those which arise from outside sources of conflagration. For the storage of gasolene, ample provision is made by the makers who specialize in the construction of tanks and reservoir systems of various approved patterns. For the handling of the fluid while replenishing the tanks of cars, equally safe means are provided. Modern garage buildings are designed with a view to the riddance of the perilous fumes, heating and lighting appliances are protected, and due provision is made for the absorption of waste oils and fuel drippings. Despite these precautions, however, the careless attendant and the ignorant floorman will persist in "taking chances," in washing down motors with gasolene, leaving small quantities standing about in open tins, and slopping quantities on the floor.

The situation in the small garage, particularly the private stable, of course is different. It seldom happens that conditions are right for the safe handling of the oils, and generally the fire risk is increased by the inflammable nature of the building. At the same time, the fact that more fires occur in public garages than in private ones is in itself proof that the construction of the building and its equipment is not the absolute guarantee of safety that might be imagined. As a matter of fact the real secret of safety rests with the administration of the public institution, even as it rests with the "fussiness" of the private owner.

There is a deplorable lack of discipline about most garages—chargeable, perhaps, to the influence of the bumptious private chauffeur—which is directly counter to the principles of safety in this as in other matters. Where it is possible to carry out a close system of routine work for each employe, and to exercise a watchful supervision over the doings of each, there it is safe to say the fire risk, which is perhaps the greatest menace the garage proprietor has to face, is at its minimum.

Designing for Practical Results.

Schemes almost beyond number arise and thrive in the brain of the designer—"pet ideas" for the improvement of this or that part, grand notions for the complete rehabilitation of an entire model, plans for enlarging the scope of the product through alterations in design. And because these little offshoots of his labors are not invariably accepted at face value by his employer it not infrequently happens that the otherwise capable and efficient engineer becomes a victim of the impression that he is not appreciated. As a matter of fact, however ambitious the manufacturer may be, and however much inclined to follow the lead of his engineering corps, he also is under the thraldom of a monster called the business department. However much he may desire to improve his product he may not do so wisely except in ways which promise a direct return. It is this principle which explains a number of little structural economies in many up-to-date cars, which the layman, and in many instances the designer himself cannot appreciate. Incidentally the engineer who is far seeing enough to invent and propose only such modifications as are patent necessities or obvious winning features, is usually the one who best proves his worth to his employer and the public.

It is pleasing to observe the gradual change of attitude manifest in foreign trade circles toward the American branch of the industry. Early acknowledgement on the part of American builders of the then supremacy of the foreign product, particularly as made on the Continent, led to the erroneous impression that the American manufacturer lacked the power of originating except along wildly radical lines. American cars were scorned as being either copies of foreign designs or else needlessly original.

It has come about in the process of time, however, that the same respect for unfettered invention which is manifest in the foreign makers' use of American machine tools also has been transferred to other products. Thus in parts, accessories and even in complete component groups, the foreign maker has come to draw upon the American market to a very considerable extent—more so, perhaps, than is generally known. A recent case in point is the adoption of a complete motor of such unusual design as to constitute one of the most striking innovations seen for several years among foreign makers of recognized standing. For this, due credit is given, though somewhat grudgingly, to its American origin, and the widespread publicity accorded its adoption constitutes a strong though possibly unwitting testimonial to growing respect for the over seas product.

COMING EVENTS

October 6-9, Chicago, Ill.—Chicago Motor Club's 1,000 miles reliability run.

October 10, Philadelphia, Pa.—Quaker City Motor Club's 200 miles road race, Fairmount Park.

October 10, Long Island—Motor Parkway sweepstakes for stock cars.

October 10, Providence, R. I.—Rhode Island Automobile Club's race meet, Narragansett Park.

October 14-16, Cleveland, O.—Cleveland Automobile Club's reliability run.

October 15, 16, 17—Michigan State Automobile Association's endurance run.

October 17, Hartford, Conn.—Automobile Club of Hartford's hill climb, Avon Mountain.

October 17, New York City, N. Y.—New York Automobile Trade Association's hill climb, Fort George hill.

October 17, Kansas City, Mo.—Automobile Club of Kansas City's race meet, Elm Ridge track.

October 24, Long Island—Vanderbilt Cup contest.

October 31, Philadelphia, Pa.—Automobile Club of America's 200 miles light car race.

November 23, Savannah, Ga.—Automobile Club of America's 200 miles light car race.

November 26, Savannah, Ga.—Automobile Club of America's (New York), 400 miles race.

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ROBERTSON REELS OFF 1,177 MILES

Simplex Driver Wins 24 Hours Race at Brighton Beach—Accidents Eliminate Half the Contestants.

After repeated hard luck in 24-hour contests, George Robertson, with Frank Lescault as alternate, driving a 50 horsepower Simplex car entered by Charles A. Singer, won a decisive victory in the twice-around-the-clock race at Brighton Beach on October 2 and 3. Robertson crossed the finish line with 1,117 miles to his credit—a remarkable performance. While the 24 hours world's record made by S. F. Edge, made on the specially banked cement track at Brooklands, England is still unapproached, nevertheless Robertson's mileage exceeds all other records made on ordinary dirt tracks, and beats Bernin's Morris Park Renault record of 1,079 miles by a big margin. Twelve contestants faced the starter and of this number only six were running at the finish.

The event was run under the zealous management of the Motor Racing Association and was sanctioned as an international race by the Automobile Club of America. Despite this most of the drivers were under the ban of disqualification at the hands of the American Automobile Association for participation in a former unsanctioned event. The rite of absolution granted by the latest ruling of that august body, however, is calculated to whitewash the sins of those who labored under a "misapprehension in the matter of sanctions."

Ralph Mulford and Harry Cobe in the same Lozier "six" that won the last 24 hours contest at this track, scored second place with 1,125 miles to their credit, and Montague Roberts, in a six-cylinder Thomas, with Martin and Winter for alternates, captured third, after covering 1,115 miles.

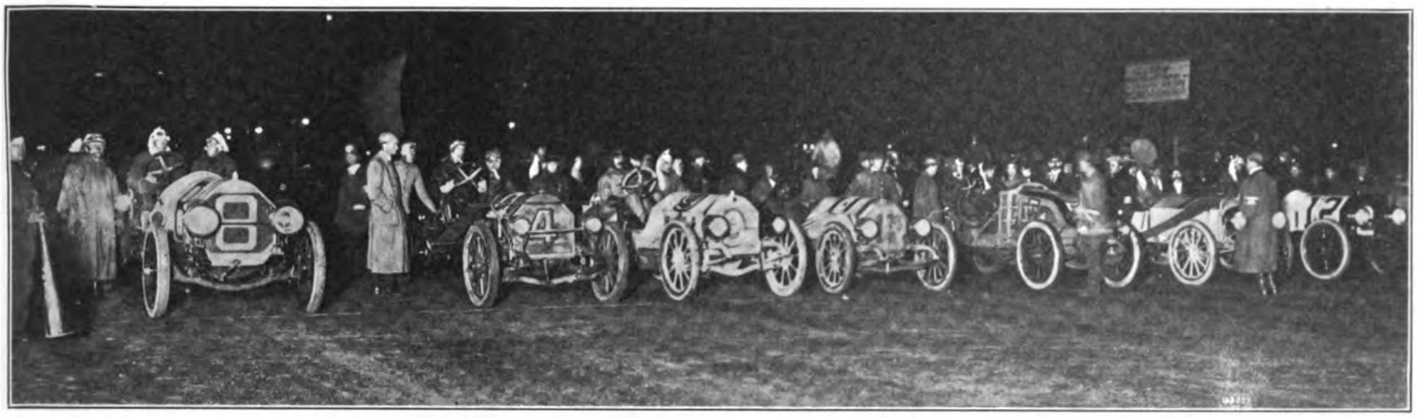
The Allen-Kingston, piloted by Lanwell, Rippengille and Pepperday, came in for fourth place with 907 miles; Chevrolet, in the Cleveland which cracked two cylinders and lost seven hours in repairs was fifth with 632 and the Stearns, which Marquis, Laurent and Oldfield handled, was the only other to finish, having gone less than half the distance the leading cars covered, owing to an unfortunate smashup.

Lewis Strang, who guided Paul La Croix's Renault, was a victim of big misfortune. He and Basle, his alternate, had been fighting Robertson for the lead for more than 18 hours, the Renault and Simplex taking turns at leading the field, when Strang's car suddenly snapped a connecting rod and damaged the cylinder to such an extent that it could not continue.

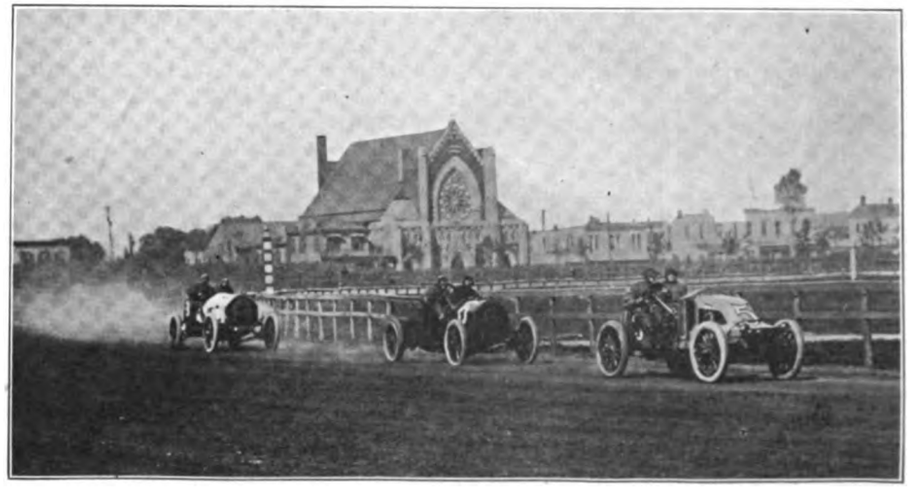
Due credit should be accorded to Charles A. Singer for his persistence in entering the Simplex in contest after contest, despite its failure to secure the first places he was confident of its ability to earn. Robertson, who has had more than one unfortunate experience, drove a splendid, daring race and can be counted on to be a worthy contender in the Vanderbilt three weeks hence. Robertson used Michelin tires throughout, as did Strang. The second car used Continentals, and Diamonds got third place.

Just before starting time, an accident prevented two of the big contenders from getting into line. Ed. Young, who had been practicing with the Garford entry, was ordered back to the paddock and while switching into the gateway from the center of the track, was run into by Harry Michener, who was trying out the four-cylinder Lozier. As the latter rounded the turn, he failed to see Young in time to dodge him. The frames and rear axle of both cars were so badly shattered that neither could enter the long race, although the start was delayed for nearly three-quarters of an hour in order to allow the Garford crew to attempt necessary emergency repairs.

It was a spectacular start, such as characterizes all 24 hours races which begin at night. When the cars tore away at 8.46, Robertson jumped his Simplex to the front and led around the first turn, with Roberts's Thomas "six" on the pole, sticking close. Marquis in the Stearns was third and Martin, in the four-cylinder Thomas, fourth. The cars bunched and were so enveloped in smoke that it looked as though a smashup must be inevitable before the initial turn was rounded. Robertson led the pack around the upper curve and swung into the stretch ahead, when the New York-Paris driver opened up his Thomas and completed the first lap on about even terms with the

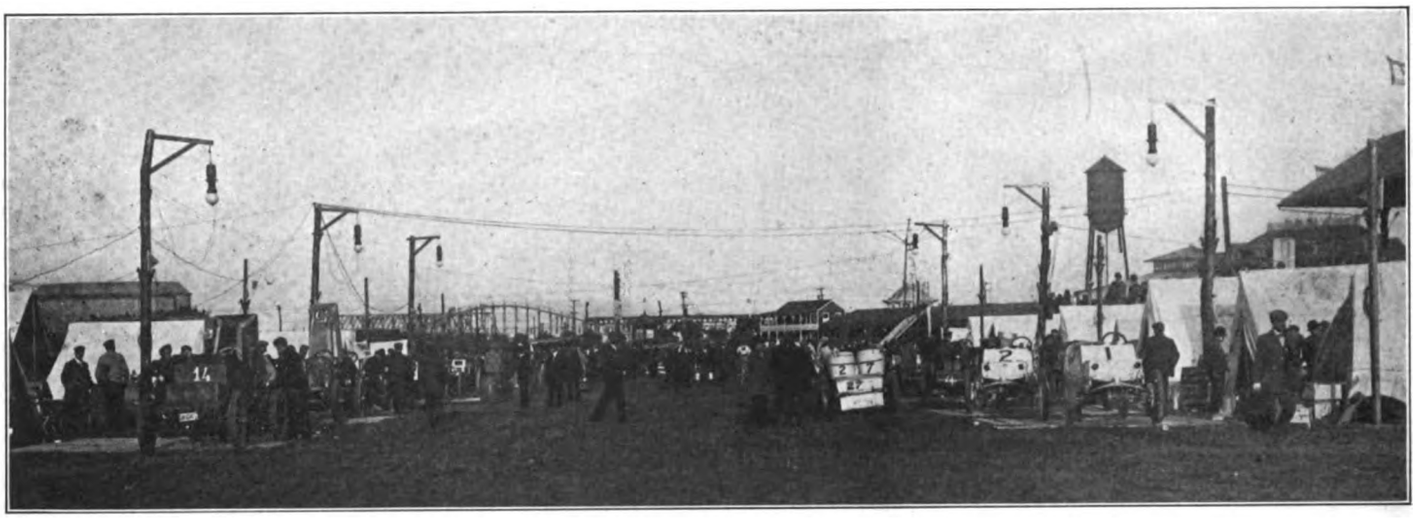


LINED UP FOR START OF THE TWICE-AROUND-THE-CLOCK RACE



STRANG LEADING ROBERTSON AND ROBERTS

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GENERAL VIEW OF THE PADDOCK, SHOWING AVENUE BETWEEN THE CAMPS

Simplex, trailed by Marquis and Martin. Roberts out-generaled the first driver to the turn ahead and forged into the lead; these two drawing away from the string and keeping in a clear field at a furious pace. Then ensued a hot bout between the two pilots whose names are similar.

The ten miles mark was passed in 11:32 and the leading cars held the same relative positions until the 23d mile, when Roberts's Thomas suffered from a choked fuel line and was forced to retire to the paddock and lose a lap. Robertson seized this opportunity and kept up the pace.

He made 40 miles in 44 minutes and when the first hour struck, he had covered 55 miles, which is 3 miles better than the distance made by Bernin's Renault at Morris Park last year. Strang had 54 miles to his credit for the first hour, while Mulford was third with 51, and Marquis fourth with an even 50.

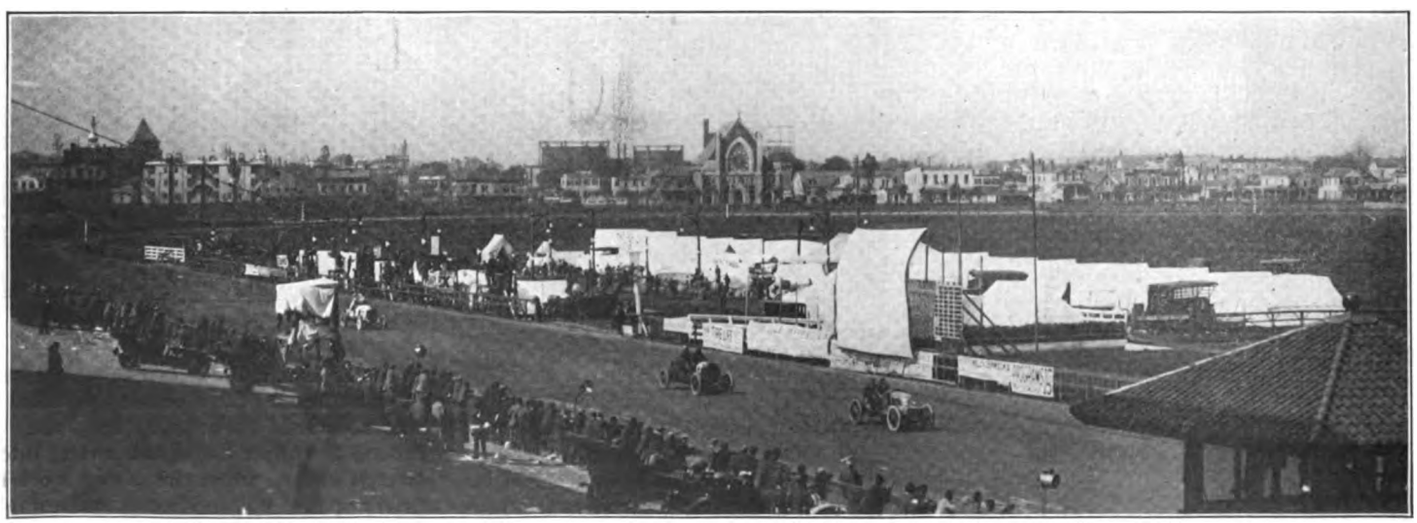
Roberts had returned to the track in the meantime, but trouble with tail lamps set him back so that he covered only 49 miles up to this point.

At the end of the second hour, the leaders were in the same positions; Robertson with 107 miles chalked up, and Strang giving a good account of himself with 105, and keeping Mulford in third position 6 miles behind the leader. Then the accident lists were reopened.

Shortly after 11 p. m. a special policeman named Fickert, unfortunately attempted to cross the track and was struck by George Robertson's car, with fatal results. The man evidently was not heeding the approaching machines, or else misjudged their speed, for he was overhauled by a trio of cars. Strang and Chevrolet barely missed him, but Robertson was directly behind and could not avoid striking the man, although he applied his brakes so quickly that Marquis telescoped the Simplex, smashing the Stearns's frame and headlamps. Lescault at once relieved Robertson at the wheel of the Simplex and started out for Strang, who had secured the lead, with the Lozier and Roberts's Thomas in second and third places.

The excitement had hardly subsided when Harry Cobe, who had relieved Mulford in the Lozier, blew up a front tire and skidded into the outer fence. The car ran into a ditch, the shock throwing out the mechanician, who landed in the mud unhurt. After being hauled out of the mire the car was soon touched up and put back on the track, although Cobe had lost his advantageous position. In the mean time, Lescault had been doing some tall work with the Simplex, fetching it past Roberts, and was running second to Strang at the end of the fourth hour. The latter had covered 211 miles up to this point, 18 miles ahead of Morris Park figures. Strang held this lead for six hours, with Lescault at close range all the time; then in the tenth, the Simplex driver regained first position, holding it for two hours until Strang capped him in the twelfth. It was then a continuous duel between these two until the 19th hour.

In the mean time, Roberts and Mulford were fighting for third notch. Roberts passed the Lozier in the fourth hour and held his own for third place until the eighth, when Mulford again eclipsed him. For



VIEW OF TRACK AND CAMPS FROM GRANDSTAND, SHOWING STRANG, ROBERTSON AND MULFORD IN STRETCH

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hours these two kept alternating for the position with only a few laps margin between them.

About 2.30 a. m., Saturday, there was another sensational accident. Bloch's Renault overturned in taking the lower turn and caught fire. Bloch and his mechanician were thrown out, but escaped with slight scratches, while the car was smashed and burned beyond repair. Immediately following this accident, Charles Natjen, the Zust driver, crashed through the outside fence, spilling both himself and his assistant, Harry Bertell. The latter landed uninjured, but Natjen's head was cut and his leg lacerated. Two cylinders of the Zust motor were smashed when a fence rail pierced the radiator.

The Fiat, driven by Capra and De Palma, withdrew with a broken connecting rod in the eighth hour. Martin and Blanchard's Thomas followed suit in the eleventh, and Patscke and Rodger's's Acme in the twelfth.

Until the 19th hour, Lewis Strang gave Robertson a good argument for the leadership, and just when the contest had reduced itself to a point where the winner could be picked from the quartet composed of the Simplex, Renault, Lozier and Thomas cars, Strang suffered the connecting rod accident referred to above and was forced off the list. Mulford then drew into second, closely pushed by Roberts.

At 5.45 Saturday afternoon the contest was stopped for half an hour to sprinkle the track and put it into condition for the finish. When the cars returned to the fray Robertson continued to push his Simplex around at high speed. He was leading by 60-odd miles and with but six other competitors on the track—only two of whom looked dangerous, the Simplex driver took a 45 miles an hour pace and was never headed. When flagged in the final round with 1,177 miles to his credit, he was 52 miles ahead of Mulford. The latter was pushed hard for second place by Roberts's Thomas, which was within four miles of the Lozier at the close of the 23d hour, although at the finish it had covered a total of 1,115 miles against Mulford's 1,125.

Previous to the start of the 24 hours race, a few short events were held on Friday afternoon. The principal feature was a 50 miles affair in which half a dozen cars started. Barney Oldfield entered two Stearns sixes, one of which he drove himself, the other being in charge of Charles Soules. Oldfield led the string throughout and won in 50:43, with his partner in second place. In the sixth mile, Steinmetz's Mercedes threw a tire and withdrew, while Kilpatrick's Hotchkiss went out later. Roux, driving a Mercedes, was third, trailed by Howard, in a Palmer-Singer.

In the mile trials, Ralph De Palma, driving the Fiat "Cyclone," circuited the track in 0:52⅕. The best George Robertson could get out of the Fiat "Tornado" was 0:58. When these two went in for a ten-miles bout Robertson was disabled in the fourth mile. De Palma's time for the distance was 9:45.

Barney Oldfield took the five miles six-cylinder race in 5:20⅘, out-classing Kilpatrick in the Hotchkiss, and Ray Howard in the P. & S. A special 5 miles match between De Palma, Oldfield and Robertson was captured by the former with the Cyclone, in 4:46. Robertson pressed him hard, but Oldfield, who had been jumped at the start, dropped out. The summaries:

One mile trials—Won by Ralph De Palma (Fiat Cyclone), 0:52⅕; George Robertson (Fiat Tornado), 0:58.

Ten miles special—Won by De Palma; Robertson disabled in fourth mile. Time, 9:45.

Five miles six-cylinder—Won by Barney Oldfield (Stearns); second, H. J. Kilpatrick (Hotchkiss); third, Ray Howard (P. & S.). Time, 5:20⅘.

Fifty miles race—Won by Barney Oldfield (Stearns); second, Charles Soules (Stearns); third, Roux (Mercedes). Time, 52:06.

Five miles match race—Won by Ralph De Palma (Fiat Cyclone); second, George Robertson (Fiat Tornado). Barney Oldfield withdrew. Time, 4:46.



BUSY MOMENTS IN THE SIMPLEX CAMP

SUMMARY OF RACE, SHOWING MILEAGE BY HOURS.

No.	Car.	Drivers.	1	2	3	4	5	6	7	8	9	10	11	12
6	Simplex	Robertson and Lescault	55	107	143	198	255	302	350	401	454	508	559	612
2	Lozier	Mulford, Cobe and Michener	51	101	153	191	228	279	329	381	414	468	513	562
8	Thomas	Roberts, Winter and Salzman	49	99	151	193	236	286	329	374	423	470	516	565
11	Allen-Kingston	Lanwell, Rippingille and Pepperday	42	74	91	94	128	148	185	237	287	328	372	413
9	Cleveland	Chevrolet, Miller and McMann	43	88	137	187	231	263	263	263	263	266	266	266
5	Renault	Strang and Basle	54	105	158	211	265	305	356	408	455	506	558	613
4	Stearns	Laurent, Marquis and Oldfield	50	100	131	131	131	131	131	131	184	241	254	254
15	Zust	Post and Natjen	46	52	82	121	174	217	217	217	217	217	217	217
7	Acme	Patschke and Rodgers	35	62	84	109	143	184	204	233	245	293	309	W
3	Fiat	De Palma, Capra and Hawley	48	99	167	185	237	283	303	Broke connecting rod.				
14	Renault	Bloch and Clement	43	83	123	176	221	255	Overturned and destroyed by fire.					
12	Thomas	Martin and Blanchard	35	35	70	116	158	177	178	188	205	206	Withdrn.	
10	Garford	Young and Doty	..	..	..	..	..	..	..	..	..	..	..	..

No.	Car.	Drivers.	13	14	15	16	17	18	19	20	21	22	23	24
6	Simplex	Robertson and Lescault	658	710	761	810	856	903	949	992	1,041	1,086	1,131	1,177
2	Lozier	Mulford, Cobe and Michener	611	650	702	742	791	840	888	933	981	1,031	1,075	1,125
8	Thomas	Roberts, Winter and Salzman	600	650	690	738	786	837	877	928	973	1,022	1,071	1,115
11	Allen-Kingston	Lanwell, Rippingille and Pepperday	451	495	533	579	615	660	710	750	796	827	874	907
9	Cleveland	Chevrolet, Miller and McMann	267	311	347	361	392	437	475	513	543	583	625	632
5	Renault	Strang and Basle	655	705	758	802	857	888	Broke connecting rod; withdrew.					
4	Stearns	Laurent, Marquis and Oldfield	255	268	268	268	268	287	339	383	429	480	509	519
15	Zust	Post and Natjen	217	217	228	232	269	285	308	333	370	396	421	
10	Garford	Young and Doty	43	47	Withdrawn.									

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BIG RATIO OF PERFECT SCORES

All Starters Finish in Indianapolis Sealed Bonnet Run—Fifteen Out of the Twenty-Six Escape Penalization.

When the Indiana Automobile Trade Association arranged its second annual sealed bonnet contest, which was held on Friday and Saturday, 1st and 2d inst., the technical committee laboring under the impression that the "perfect scores" at the end of the two days' run would be quite scarce, were in error, however. Twenty-six contestants set out from Indianapolis on the run to French Lick, Ind., and of this number, 15 returned with perfect scores. All of the cars made the round trip on schedule time and the only penalizations recorded were minor ones. The total distance covered was 254 miles, 131 miles being the first day's schedule, and the return 123.

The perfect 15 were the following; John Aitken, National; Thomas Kincald, National; H. G. Shafer, Marmon; H. Stillman, Marmon; Harry Hammond, Premier; Henry Letsinger, Premier; Miss Elizabeth Love, Premier; Frank Horrison, Premier; Ted Collier, Rambler; George Gasterneau, Mitchell; J. A. Newby, Maxwell; T. L. Marshall, Maxwell; J. H. Stickney, Chalmers-Detroit; Harry Hocker, Oakland, and O. G. Myers, Reo.

This run was through as picturesque a section of Indiana as could be selected and was considered a successful affair. The first day's run, via Millport Hill and Plattsburg, saw very few cars in trouble. The only accident was when J. A. Newby's Maxwell skidded into Harry Stocker's Oakland near Seymour and smashed off a lamp and fender of the latter. No one was injured. At Millport the cars were given a stiff climb up the steep two miles hill.

The return journey was made via Bedford, Bloomington and Martinsville, upon which there were numerous cases of tire trouble, Fred Tone's American roadster losing two whole hours with tubes, which, however, the driver managed to make up.

A great deal of amusement was created by Frank Grogan's Rapid Truck, which carried a dozen passengers, all dressed in prisoners' stripes. Two women drivers were among the contestants, Miss Elizabeth Love and Miss Katrina Fritz, while the ten-year-old daughter of D. M. Parry guided the wheel of her father's Overland entry part of the time.

San Antonio Meet Full of Incident.

Two smash-ups inside five laps was the record that J. W. Collins made during a short race at San Antonio, Tex., on Saturday, September 27th. In the first accident he merely crashed into a fence and was hurled about 20 feet in the air. Again, after the car had been righted and run two laps, Collins smashed down a second fence and completely upset. Following this, the driver desired to get into the race once more, but the car could not be made to run, much to Collins's chagrin.

In this race there were but two starters—Ben Johnson, in a Mitchell, and Collins's Buick. The former drove three laps and retired to the paddock for adjustment. Collins, who had been skidding badly on the turns, then slowed down slightly, but in rounding the next turn a tire blew up, the car swerved and shot through the rail. Collins picked himself up, looked around for the car and when he located it proceeded to shove it back on the course. In the meantime, Johnson had returned to the track and was well under way. After his second spill the crowd picked up Collins's scattered parts some distance away and reassembled him. He was feeling very well two minutes later, but did no more driving. The event was declared "no race," by the judges.

What was billed as the feature of the program was a 50 miles go between Dave Pryor's Stoddard-Dayton and Will Morrison's Thomas-Detroit. Pryor drove five miles and then surrendered the wheel to Alfred de Hymel. The two contestants fought nip and tuck for 22 laps, when de Hymel suffered a puncture which caused him to lose the race. Upon returning to the track he drove faster than Morrison, gaining a whole mile, but did not succeed in bridging the gap of ten laps. Just as the Thomas crossed the finish line de Hymel broke his steering gear and narrowly missed the fence in a bad skid. Morrison's time for 50 miles was 52:04⅗.

A novelty race was won by W. D. Syers driving a Chalmers-Detroit. The "novelty" feature of the contest was that each car carried five passengers, and was required to stop at every lap in front of the grand stand, "kill" the engine, unload and reload the passengers and then take a fresh start.

Tennessee Takes to Automobile Races.

After numerous fine thoroughbreds, selling platers, dray mules and common ordinary skates had raced around the half-mile track at Cumberland Park, Nashville, Tenn., on Saturday, 26th ult., the last day of the State fair, a few automobile races were reeled off as a wind-up. So enthusiastic were the people over the latter, that the management expects to feature motor races next year instead of the traditional equine sport of the past.

The principal race at the fair meet, a ten miles roadster event, was won by Joe Youell, driving a 30 horsepower Moon, who made the 20 circuits in 12:54⅗. Eli Coillette (Oldsmobile) was second. Youell also won the five miles for touring cars in 5:55, easily beating Duncan Dorris in a Dorris car. W. J. Cummings ran third with a 60 horsepower P. & S. The two miles event for small cars went to W. N. Norman, his Maxwell outclassing the only other entry, which was a Buick.

SEVENTEEN CONTESTANTS START

Two Divisions Begin Chicago's Postponed Reliability Run—Contest is to Cover Four Days of Running.

One thousand miles—no less—is what the 17 contestants in the Chicago Motor Club's postponed four days reliability contest set out to cover on Tuesday, the 6th inst. Quite a variety of cars was represented; 2 cylinder, 4-cylinder, 6-cylinder gasolene cars, steamers, and one motor buggy. All day Monday the technical committee spent in examining the cars and sealing the various parts.

The cars are to run over four different routes, starting from and returning to Chicago each day. The first day's schedule was 262 miles, the route passing through Kenosha, Wis., Janesville, Wiss., Rochelle, and Geneva, at which points controls were located.

Contestants were split into two divisions, runabouts and touring cars, and then subdivided into selling price classes, each car carrying an observer. The starters were:

Driver and Car.	H.P.	Cyl.
C. L. Halliday, Reliable Dayton	21	2
J. Montweiler, Maxwell	20	2
F. S. Dusenberg, Mason	20	2
F. M. Harn, Mason	20	2
N. McLain, Apperson	30	4
E. W. Nicholson, Midland	32	4
P. Hoffman, Pierce-Arrow	43	6
F. H. Nutt, Haynes	36	4
R. F. McNamara, Premier	32	4
J. G. Heaslet, Rainier	45	4
W. Leitch, White steamer	30	2
H. K. Sheridan, White steamer	30	2
L. E. Springer, Franklin	28	4
L. Wagoner, Haynes	36	4
Geo. Smithson, Studebaker	27	4
Joe Moore, Premier	Official car	
H. G. Shafer, Marmon	50	4
A. Kumpf, Pierce-Arrow	60	6

Tie Unbroken in Boston's Contest.

After covering 1,622 miles, the three survivors who were endeavoring to run off the Boston-Bretton Woods 24 hours endurance contest tie, agreed to quit on Thursday evening, 1st inst. The three of the twenty-two original starters who still held perfect scores at the end of the sixth day's attempt at evolving a winner, were a Studebaker, driven by W. G. Jones and R. W. Daniels; Dan Carris's Franklin, and the Shawmut car with Ayer and Church as pilots.

The contest was run under the most stringent and exacting rules, much of it being under weather conditions as well. At the close of the original 24 hours run which started at 10 p. m. on Septemmer 23, from Boston, running to Bretton Woods, N. H., and return, there were only nine of the 22 contestants left with perfect scores. Seven of these started out next day to run off the tie and the list was soon cut down to three. The Bay State Automobile Club is still in possesion of the $200 silver trophy.

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ENTRIES FOR THE SWEEPSTAKES

Good Program for Inauguration of the Long Island Motor Parkway—Arrangements for the Opening Day's Racing.

Long promised and eagerly awaited, the formal opening of the Long Island Motor Parkway on Saturday next, October 10th, forms perhaps a more fitting introductory to the Vanderbilt Cup contest than would the simple elimination race which it displaces. That the Sweepstakes itself is destined to be one of the most eventful races ever run in this country is emphasized by the fact that no less than 34 cars of varied powers and size will be in simultaneous competition and constantly passing and repassing one another. No less interesting than the comparison of the performances of the different cars, will be the opportunity to compare the relative performance of each on the macadam of the common highway and the scientifically prepared surface of the Parkway. For of the 25 miles comprising the circuit to be traversed, about 10 miles will be over the new-laid and practically untried concrete of the private way.

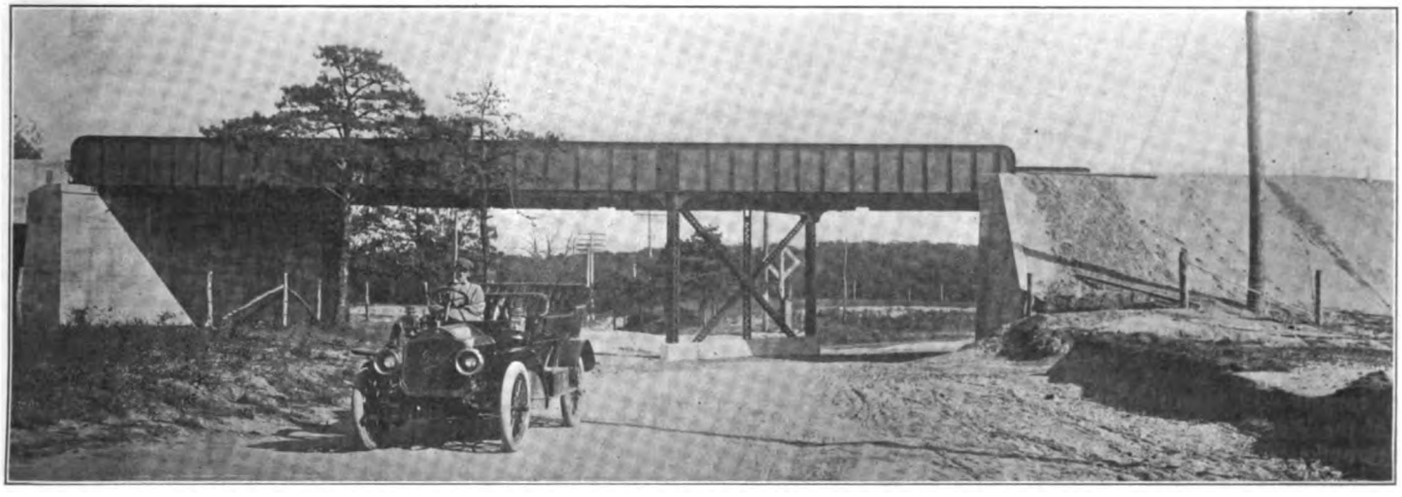
The complete list of entries to date, arranged in order of their classification in the race, is tabulated below.

By the terms of the race, all the contestants will start in a single heat within 30 seconds of each other, regardless of the class distinctions. The smaller ones will run 100 miles; the next class 150; the third, 200; the fourth, 225, and the high-powered, high-priced cars will go 10 laps, or 250 miles.

There will be only two supply stations on the circuit, one in front of the grandstand, which is sunken below the level of the parkway about five feet for the storing of the water, gas, tires, tools and spare parts. This idea of having a depressed supply pit originated abroad and has been tried with very satisfactory results in big European contests. Crews in charge of the supplies will remain in the pit and any driver desiring to make a change of tires or to take on supplies will stop in front of the station allotted to his crew. The men in the pit will pass up supplies to him and no one will be allowed to work on the car except the driver and his mechanic.

The other supply station will probably be located on the Jericho turnpike about 12 miles from the grandstand. Drivers will not be allowed to take on tires or supplies except at these places, but they may make any adjustments necessary on other parts of the course. The entire circuit is supplied with telephone stations and an immense score board has been erected on the roof of an official stand opposite the grandstand.

The entire parkway is fenced in so that it is now impossible to enter it except through one of the three toll lodges which have been established at Meadow Brook, Massapequa and Bethpage. The Meadow Brook Lodge, which is situated at the eastern entrance, is reached by the Old Westbury road which intersects the Jericho turnpike about three miles east of Krug's corners. From the intersection of the old Westbury road and the Old Country road, which leads directly to the parkway from



VIADUCT AT CENTRAL PARK—THE LONGEST BRIDGE ON THE PARKWAY

ENTRIES FOR THE SWEEPSTAKES CONTESTS ON THE VANDERBILT CUP COURSE.

Motor Parkway Sweepstakes—Cars Selling $4,001 and over—Ten Laps; 250 Miles.

Driver.	Car.	Entrant.
W. Haupt	Chadwick	Chadwick Engineering Wks.
H. Lytle	Isotta	Clifford V. Brokaw.
F. Lescault	Simplex	Palmer & Singer.
Kilpatrick	Hotchkiss	Hotchkiss Import Co.
Basle	Knox	Knox Automobile Co.
Lewis Strang.	Renault	Renault Freres.

Meadow Brook Sweepstakes—For Cars Selling $3,001 to $4,000—Nine Laps; 225 Miles.

C. Doty	Garford	Stewart Elliott.
Hughes	Allen-Kingston	Harry Allen.
Bourque	Knox	Knox Auto Co.
L. A. Disbrow.	Rainier	Mrs. Joan Newton Cuneo.
Peterson	Rainier	John Rainier.
Burman	Buick	Buick Motor Co.
Hilliard	Lancia	Hol-Tan Co.

Garden City Sweepstakes—Cars Selling for $2,001 to $3,000—Eight Laps; 200 Miles.

Davis	Moon	Chas. Duer-
	Palmer &Singer	Palmer & Singer.
Miller	Stoddard-Dayton	Atlantic Motor Co.
Wright	Stoddard-Dayton	Atlantic Motor Co.
Tuttle	Stoddard-Dayton	Atlantic Motor Co.
Haynes	Pennsylvania	Pennsylvania Auto Motor Co.
	Pennsylvania	Pennsylvania Auto Motor Co.
Lorimer	Chalmers-Detroit Forty.	Carl H. Page Co.
Sharp	Sharp Arrow	Factory.

Jericho Sweepstakes—Cars Selling for $1,001 to $2,000—Six Laps; 150 Miles.

	Chalmers-Detroit	Carl H. Page Co.
Burns	Mitchell	Mitchell Motor Car Co.
	Mitchell	Mitchell Motor Car Co.
	Maxwell	Maxwell-Briscoe Motor Co.
	Selden	Selden Motor Vehicle Co.

Nassau Sweepstakes—Cars Selling for $1,000 and Under—Four Laps; 100 Miles.

Virbies	Mitchell	Mitchell Motor Car Co.
Olney	Mitchell	Mitchell Motor Car Co.
	Gyroscope	Gyroscope Auto Co.
H. Easter	Buick	Buick Motor Co.
L. H. Titus	Buick	Buick Motor Co.
Cameron	Cameron	Cameron Car Co.
Warnstaldt	Cadillac	Cadillac Motor Car Co.

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the Garden City Hotel, a new dirt road 22 feet wide has been built and winds south across the Hempstead plains, terminating at the Meadow Brook Lodge.

From here the general direction of the Parkway is east, practically paralleling the old country road. The start and finish is midway between the Meadow Brook and Massapequa Lodges. The other lodge is about four miles east of Massapequa, and here the racing cars will leave the cement and turn through a new cut-off which joins what is known as the Round Swamp road. Traveling almost due north along the Round Swamp and Plain View roads the racers will have a very fast but somewhat narrow stretch to travel with a few slight grades and several winding curves. There are no sharp corners until they reach the intersection of the Woodbury turnpike and the Jericho turnpike, where there is an abrupt right angle turn on to the latter famous thoroughfare.



STEEL GRANDSTAND WITH SEATS FOR 10,000 SPECTATORS

Vanderbilt Entry List May Reopen.

While the closing date for entries for the Vanderbilt cup race was announced as October 1 —a date extended from the originally scheduled closing time, September 1 —the Vanderbilt Cup Commission has not yet decided whether to consider the list absolutely closed or not. In view of the fact that there is a possibility of additional entries before the race takes place on Saturday, October 24th, the commission is considering a suggestion to extend the closing date still further and not charge an additional fee for post entries.

Fifteen cars have been entered to date, viz.: Paul Le Croix's Renault, which Lewis Strang will pilot; three Mercedes cars entered by Robert Graves, Wm. K. Vanderbilt, Jr., and Foxhall Keene; Harry Payne Whitney's Brazier, and Clifford V. Brokaw's Isotta, comprising six foreign entries. The nine American cars that have been nominated are, two Locomobiles, one of which will be handled by George Robertson and the other probably by Joe Tracy; R. W. Buckley's B. L. M. racer with Thomas Williams as pilot; two Knoxes to be driven by Bourque and Basle; a Chadwick, a Matheson and an Acme. The Mora, the first American entry, will not be completed in time to start.

PROVIDES REFUGE FOR "SINNERS"

A. A. A. Racing Board's Method for Easing Outlaws' Consciences—Meeting of Directors Called for Friday.

If any man who suspended himself by competing in the outlaw races on the Brighton Beach track in defiance of the rules of the American Automobile Association, desires to fill any other racing engagements, all he need do is to sign a statement that he competed under a misapprehension and that he will sin no more. After laboring hard and perspiring freely, the A. A. A. racing board has devised and offered this convenient refuge for all "sinners" and as most of the drivers concerned have engagements of the sort for Saturday next, in Philadelphia or on the Long Island Parkway, it is expected that a truly awful state of misapprehensiveness will develop. The manner in which the A. A. A. "whipped the devil around the stump" was disclosed by the resolutions adopted by the racing board at a meeting last Saturday, which are as follows:

Whereas, various persons have participated in races coming within the jurisdiction of the American Automobile Association, but for which no sanctions had been granted by that association; and

Whereas, It appears that from the statement of some of such persons they participated in the said races under a misapprehension; be it

Resolved, That in the cases of such participants as were under the misapprehension referred to their disqualification, pursuant to the rules of the racing board of the American Automobile Association, be suspended to the extent of enabling them to participate in any race already sanctioned by the racing board upon such persons filing a statement to the effect that they shall not hereafter participate in any manner or form in any race claimed by the association to be within its sole jurisdiction and for which no sanction has been granted by the racing board of the American Automobile Association.

While no mention is made of the entangled racing situation, President Hotchkiss, of the A. A. A., has called a meeting of the Board of Directors in New York tomorrow at which will be discussed "matters involving somewhat revolutionary changes in our organization and in the scope and functions of the association," which beautiful and profound phraseology is full of suggestion and nothing more.

Among the avowed purposes of the meeting are: (1) The adoption of proposed amendments to the by-laws which shall increase the scope and value of the association in the matter of touring information and the location of touring headquarters in New York City; (2) Amendments to the by-laws remodeling the framework and the purposes of the executive boards; (3) means whereby the activities of the association may be increased; (4) Suggestions as to the personnel of the executive officers and the heads of the boards for the coming year; (5) Whether the fiscal plan should not be materially modified and include a moderate flat fee for the clubs instead of graded annual dues.

Sixteen Entries for Philadelphia Race.

From present indications, the 200 miles race to be held in Fairmount Park, Philadelphia, on Saturday, October 10, promises to be a worthy rival of the Motor Parkway Sweepstakes which will be run on the same date on Long Island. When the list closed last week, 16 entries had been filed, which is the maximum number that can start, according to the Quaker City Motor Club's ruling. The course being but eight miles in length, this will permit cars to start on half minute intervals, and although additional entries would doubtless have been made before October 10, it was decided that more than 16 starters would make the race too dangerous. As it is, the last car will scarcely be started before the first will have completed its first circuit.

Practice on the Fairmount course began last Monday and many of the contestants were on hand at daybreak for tryouts. The course is not really dangerous for the most part, though there are two bad turns, one at Sweet Briar and the other an awkward left hand twist under the Reading railway tracks. The longest straightaway stretch is four miles in length along the West Park drive, where the racers expect to make the best speed. Road repairs have been in progress for several days, and the opinion of several drivers is that the course will permit an average speed of slightly more than 50 miles per hour.

The complete entry list is as follows:

	Cylinders.	H. P.
L. J. Bergdoll, American Locomotive	6	60
C. W. Kelsey, Maxwell	4	28
E. C. Ireland, Stoddard-Dayton.	4	34.5
Bert Maucher, Peerless	4	38
W. Wallace, Palmer & Singer.	6	60
George Davis, Apperson	4	48.4
E. R. Bergdoll, Welch	6	51
Frank Yerger, Studebaker	4	38.5
I. J. Morse, Locomobile	4	40
James Florida, Locomobile	4	40
Cyrus Patscke, Acme	6	45-50
Jack Harkins, Chadwick	6	50
Zengle or Maynes, Pennsylvania	4	38
Ralph Mulford, Lozier	4	45
Harry Michener, Lozier	6	50
La Roche or Staines, Pullman..	4	40

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EARLY GLIMPSE OF NEW MODELS

Motor Cars a Feature in the Carriage Dealers' Show—Commercial Vehicles and High Wheel Buggies in Evidence.

With what serious regard the carriage dealer has come to look upon the automobile industry is revealed unmistakably at the Fifteenth Annual Exposition of the National Carriage Dealers' Protective Association which opened its doors to the trade at the Grand Central Palace, New York City, on Monday of this week, 5th inst. Following a significant representation during the corresponding season of last year, a score or more of automobile makers and members of the allied accessory trades have staged their exhibits alongside of those of the old line carriage and wagon builders and are attracting more than their share of attention, numerically speaking.

Incidentally the show affords a semi-private view of a number of offerings which are destined not to be publicly unveiled until the forthcoming season of automobile shows. In the fourteen different makes of automobile which are staged are no less than eight which never have been shown in New York, the majority of them being new models and branded as of the vintage of 1909.

Over in a corner, quite apart from other vehicles, is the stand of the Ford Motor Co., where are shown in addition to the Models "S" and the "six-forty" the new Model "T," here revealed for the first time. Without going into the details of this machine, suffice it to say that it appears to be a remarkable achievement. In small details as the mounting of the hood, the ignition wiring, finish and equipment, it shows no sign of hasty production, but rather evidences a number of structural refinements which, considering the price at which it is offered, are nothing short of surprising.

Another exhibit which is well worthy of close attention is that of Thomas B. Jeffery & Co., where are four different styles of car in the various models. As a machine which has been exploited over an extraordinarily wide field among practical users, the Rambler has a well-earned place among the exhibits of the vehicle trade. Nearby is the display of Reo cars, staged by R. M. Quinn & Co. As representing the heavier and more luxurious type, are to be found the Glide in the full panoply of a seven-passenger touring car, and the Pennsylvania—the latter in the form of a Model "C" chassis, much the same as that shown last fall, but mounting one or two minor alterations, notably in the reinforcement of the rear axle mounting at one point or another—the changes being those which will characterize the 1909 version. Announcement also is being made here of a new Type "D" car, also known as the "25," and which though not yet ready for the market, is long past the early stages of production and will be publicly announced shortly.

An exhibit which is entirely new, in so far as the cars staged are concerned, is that of the Nordyke and Marmon Co., both of the new "Thirty-two" and "Fifty" models being on view in touring mounting. The smaller of these machines has the new type of motor which was recently described in these columns, a unit type, axle-mounted change gear system, expanding ring clutch, double expanding brakes, and a low, rakish outline which is pleasing in the extreme. The larger machine has the three-point suspended, subframe construction which has been a Marmon feature for so long, multiple disc clutch, selective change gear and a form of rear axle mounting which is as unique as it is ingenious.

Of a totally different nature is the exhibit of the Autocar Co., where are shown for the first time two variations of a brand new type of commercial vehicle which is of entirely original design. The features most noteworthy are the unit power plant mounting, in which are combined a compact 19 horsepower double-opposed motor, three-plate clutch and sliding gearset, together with a double reduction, bevel and spur gear rear axle group, which besides affording an easy step-down for the high-speed motor, affords also a practically straight line drive under load. All the elements of the machine are so disposed as to render access to the parts a matter of small effort and delay, while in the use of magneto ignition, heavy band brake on the intermediate shaft of the axle group, solid construction and generally lavish use of material, the closest attention to the rigorous demands of commercial service is evidenced. This machine is to be furnished in two lengths of wheel base and in various styles of body, under the general rating of 2,000 pounds capacity. In addition to the wagon bodies, however, it appears in a particularly attractive setting on a cab exhibit, where with only 85 inches of wheel base, and a vehicle without overhang, are disposed comfortable quarters for four inside passengers together with ample room for a fifth beside the driver.

More or less in a class by itself because of its unique structural details, is the exhibit of the Brush Runabout Co. Here both the runabout and light delivery wagon are shown in all their originality of wood frames and axles, helical suspensions and left side control.

As being logically allied to the horse-drawn vehicles, it would naturally be expected that the motor buggy representation would be a strong one, as indeed is the case. One of the most solidly built members of this group is the Reliable Dayton, which is shown in both the runabout form and the new commercial wagon, which has already been described in these columns. Aside from the very evident staunchness of construction peculiar to this type, the commercial vehicle embodies a number of notable details, such as the use of pressed steel frame, 20 horsepower motor, sliding gear transmission, double chain drive, and well thought out disposition of weight with regard to traction resistances. A pleasing little arrangement in the matter of convenience to the user, is the mounting of the combined coil and battery box on the dash board. The runabout model has undergone some slight modification since last shown, as in a half-inch increase in tire sizes, and the use of a new form of radius rod with double expanding brakes.

In the Paterson, the W. A. Paterson Co. are showing an entirely new production for the first time in the shape of a long, rangy runabout with the general appearance of the typical motor car, combined with the light lines known only to the carriage maker of long standing. It has 36-inch wheels, chain drive, planetary transmission, and a 14 horsepower, opposed, ball bearing motor placed transversely under a conventional bonnet in front.

Another newcomer in New York, is the Chase Motor Truck Co.'s "business runabout." This vehicle is equipped with a 3-cylinder vertical, air-cooled, two-cycle motor, located under a hood in front, planetary change gear and chain drive. It is mounted on 40-inch wheels, has 90-inch wheel base, and a plain open body of the Democrat type.

The offering of the Anderson Carriage Mfg. Co. is presented in two styles, both of the buggy type, with double-opposed, air-cooled motor disposed beneath the seat, and rated at 12 horsepower, planetary transmission and side chain drive. One has 36-inch wheels and 1¼-inch tires, while the other is a neatly done up approach to what in carriage parlance would be called the phaeton type. An important detail of this vehicle is the construction of the running gear which is framed up in a particularly substantial manner.

In the Schacht a number of minor alterations have been made since last show time, as in the case of the wheels, which are now 38 inches in diameter, instead of 31 and 40, front and rear; the wheel base, which has been increased by 8 inches; and the motor power, which has been raised from 12 to 16 horsepower. In other respects it is practically unchanged, and presents the novel arrangement of the friction transmission with floating disc surrounding the differential drum, which has characterized it from the first.

The Holsman display is noteworthy in that that pioneer maker of his class is showing for the first time an entirely new model known as the "gentleman's automobile," and embodying a number of original details of a radical nature. This vehicle, which is of the coupe type, has a central control pillar so contrived that the vehicle may be operated from either side of the seat. The most unusual feature is the mo-

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tor construction in which a four-cylinder, four-cycle opposed mechanism of block construction, and given a rated output of 26 horsepower, is suspended on the countershaft, which, with the general plan of transmission, is a Holsman feature. In place of the usual crank and connecting rod construction, what may be briefly described as a version of the principle of the Scotch yoke is employed, and the pistons of opposite cylinders are tied together by means of a webbed connecting member carrying an annular ball bearing in which the eccentric member rotates. No gears of any sort are employed, the inlet valves being automatic in action, and the exhausts being actuated direct from the motor shaft without intermediate mechanism. Lubrication is effected through the medium of the gasolene feed, as in two-cycle practice. Another novel feature of the machine is the transmission system in which the cable drive which is employed on the other models is replaced by a steel chain of trapezoidal section which is employed frictionally over sheaves for the high gear, but on low and hill-climbing drive, is dropped into a sprocket by the spreading of the flanges on the driving sheave.

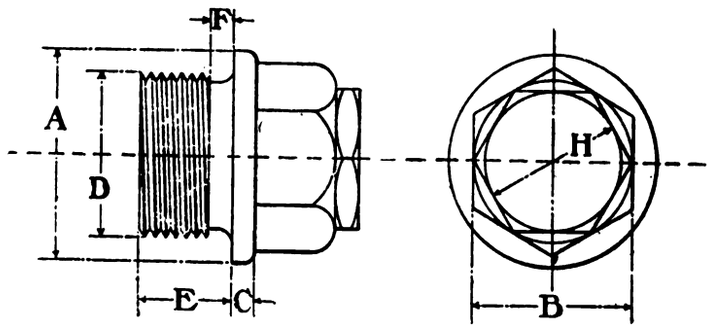
Among the parts and accessory makers are several names which are familiar to the automobile trade, though for the most part gaining representation here by reason of their alliance with the carriage industry through one or more of its many subsidiary channels. This is true of the exhibits of the Hartford, Goodyear and Diamond tire companies, the Sprague Umbrella Co., the Timken Roller Bearing Axle Co., and others. The list of automobile exhibitors and of accessory makers falling under this classification follows:

Anderson Carriage Mfg. Co., Anderson, Ind.; the Autocar Co., Ardmore, Pa.; the Bartholomew Co., Peoria, Ill; Brush Runabout Co., Detroit, Mich.; Chase Motor Truck Co., Syracuse, N. Y.; Ford Motor Co., Detroit, Mich.; James L. Gibney & Brother, Philadelphia, Pa.; High Wheel Auto Parts Co., Muncie, Ind.; Holsman Auto Co., Chicago, Ill.; Thomas B. Jeffery & Co., Kenosha, Wis.; W. H. Kiblinger & Co., Auburn, Ind.; Keystone Lubricating Co., Philadelphia, Pa.; Lewis Spring and Axle Co., Jackson, Mich.; W. P. Mallon, New York N. Y.; Nordyke & Marmon Co., Indianapolis, Ind.; R. M. Owen & Co., Iansing, Mich.; W. A. Paterson Co., Flint, Mich.; Pennsylvania Auto Motor Co., Bryn Mawr, Pa.; Reliable Dayton Motor Car Co., Chicago, Ill.; Schacht Mfg. Co., Cincinnati, O.; Sprague Umbrella Co., Norwalk, O.; Swinehart Clincher Tire and Rubber Co., Akron, O.; Consolidated Rubber Tire Co., New York, N. Y.; Diamond Rubber Co., Akron, O.; Goodyear Tire and Rubber Co., Akron, O.; Hartford Rubber Works Co., Hartford, Conn.; Rose Mfg. Co.,; Timken Roller Bearing Axle Co., New York, N. Y.; and Vehicle Apron and Hood Co., Columbus, O.

A. L. A. M. STANDARD SPARK PLUG

Complete Specifications as Adopted by the Mechanical Branch—Special Details That are Left Optional.

After the lapse of a considerable period the Mechanical Branch of the Association of Licensed Automobile Manufacturers has published the complete specifications of the A. L. A. M. Standard Spark Plug. As explained in the first announcements, the standard adopted calls for a ⅞-inch, 18 pitch plug in which a straight thread is used in place of the tapered pipe fitting at present in common use. The full working



A—ONE AND ONE-EIGHTH INCH (1⅛")
B—SEVEN-EIGHTHS INCH (⅞")
C—ONE-EIGHTH INCH (⅛")
D—SEVEN-EIGHTHS INCH (⅞")
E—NOT LESS THAN ONE-HALF INCH (MIN. ½")
F—NOT MORE THAN ONE-EIGHTH INCH (MAX. ⅛") (DEPTH OF RECESS—NOT OVER DEPTH OF THREAD)
H—THREE-QUARTERS INCH (¾")

details necessary to the construction of the plug are given in the accompanying draft, as printed in an official bulletin under date of October 1st.

In addition to the dimensions shown on the drawing the following specifications also are presented: The stock is to be 1⅛-inch, round; the head form milled hex. with a short diameter of ⅞-inch. The flange is to be circular, 1⅛-inch in diameter by ⅛-inch in thickness, the face to have an annular seat ⅛-inch wide, and suitable for a McKim type copper-asbestos gasket. The blank for the thread must be ⅞ inch in diameter and not less than ½ inch long. The recess adjacent to the flange must be not over ⅛ inch in width and of a depth not greater than that of the thread. The United States standard form of thread is employed, ⅞-18 in size and straight, cut perfect into the recess. The nut head for the packing gland is to be hexagonal in form with a short diameter of ¾ inch.

As the specifications for the standard extend only to the dimensions of the plug and packing gland, it is obvious that the type of insulation to be employed as well as its form and that of the sparking terminals is left open. Thus no restriction on the maker or user is involved in the adoption of the standard, and the vested rights of the accessory maker are in no wise encroached upon. At the same time the adoption of the standard thread, which has become pretty general already carries no small benefit to the trade.

"Blue Blaze" a "Plug Within a Plug."

Giving a thing "blue blazes," is an expression not always fraught with the most complimentary of meanings. The phrase may be accepted in a new sense in the case of the automobile motor, however, in instances where the blaze is of the sort furnished by the Blue Blaze spark plug. This device is the most recent product of the Cleveland Spark Plug Co., Cleveland, O., and is being introduced as a "plug within a plug.' In other words, it possesses the advantage of having an enclosing shell which serves to protect the insulation and guard against the frequently serious troubles due to soot, oil and carbon. Like the "Cleveland" lug which springs from the same source, it is produced with scrupulous care and finished to micrometer gauge.

Tires that Make Their Mark.

If in the soft ooze or clay of a slippery road the motorist sees before him a ribbon of letters impressed into the road surface, reading "NON-S ID. FIRESTONE NON-SKID. FIRES TON"—etc., he may safely take it that the car ahead is equipped with the new product of the Firestone Tire & Rubber Co., of Akron, O., a feature of which is that the words "Firestone Non-Skid" are in raised letters around the big circumference of the letters themselves provide the non-skidding element, and are said to be highly efficacious.

A New Type of Solid Tire.

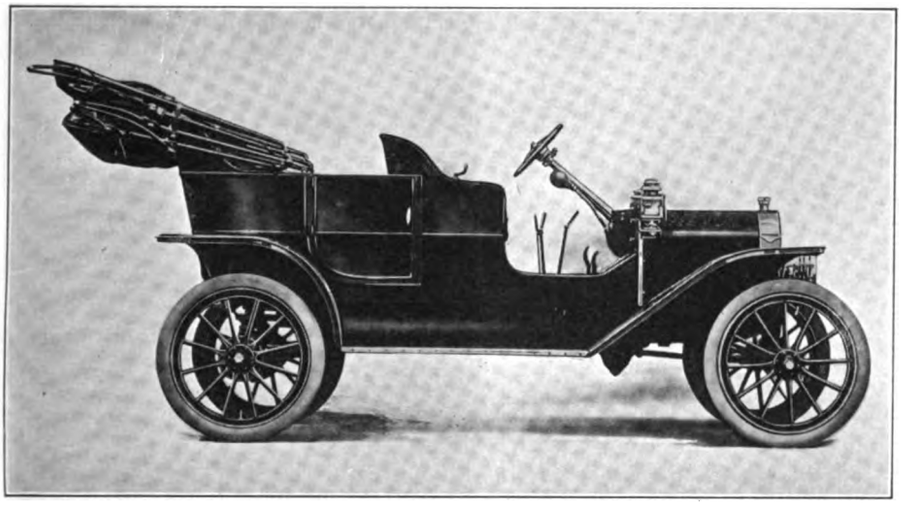
By vulcanizing a hard rubber base to a soft rubber body and tread, the Goodyear Tire and Rubber Co., of Akron, O., has developed a new type of solid tire for which great durability is claimed. P. W. Litchfield, superintendent of the factory, is credited with the invention of the process which makes possible the vulcanizing of hard and soft rubber together.

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SIMPLICITY IN NEW FORD MODEL

Unique Detail in Arrangement of the Power Plant—Novel Features in Suspension and Control Systems.

Although it was practically ready for production last January, so involved and painstaking has been the preparatory work incident to the marketing of a huge output that the long-promised Model "T" Ford car, was withheld until the first of this month before actually being launched. As announced three years ago, coincident with the introduction of the renowned Model "N," this machine is a light touring car modeled along the lines of safe and economical production which have earned for the Ford Motor Co. its eminent position in the field. Like the "N" car and its succeeding variations, this latest product of the big Detroit plant, is designed with a view to combining with extreme mechanical simplicity the most modern of structural advantages. In truth, the present result would appear to be quite as much a credit to the genius of Henry Ford as was the former achievement, though perhaps less spectacular from the point of view of the market.



FORD MODEL T TOURING CAR

The story of the car briefly told is as follows:

Engine: 4 cylinders, 20 horsepower; cylinders cast in block, integral with water jackets and upper half of crank case, the water jacketed cylinder head being a separate casting easily removable, permitting access to all working parts. Magneto generator, low tension, of original design, integral with the engine and driven direct by the crank shaft.

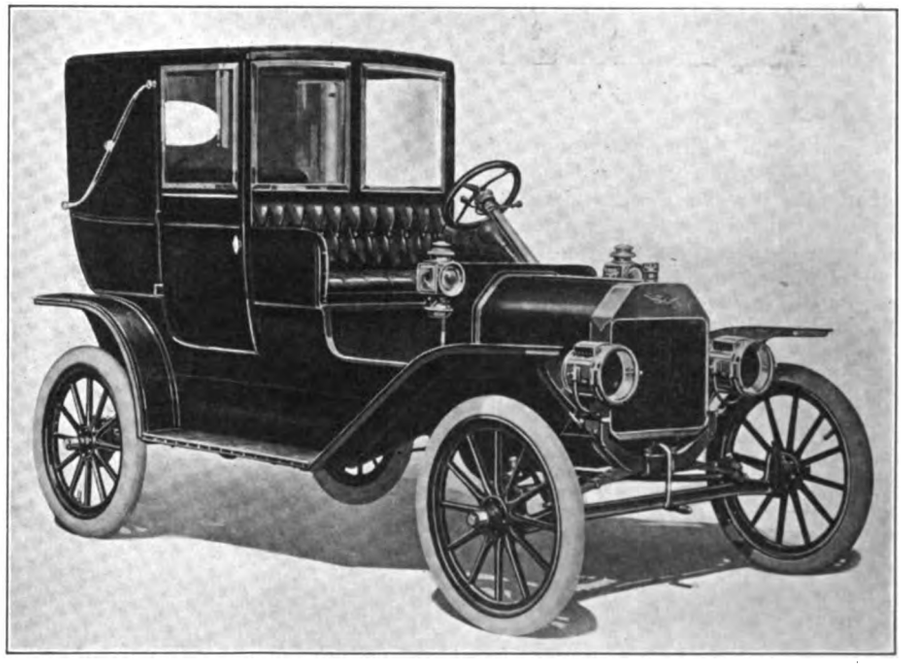
Transmission: Planetary gear, spur type, with large gears mounted on and forming part of weight of the fly wheel, which is back of the engine; unit mounting for gears and engine being an important feature; propeller shaft and live rear axle.

Lubrication: By a special splash system, the fly wheel being the distributing agent, oiling every part of the car except the wheels.

Suspension: By two inverted transverse springs; three point mounting employed in power plant, front axle, rear axle and gasolene tank.

The vehicle complete, carrying five passengers, running on 100-inch wheel base and weighing 1,200 pounds, is made to sell at the modest figure of $850.

Absolutely unique in detail is the arrangement of the power plant, which in one compact unit combines not alone the motor and transmission change gear, but such auxiliaries of the ignition and lubricating systems as commonly are mounted independently on the motor. The cylinder dimensions are 3¾ by 4 inches, bore and stroke, and, as just indicated, the entire aggregation of the 4 cylinders and the upper section of the crank case is cast integral. A second unit casting is the water jacketed head piece, the removal of which permits access to the piston heads and all valves and pockets. A third member forms the base chamber and extends rearwardly to the lower section of the fly wheel and change gear housing, also supporting the gears themselves.



FORD MODEL T TAXIMETER CAB

The fly wheel, which is placed behind the motor, fulfills the unusual additional functions of carrier for the gearset and rotor for the magneto. The entire revolving group of these two systems adding to the weight of the fly wheel, reduces the otherwise necessary bulk of that member, and adds to the simplicity of the design very notably. The magneto, which is of Ford design, is of the low tension type, without rotating conductors and very compactly built. The rotor is a part of the fly wheel; the stator with its coils, is a fixed spider carried by the fly wheel casing. There is practically nothing to become disordered owing to the protected location of the device, and its certainty of action is increased by the elimination of all supplementary driving chains or gears.

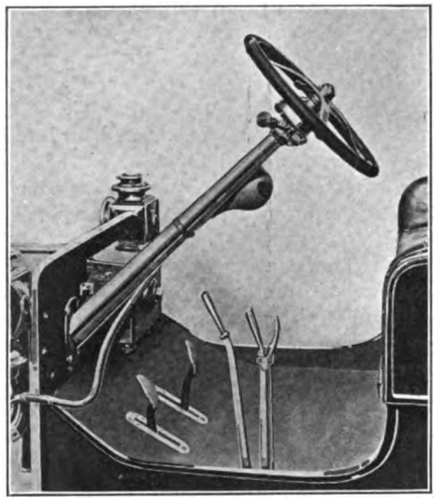
Due to the agitation of the fly wheel in its casing, the lubricant which is carried in a liberal bath extending throughout the power plant, is thrown up against the sides of its container and drained into feed ducts suitably arranged to feed all bearing surfaces not directly affected by the splash of the wheel or the cranks themselves. An ingenious arrangement of partitions provides for the retention of a constant oil level in the system.

The change speed gearing is of the familiar planetary type, the spur principle being adhered to, however, to the elimination of

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all internal gears. The high speed clutch is of the multiple disc type, and the low speed and reverse bands are of steel—fiber lined—and designed for smoothness of application with elimination of the tendency to drag when out of use.

Aside from the novelty of the double-spring suspension, a noteworthy point in the mounting of the chassis is the arrangement for carrying the load, particularly in the case of the rear axle. For this the spring shackles, instead of being carried by the axle tubes in the manner common where elliptical springs are used, are mounted by means attached to the hub flanges. Thus, practically speaking, the only load which must be carried by the axle proper is the dead weight of the differential group and of the rear end of the propeller shaft. Further than this, the central and upper portions of the springs instead of being perched on the frame in the usual manner, are fitted into the section of the inverted U-sectioned cross members of the frame, while the latter are bent upward slightly to conform to the natural shape of the springs. By this means the loosening of the springs at their upper point of fixture is made practically impossible, while the frame itself furnishes a reinforcement which serves a very useful purpose in holding the alignment of the leaves.

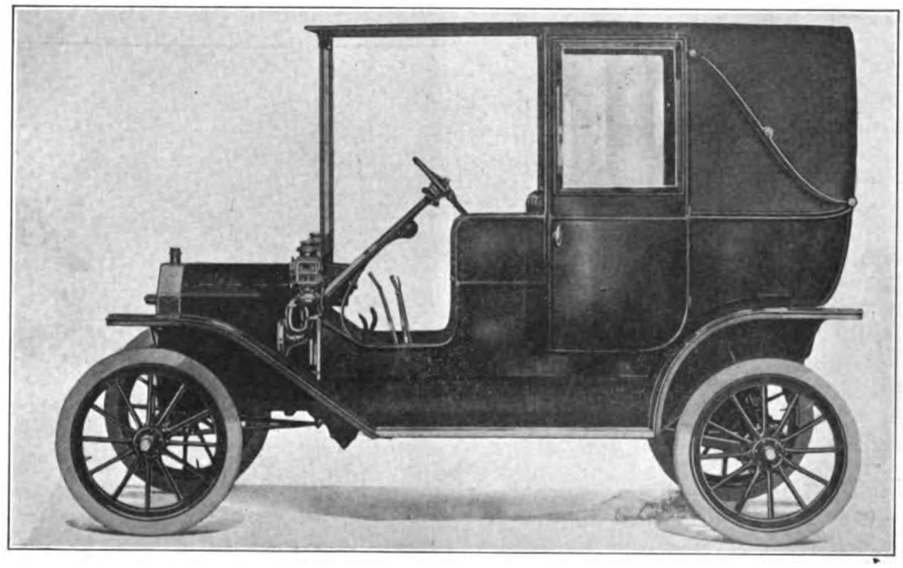


CONTROL OF FORD MODEL T

The braking equipment comprises the service band on the transmission, which is under foot control, and the emergency pair which expand in the rear wheel hubs and are actuated by the side lever. The wheels are shod with 30 by 3½-inch tires in the rear, and 30 by 4-inch in front. The wheel base is an even 100 inches. The gasolene supply is carried in a cylindrical tank mounted directly on the frame and under the front seat, an unusual feature being the use of three-point suspension in connection with this mounting.

The mehod of control is novel in that the left side has been chosen for the driver's position as being the more logical for American use. The forward speed movements are handled entirely by means of the pedals, while the emergency brake and reverse gears are manipulated by side levers. The motor controlling levers are carried just beneath the steering wheel and are accessible without removing the hands from the wheel.

The standard type of touring body, accommodating five passengers embodies the usual lamp, horn and tool equipment as shown on the previous page. Variations in body mounting to follow as soon as production facilities are complete, comprise four other vehicles as well. They are the coupe, landaulette, town car, and runabout and roadster. Deliveries on the first three in order are announced to begin on the first of next month.



FORD MODEL T TOWN CAR

Matheson Makes Big Price Reduction.

Not only is the 1909 line of the Matheson Motor Car Co., of Wilkes-Barre, Pa., to be distinguished by a new car to sell at about $3,000, but three of the five models of the past season are to be reduced $1,000 in price, while the other two will have a $650 reduction. This is made possible, according to a statement by the Matheson Automobile Co., the newly organized selling outlet for the Matheson factory's product, by the new policy which both the manufacturing company and the sales organization have launched upon, following the recent expansion of the factory's financial resources, and which contemplates the doubling of the output and handling of its sale on a smaller margin than heretofore. With the exception of the new car, which will be shaft driven, all of the Matheson models will be like their 50 horsepower chain driven predecessors. The touring car, which up to this time has sold for $5,500, will be listed at $4,500, while the limousine and landaulet models, which have heretofore been held at $6,500, will list at $5,500. The roadster and tourabout models have in the past been $5,000, are to be reduced to $4,350.

Paris Promises Motor Push Carts.

Motor push carts may seen be seen on the streets of Paris if the schemes of one Lionel Gervais are brought to fruition. Gervais has invented a system of motor propulsion for two-wheeled vehicles consisting of a small motor mounted at one end of the "chassis" and driving a countershaft placed at the other by means of the historic flat belt. From the ends of the countershaft, side chains lead to the wheels. By means of a lever mounted on one of the two handles by which the vehicle is balanced and steered, it is possible to shift the belt to and from a loose pulley to start or stop the vehicle. The system is designed for application primarily to replace animal traction in vehicles of this type.

When Valve Springs Become Weak.

Although there is small liability of a well made spring losing its temper or becoming permanently "set" through continuous use, still it occasionally happens that one or more of the valve retaining springs on a motor become weakened as a result of long continued use and so produce irregular running. In the case of a very old motor which has lost considerable power, a new set of springs sometimes will prove a wonderful help in restoring it to standard.

Motor Van for Race Horses.

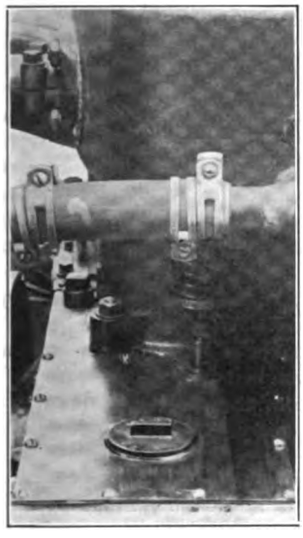
Among the odd uses to which the commercial motor vehicle is being put abroad, may be mentioned a horse-van which is in use near Paris for the conveyance of racing studs. This machine, which may be described as a cross between a horse ambulance and a touring car, is of rather elaborate construction and provides safe and comfortable quarters for the animal passengers, as well as rapid transit.

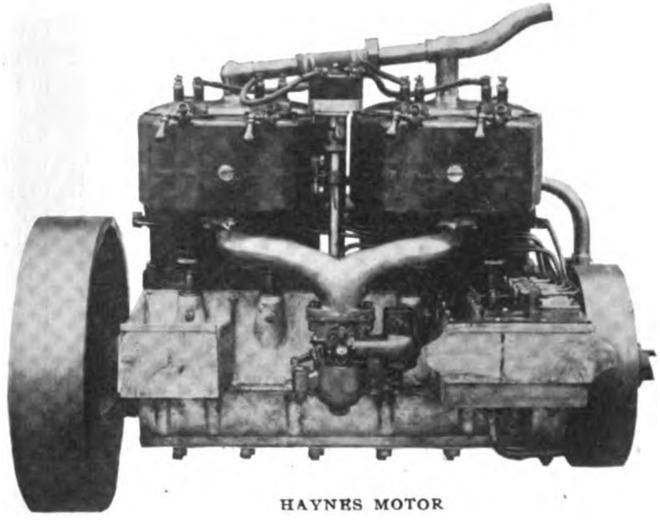
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FEATURES OF HAYNES 1909 MODEL

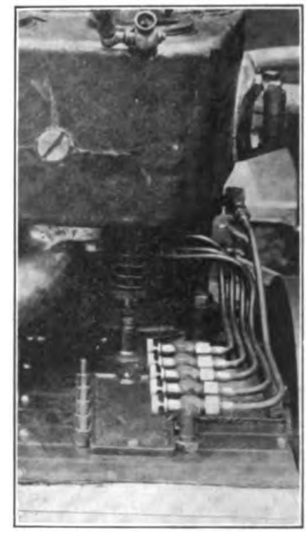
Changes Include Increased Wheel Base and Larger Wheels—Noteworthy Characteristics that Have Been Retained.

As was announced some little time ago the Haynes Automobile Co., Kokomo, Ind., is preparing to make but one model during the forthcoming year, that to be known as Model "X." Final details of this car reveal it to be a successor to the current Model "W," in so far as the retention of its more conspicuous and original details are concerned, but differing from it in a number of important characteristics.





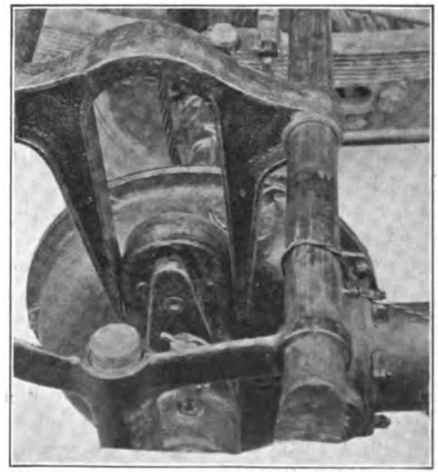
HAYNES MOTOR



Considered merely as a successor to Model "W," it has these modifications: Wheel base increased from 106 to 112 inches; wheels increased in diameter from 34 to 36 inches; roller bearings employed in mounting the crank shaft increased from 2 to 4; the steering column enclosed in a brass housing instead of a plain one, and the hand wheel increased in diameter from 16 to 18 inches; spring clearance raised from 4 to 7 inches; and as additional equipment the use of a gas tank, speedometer, trunk rack, tire irons, and the Bosch magneto.

Considered in the more satisfactory and fairer light of a new machine, it has a number of prominent features which are worthy of special mention. Among these and in connection with the motor the use of the double fly wheel should be indicated. The fact that this detail is held over from the previous model should be regarded as significant of its steadying effect upon the car as a whole and its influence in prolonging the life of the motor in particular. Outside of this peculiarity, however, the motor has a number of features which recommend it to consideration.

The cylinders are cast in pairs with water jackets integral—both inlet and exhaust pockets being surrounded with a good body of water. The bore and stroke are, respectively, 4¼ and 5 inches, a combination which yields an A. L. A. M. formula rating of 36.1 horsepower. The valves are disposed on opposite sides of the cylinders and are actuated directly from below. Each piston is fitted with three composite rings, each consisting of a broad basic ring, outside of which are two narrow thin rings broken at opposite sides and set quartering the break in the large ring. The latter furnishes the pressure to expand the others while they are sufficiently flexible to conform to the contour of the cylinder under all circumstances. The connecting rods are of I-beam section the wrist pin bearing being fitted with an adjustable bushing. The crank shaft is mounted on roller bearings and is machined from forged nickel steel stock, ground and polished.



HAYNES TORQUE ROLLER

The crank case is built up in the form of a three-part aluminum casting, the upper section carrying the cylinders and supporting the motor by means of four integrally cast arms. A unique feature of the latter is that the two forward members are employed as housing and retaining reservoir respectively for the lubricator and oil supply. The right hand member, as shown by the accompanying illustrations, is cast in box shape and in it is carried the McCord oiler, which is gear driven from the crank case. The corresponding compartment on the opposite side is used for an oil retainer, and is connected with the lubricator by means of a cored passage leading to the pump. Five leads carry the oil to the respective cylinders and to the crank case, which is divided into four independent pits, to guard against the banking of the oil when the car is running over inclined roads. The half-time gears and the gear drives for the auxiliaries—oiler, water pump and magneto—are packed with grease in a separate compartment.

A complete and independent dual ignition system is employed. Two sets of spark plugs, carried over the inlet valves, are used, one set being fed with current from a high tension magneto, while the other is supplied from the ordinary battery and dash board coil arrangement, the timer for which is mounted at the top of a vertical shaft set midway between the two cylinder groups.

Several points of novelty are embodied in the arrangement and construction of the transmission system. The clutch is of the contracting band type, and is so contrived as to form what is practically a universal joint between the crank shaft and the line shaft of the transmission. The clutch drum, which is of bronze, is supported in the fly wheel by means of a four-arm cross, each of the cross ends being forked to engage lugs upon the fly wheel. Coiled springs are interposed between the lugs and the forks to cushion the driving action and thus relieve the gears from many of the sudden strains which they must otherwise receive. A heavy arm keyed to the clutch shaft sup-

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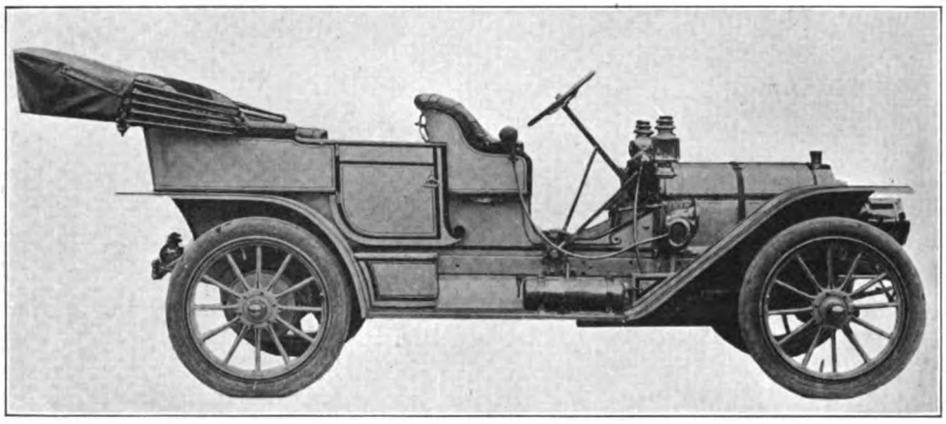
ports the band, and the subjoined mechanism of engagement is so contrived that when disengaged, it is impossible for the band to drag.

Three forward speeds with direct high tension are afforded by the gearset, which is of the sliding gear, selective type. An original feature which has been employed in these cars for several years is the ratchet drive of the master gear on the counter shaft, whereby the latter is permitted to overrun the main shaft when changing from higher to lower gears, thus doing away with the danger of stripping the teeth. Both main and counter shafts are mounted on specially designed roller bearings, and are provided with stuffing boxes to prevent the lubricant from exuding from the case.

The final transmission from the driving shaft to the rear axle is through the "roller pinion" drive, which also is a distinctive Haynes feature, and which corresponds to the "pin and lantern" gear, familiar in old-time mill practice, except that the engaging members of the driving gear consist of rollers which secure a true rolling contact at the driving point. Another original feature of the rear axle group is the torsion resisting member which replaces the torque rod of common practice. As shown in the smaller illustration on the previous page, this consists of a short arm-like extension from the upper part of the differential housing, which carries a stout roller. The latter is engaged by the two faces of a vertical fork extending downward from a pair of cross-frame supports and braced in such a way as to resist any tendency on the part of the axle housing to turn. The provision of the roller, of course, permits the frame to move up and down on the springs without in the least affecting the position of the axle.

In the braking system, provision is made for the employment of water-cooling under stress by hard running, by the construction of the drums in closed form, and the application of the brakes upon the outside. The emergency and running or service brakes, are both of the contracting type. The shoes are of the two-part type, each part being supported at two points, so that there is no possible danger of dragging so long as the adjustment is correct. The emergency set employs a working face of 1½ inch width, while the service brakes are 1¼-inch face width. The drums upon which they are mounted are 14 inches in diameter.

Four types of body are mounted on the standard chassis, namely the touring equipment, which is here shown; the runabout, which is of conventional mold, but has its seat about 6 inches further back than that of the touring car, together with an optional rumble equipment seating one or two passengers according to the fancy of the owner; the "Hiker," which differs from the runabout mainly in having no rumble accommodations, and being arranged more on racing lines; and the toy tonneau. In this the front seat is placed in much the same position as in the runabout, but the rear seat is brought forward from the position given it in the ordinary touring car and also is narrower and accommodates but two passengers. The body is thus a sort of combination between the touring and runabout types, and satisfies the requirements of the light and handy tourist vehicle.



HAYNES MODEL X

Panhard Plans Two New Models.

In connection with the announcements of the foreign makers each year, great interest always is evinced in the Panhard models, particularly within the past two or three years when that historic mark has been graced with more novelty than ever before since its introduction. This season, it appears, is to be no exception to the rule, for the plans for the 1909 product which has just begun to be discussed includes not simply two new models of types rather out of the ordinary line—at least considering their origin, but also the use of a new system of transmission change gear which is planetary in principle.

Of the two new models, one, it is said, is to be a taximeter cab chassis, designed for the special purpose of competing with the Renault cabs, which are so widely used. The other is to be a six-cylinder light car of about 20 horsepower. The new change speed gear is the invention of Henroid, whose designs have always been inclined toward the radical, and is designed to be carried by and practically enclosed in the flywheel of the motor. Although it is familiar in type, it is said to be a new development of the planetary idea. It has been under experimental investigation at the factory for several months, and is mentioned as a probable feature of the 1909 line.

Why the Wire Rope Requires Watching.

Happily the use of wire rope as a means of connecting the emergency brakes with the actuating lever is passing out of popular use. At the same time on old cars or the newer machines which are still in use in which this construction is employed the dangers attendant upon its use are still encountered. In addition to the need of keeping the cable well lubricated in order to assist it in equalizing the strains on the brake bands, it is important that its condition be watched with extreme care, as the breaking of even a single strand of the wire may involve the clogging of the rope when in action, and invariably forestalls an ultimate breakdown. After the first strand breaks, the complete rupture follows with surprising suddenness. A disadvantage of the system which makes it all the more imperative that it be watched with great care is that the breakage of the cable disables not one, but both brakes.

About the Form of the Tank.

Although the careful driver may never reach a point where the last pint or so of gasolene in the tank is necessary to the running of the machine, still that is a contingency which arises with sufficient frequency for it to be worthy of consideration of the designer. For this, the special emergency compartment tanks serve a useful purpose. Considering the fact that at any time the car is liable to be driven over a sharp incline at the side of the road and tipped sufficiently to throw the wash away from the outlet it is surprising that so many makers still continue to equip their cars with plain open tanks having perfectly flat bottoms. The simplest method of avoiding difficulty from this source, namely, the use of tanks with inclined bottoms, is even less common than the use of the two-compartment tank.

Keeping the Spring Yokes Secure.

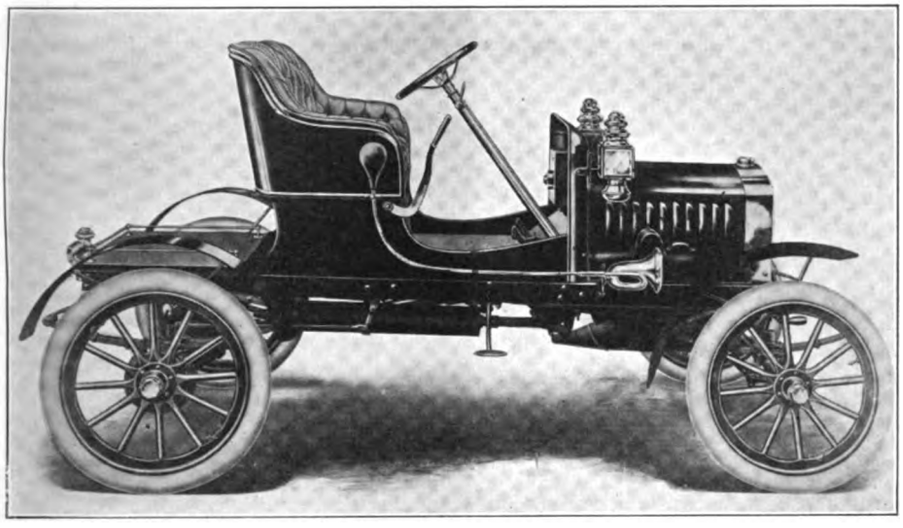
Whenever the car is being given a thorough overhauling the spring yokes should be gone over carefully and the nuts drawn up evenly and as tight as is possible without stripping the threads. Even in the case of springs which have been in use for a long time and have been drawn up in this way repeatedly a certain amount of settling takes place so that it is possible to move the nuts a fraction of a turn. Unless the springs are firmly held there is danger that the leaves will work out of place and be subjected to unequal strains through this displacement.

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MAXWELL MODEL IN REDUCED SIZE

"Junior Standard American Runabout" Retains Characteristics of Its Big Sisters —Modest Price a Feature.

In introducing a new model similar in construction to one which has been exploited successfully in the past, but of larger size, the maker is put to the trouble not merely of developing a new quarter of the field, but also of proving satisfactorily that his design will stand enlargement. The reverse process, however, is attended with no such embarrassing features and the diminutive successor to a known proposition is almost certain of its reception by the public. On this safe principle the Maxwell-Briscoe Motor Co., Tarrytown, N. Y., makes announcement of a new achievement in the "Maxwell Junior Standard American Runabout.' Apart from its other characteristics the feature most calculated to draw attention to this little machine is its price, which is $500, fully equipped and ready to run. And, indeed, its specifications would appear to place it among the "sensations of the season."



MAXWELL JUNIOR STANDARD AMERICAN RUNABOUT

That it follows in every essential detail the well known characteristics of Maxwell construction is another point in its favor. It is thus quite on a par structurally with other members of the same lineage in that it has three-point suspension, unit mounting for the entire power plant, thermo-syphon circulation for the cooling system, multiple disc clutch and metal bodies.

In respect to its specifications the chief interest depends upon their dimensional value rather than the introduction of new or unexpected qualities. Thus the motor is of the horizontal-opposed pattern, its twin cylinders measuring 4 inches bore and stroke, and the rated output is 10 horsepower. The crank case and change gear housing is a one-piece aluminum casting. The cylinders, piston packing rings and time case cover are of cast iron—the latter being so constructed as to permit of removal without disturbing the adjustment of the timing. By means of a "hot-air" ring surrounding one of the cylinders the air supply for the carburetter is thoroughly warmed before entering the mixing chamber. The carburetter itself is of standard Maxwell design and offers the desirable feature of automatic compensation of the charge. Lubrication is by positive feed from a compression oiler mounted on the dash, and each cylinder receives an independent supply. Jump spark ignition is used, with the ordinary double coil and battery arrangements.

The transmission comprises the multiple disc clutch enclosed and running in oil, planetary change gear affording low and reverse speeds in addition to the direct high, and propeller shaft equipped with two universal joints and leading to the live rear axle. The change gear and clutch are mounted in the main housing of the power plant, and while rigidly connected with the engine, receive the full benefit of its three-point support. The universal joints of the shaft are lubricated by a special provision which reduces the attention required from the operator to a minimum.

Control is effected by means of the steering wheel, spark lever directly beneath it, foot actuated throttle and lever and pedal arrangements for the clutch, gears and brakes. The latter are double acting in principle and apply to the rear hubs.

The frame is of hot riveted pressed steel; the springs are full elliptical, both front and rear; the wheels are 28 inches diameter, shod with 3-inch clincher tires; the wheel base is 82 inches. The weight is listed at about 1,100 pounds. Tankage is provided sufficient for 100 miles of average running, the gasolene, oil and water capacities being respectively, 10 gallons, 1 quart and 2½ gallons.

The body which is of the pure runabout type with flat deck back of the seat, is made of metal with stamped moldings, divided seat and is sold equipped with ornamental deck rail in the rear. The equipment, which is included in the price, comprises dash and tail lamps, horn, tool and tire kits, and irons for a top may be had as an extra.

Five other models compose the remainder of the line. The Model "LD" is a light runabout of much the same proportions as the "Junior" model. It is more powerful, a little larger, more fully equipped, and therefore more luxurious. It is driven by a 12 horsepower motor, has 84-inch wheel base and 30-inch wheels, 3½-inch tires, and comes with this equipment: top, gas headlights and generator, oil side and tail lamps, the usual utensils and a magneto. As an option, it may be had with a special body of the rumble seat order, but minus the top.

Model "DA" is the four-cylinder, 24-30 horsepower machine which is already so well known in the markets. It is a light touring car, having 32 by 4-inch tires, 104-inch wheel base, and selling with an equipment into which the mageto is counted. Similar to it in general respects is Model "KA." which has a folding rear seat of the rumble order, and hence fulfills the requirements of a runabout.

A 20 horsepower motor of the double opposed pattern is employed in models "HD" and "Dr." The former of these is a light touring car running on 96-inch wheel base, and selling with a cape top in addition to its other equipment. The "Dr." model is designed and built with the evident intention of fulfilling the needs of the professional man who must be out in all weather, and so is provided with a top, and having ample power and wheel base, is well suited to the requirements of all-weather service.

How to "Convert" a Plain Nut.

It frequently happens that certain parts of the machine which have to be adjusted often are provided by the maker with plain nuts when wing nuts would serve to better advantage. In such cases the driver can readily "convert" a plain square or hexagonal nut by making a saw cut across it and soldering in place a couple of thin steel blades of appropriate shape. A simpler method is to drill a small hole through the long diameter of the nut, entering the drill at one of the corners, and driving a small pin into either side.

Muffling the Sound of a Noisy Gearset.

It is an easy matter to muffle the sound of a noisy gearset by stuffing the case with thick grease. Its absolute suppression, however, is only to be accomplished by the use of a new set of gears in place of those which are worn down sufficiently to give excessive play. Unlike other elements of the mechanism, the gears are not subject to adjustment for wear.

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TO GUARD AGAINST GARAGE FIRES

Comprehensive Ordinance Proposed at Convention of Fire Chiefs—Rules for Location and Regulation.

Declaring gasolene to be "an enemy of life and property far more terrible than dynamite, guncotton or nitro-glycerine," J. A. Archibald, fire chief of Cincinnati, O., at a recent convention of chiefs of fire departments, proposed a complete set of garage regulations which are of interest as embodying the ideas and experience of a veteran fire-fighter who has made a special study of garage phenomena and the things that happen as a result of the peculiar qualities of gasolene vapor. Its greatest danger, he declared, lies in the fact that the unseen vapor "hunts its way into every crevice, driving out the air with its heavier weight and finally reaching its opposing force with that death dealing effect only too well known to the fireman."

After discussing some of the chemical and practical aspects of gasolene, Archibald offered his suggestions for rules for garage conduct and regulations for equipment that to his mind are calculated to protect alike the garage, its patrons, its neighbors, and the public. His recommendations take the form of a proposed ordinance, which in addition to the usual provisions, contains one or two suggestive and valuable ideas in this connection:

No garage should be carried on, except in a fireproof building, not more than three stories high. No garage should be maintained within the came square with hotels, theatres, school houses, hospitals, or other buildings designed for public purposes, nor in any building, of which any part is used as a dwelling. Heating should be done by steam or hot water; the boiler room to be fire proof, and all openings between it and other parts of the garage to be protected by double "standard" doors; no stoves, forges, torches, or furnaces, and no open-flame fire, except as provided in the fireproof boiler room. No lights, except electric, incandescent lights, properly inclosed in vapor tight globes, protected by approved wire-guards, should be allowed in any garage. All of these volatile substances should be stored in closed tanks. No storage or garage building should be placed, installed, constructed or maintained, until an application for permission to do so, with plans and specifications showing a full detail of location, construction and connections, shall have been filed with and approved by the city inspector of buildings.

No storage tanks should be placed, constructed or maintained under a public sidewalk or in a sidewalk area. All storage tanks should be constructed of steel and coated on the outside with tar or other rust-resisting material. The material of all tanks should be at least 3-16 inch thick. No tank should have a capacity in excess of 250 gallons, and all its joints must be tightly caulked. All pipes connected with the tank should be at the top thereof; all tanks should be so buried that no part of their top shall be less than 2 feet beneath the surface of the ground, at the point where the tank is located; all tanks should be completely cased, and surrounded with 12 inches of Portland cement, well tamped in place. All storage tanks should be provided with a vent pipe of 1 inch or large wrought iron or steel pipe, galvanized, with heavy cast iron fittings and screw-joints made with litharge and glycerine, and should be connected with the top of the tank. All tanks should be provided at the top with a screening of 30-mesh brass wire, with goose-neck attachments; all vent-pipes must be carried to the outer air, well braced in position and extended 2 feet above the roof of all buildings within a radius of 50 feet. It should be unlawful to carry more than 500 gallons of these substances on hand at any one time, and then only under the conditions above specified.

All tanks should be provided with a filling-pipe; the filling-pipe should be of 2-inch or larger steel pipe, galvanized, with heavy cast iron fittings and screw-joints made with litharge and glycerine, and no unions or flange connections should be permitted. The filling pipe should be provided with two screens of 30-mesh brass wire, placed, one at or near the tank-connection and one just below the filling cock or valve; the filling pipe should be closed at the intake by a filling cock or valve, the opening of which should be closed by a screw-tap, when not in use; the filling pipe should connect at the top and extend down to the bottom of the tank, and should be laid at a uniform grade, so that it will drain entirely into the tank; the intake-end of the filling pipe should not be within any building and should terminate in a covered box of heavy iron, which should be the level of the ground and kept locked when not in use.

Not more than 10 gallons of volatile inflammable liquid should be kept in vessels in a garage, and then only in approved safety cans constructed of metal, self-closing and of a capacity of not more than 5 gallons each. When not in use, these cans should be placed and kept in drip-cans, and, in garages maintaining a pump house, should be placed and kept in that. In lieu of the above described safety cans, portable filling-tanks of approved construction, not to exceed 50 gallons in capacity, may be used for transporting volatile inflammable liquids to and from the storage tanks for filling and charging the vehicles. The said portable tanks shall be supported on rubber hose attachment, not to exceed 8 feet in length, equipped at the end with shut-off valve with ground key.

All fire or lights on such vehicles or under their boilers should be extinguished upon the entry of the vehicles into the garage within 10 feet of the threshold, and should not be lighted while it is in the garage, until it is brought within 10 feet of the threshold of the exit. Movable incandescent lights in a garage should be protected by vapor tight globes, inclosed in approved metal guards, and should be fitted with keyless sockets, and all electric switches and cut-outs shall be permanently located at least 4 feet above the floor and in an approved cabinet. Where electric charging apparatus is installed or placed in a garage, it must be inclosed in the same manner as herein specified for the boiler room.

No person should smoke in the garage. . . . . The reason for such restriction is quite obvious. Therefore, a notice in large letters, to read, "No Smoking," should be kept displayed in a conspicuous place and manner on all floors and at the entrance of all garages.

No volatile inflammable liquid should be used in a garage for cleaning or for any other purpose whatsoever other than filling the tanks of such vehicles. No such liquids should be allowed to run upon the floor or to fall or pass into the drainage system of the garage; nor shall any such liquid be put into or removed from the tank of the vehicle, while any light or fire on the same is burning, and no such liquid should be carried or kept in open vessels in any garage in any city.

On the floor of every garage there should constantly be kept and maintained conveniently receptacles filled with sand, to be used in absorbing waste oils on the floors. In addition, sand should be kept on every floor in boxes or buckets of approved construction, provided with hand-scoops, to be used for fire extinguishing purposes only—one such box or bucket for 800 square feet of floor area or fraction thereof. Beds of sand, or metal drip pans filled with sand, should be placed under every such vehicle kept on the floors that are not fireproof. One 3-gallon carbonic acid gas fire extinguisher of approved construction should be provided and conveniently located for each 1,000 square feet of floor space, or fraction thereof. Self-closing metal cans, set firmly on 4-inch legs should be kept on the floors of every garage, into which all inflammable waste material should be deposited. Calcium carbide should be kept in airtight buckets at least 6 inches above the floor and in an airtight container provided with a securely fastened cover. If there is a boiler compartment, the container should be located within it.

Movement for International Registration.

In connection with the international conference which is being held in France this week for the purpose of drawing up regulations to facilitate international motor car travel, the plan of making car registrations and drivers' licenses valid in all countries will be advocated. The Touring Club of France submitted to the managing officials the following suggestion for the regulations:

"To accept as valid in France the permits or licenses or certificates granted by other countries both for the vehicle and for the driver. In countries where there are no such official papers, to accept as valid in France the certificates given to their members by the principal motoring clubs or associations. To institute a special registration number, to be known as the Customs number, and easily identifiable, to be fixed by the Customs on entry, and restored to the Customs on leaving."

Automobiles to Expedite Mail Collection.

Owing to geographical location, Indianapolis, Ind., has to close its outgoing mails very early, and heretofore the last collection from the streets boxes in certain parts of the city has been made about 6 p. m., much to the disgust of the people who dictate their letters at 5:59 or thereabouts. To placate the grumblers, the postmaster asked Washington for permission to use automobiles for later collections, a request which resulted in a Department expert coming to look into the matter. He has agreed with the postmaster that two or three motor cars would make it possible to collect until as late as 8:30 where heretofore it has been collected at 6 o'clock, and if satisfactory machines can be bought at a moderate price the Indianapolis post office will be allowed to make the purchase.

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DEFECTS IN STEERING SYSTEMS

Sources of Danger to the Gear—Difficulties of Adjustment—Some of the Serious Causes of Trouble.

It is several years since designers and students of the problem of automobile construction in general came to consider themselves thoroughly familiar with the intricacies of the steering question. Yet though they may be fully understood, the fact remains that the usual type of steering gear still exhibits numerous faults, some of which are of so serious a nature as to merit consideration. Thus, although the common method of connecting the front wheels is supposed to give absolute rolling motion when the vehicle is traveling over turns, it does not always do so in actual practice. Further, while the method of inclining the front wheels is such that their points of contact coincide with the center lines of the steering pivots, it is a fact that many steering groups constantly tend to spread, that is to say, the wheels have a tendency to diverge. This tendency, of course, must be resisted by the connecting rod, and this ordinarily frail member is thus in constant tension or compression according to whether it lies in front of or behind the axle.

In a rather exhaustive treatment of the subject the London Autocar criticises the prevalent methods of steering at some length, incidentally pointing out a number of minor defects, several of which are capable of being remedied without serious difficulty. Indeed, several of the points emphasized are of such an important nature as to merit far more serious consideration than they ever have received.

The intense and rapidly repeated road shocks furnish the most important source of danger to the gear as well as the most difficult to guard against. In this connection the authority cited observes that "as every road shock tends to deflect the wheels, it is necessary to provide some mechanism which will resist such deflection without throwing the strain on the arm of the driver, and this is most easily accomplished by the use of the customary worm and sector gear.

"This gear is not really irreversible," continues the author, "though it is usually described as being so, and, as a matter of fact, if a really irreversible gear is fitted, the steering is very uncomfortable.

"It would be perhaps naturally anticipated that a truly irreversible mechanism which did not allow any motion to be transmitted from road wheels to hand wheel would absorb all shocks, and therefore be extremely comfortable, but, as a matter of fact, though the shocks are absorbed, the rigidity of the gear renders it impossible to 'feel' the road, and after turning a corner or swinging out to pass another vehicle the return to the straight course cannot be obtained by the same natural and easy motion possible with a gear that is not quite irreversible.

"But the worm and sector, though no doubt the best mechanism to use, is never made strong enough for the work it is called upon to perform. Owing to the vast majority of steering motions only taking place over a small portion of the total lock, any gear will wear more rapidly at the center of its motion than at the extremes, and therefore it is almost impossible to provide a positive adjustment which will take up wear at the center without making the gear stiff on the locks, yet knowing this, designers still continue to make gears of the same size and pattern year after year.

"Why should not the worm and sector be made double or treble the size that they usually are? There is plenty of room in most chassis for a very much larger steering box, and even if there were not it would be well worth while to alter the rest of the mechanism to permit of one being fitted.

"Every manufacturer must know that his cars will be steered improperly in garages and coach shops, and yet even in the light of this knowledge he does not design his gear to stand the ill-treatment it is certain to receive. Not only are gears never made strong enough, but they are very seldom made accurately. If a worm drive for a back axle was being produced the worms and worm wheels would be most carefully cut, ground, and hardened, but the steering gear which is continually absorbing shocks, even if it is not in constant motion, very rarely has correctly shaped teeth, let alone hardened or accurately fitting ones. The gear is more or less slack even when new. A worm gear will bind unless the teeth are correctly in mesh, and though a gear may move with perfect ease when there is no strain on it, as soon as any pressure is applied the gear will stick. Thus a gear which appears to be perfect when the wheels are jacked up, may be either always tight, always loose, or tight and loose in alternate positions when in actual use.

"The worm and nut or screw gear suffers from exactly the same defects, and possesses the additional disadvantage of requiring another joint to connect the nut itself with the steering lever.

" . . . . If the same care was taken over the machining and assembling of the gear as is taken over other parts, looseness or stiffness would never occur. Also it may be added, the worm should be properly supported and provided with adjustable thrust bearings. In quite a number of gears the only bearings are at the extreme ends of the steering column, and when this is the case the spring in the tube of which the column is made will allow the worm to spring partly out of mesh with the sector, and when there is no adjustment to the thrust, as soon as a little wear has taken place not only will there be lost motion, but the worm will be able to move up and down slightly, causing rattling in the box accompanied by snatching at the wheel.

"Even assuming that the gear itself is incapable of improvement, there still remain quite a number of details which are usually so badly designed as to be absolutely dangerous. Firstly, the joint pins of the tie rod are seldom large enough, also the forks at the ends of the rod are frequently weak, and it is only in very rare instances that any adjustment or proper means of lubrication are provided. Even though the actual motion about these pins is small, there is a continuous strain the whole time the car is running, which strain varies as the road shocks vary, and the constant blows on the pins are equivalent to quite a considerable amount of motion. It is hardly necessary to describe the methods by which these points can be improved; it is simply a question of spending a little extra money in the first instance, but the amount is so small by comparison with the total cost of the car and the importance of the parts is so vital, that the wonder is manufacturers can afford to neglect them. . . . .

"The advantages of the ball joint in comparison with the pin universal which was employed on the old Wolseley cars is that it is easy to make it so that the wear is automatically taken up by springs. The ball should most emphatically always be fitted on top of the stub axle and at the side of the steering lever, so that the steering rod will not easily drop off if the ball becomes loose in the cups. . . . .

"All the minor faults of steering mechanism, such as wandering of the road wheels without movement of the hand wheel, spring in the connection, backlash, and consequent snatching at the wheel, are due simply and solely to the designers not realizing the immense strains to which every portion of the gear is subjected. Unfortunately, the weakness is not confined to the joints alone; the usual tubular connecting rods are none too strong, and breakage of the stub axle arm sometimes occurs, particularly where it is made to carry both the connecting rod and tie rod. Where springs are employed they are seldom of sufficient strength; tie rods, connecting rods, levers, and the worm gear itself, each and all have a heavy load to carry, and they are rarely strong enough to carry it without a considerable amount of springing and bending, rendering the steering uncertain in action and very uncomfortable when running fast over rough surfaces.

"The trouble does not altogether lie in the design, for, as has already been mentioned, bad workmanship is frequently met with even on quite good cars. A typical example of careless fitting is the frequency with which cars will lock over further on one side than on the other; the stop which limits the motion may occur at any part of the gear, but it is usually in the worm box, and it is only necessary to set the sector properly to obtain equal lock. Also

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if the steering lever is not vertical and if the stub axle arm is not at right angles to the connecting rod when the road wheels are in their middle or straight position, a definite motion of the steering wheel will give a different degree of lock, according to the direction in which it is made.

"Another frequently observed effect is what is best described for want of a better term as flapping of the front wheels. With almost every car there is a particular speed at which this action will be most pronounced. . . . . It is partly caused by spring in the connections, but is also due to an entirely different action. As the rear springs give to a bump, the frame approaches nearer to the axle, and as it recovers its original position the ball end of the steering lever will move up and down in a vertical line. The ball end of the stub axle arm cannot move similarly, and so it is forced to move to and fro, and the wheels must, of course, move likewise, so that when a continual bouncing is going on the wheels will flap.

"The shorter the connecting rod the more pronounced will this action become, and it need scarcely be added that such flapping tends to make the steering erratic. The fashionable large rake to the steering column necessitates a short connecting rod, and thus flapping is usually worse on new cars than on those of older pattern."

Look at the Gear Lever Before Cranking.

Frequent accidents in which a car runs away when the starting crank is turned emphasize the importance of always looking to see that the gear lever is in neutral position before attempting to start the motor. While it rarely if ever happens that a car is left by the driver with the gears engaged, the levers are sometimes manipulated and moved by others and are left by them in such a position that the starting of the motor means the starting of car also, an experience which generally results in the man at the starting crank being run over or jammed against the garage wall when he begins operations.

Loose Cams a Source of Noise.

An obscure and totally unexpected cause for irregular and noisy running in a motor which otherwise appears to be in good condition, is a loose cam. This difficulty, of course, only occurs in machines in which the cams are made independent of the shaft and pinned in place. Where this is the case it sometimes happens that a worn key or a loosened taper pin may occasion considerable difficulty of the sort indicated.

Care in Resetting Timing Gear.

When resetting the timing gear of a motor, it is well to make sure that the two-to-one gears are tightly keyed in place on their respective shafts. Otherwise there is liability of more or less uncertain action, not to mention the probability of a clatter in the valve gear.

ECONOMY IN MOTOR BUS GARAGES

Consular Report Describes Model Establishments in England—Suggestions About Use of Fuel and Oil.

Out of the fullness of British experience in the handling of motor omnibuses, American Consul J. Perry Worden, of Bristol, has prepared an extensive report dealing with the costs and administration of such promising undertakings. While much of the matter treated is already common knowledge in this country those portions which deal with the housing and care of the vehicles are of interest as indicating how the objects of economy and prompt service may be served to the best advantage, as much by the convenient arrangement and equipment of the garages as by careful use of supplies.

"A careful study of several of the best motor-bus garages in this part of the country leads to the conviction that if one would lay out a model garage it might be on a scale where the vehicles are placed ten abreast in rows of two, with sufficient yard space to enable them to turn in and out of the shed," says Consul Worden. "The effect of this arrangement is to reduce the movement of the vehicles to a minimum, since, at the most, but one vehicle has to be moved to get any other bus out of the shed.

"Most good motor bus workshops in England are situated near, if not next to, the office and near the entrance to the garage, and are equipped, of course, with suitable outfits and tools to enable the repairs to be carried out cheaply and expeditiously. There are lathes, small drilling machines, shaping machines, grinders, blacksmiths' forges, and wheel presses for re-tiring. Pits are provided in the shed, under the four vehicles next to the workshop, for facility in repairing and overhauling, and also under the third and fourth rows for the purpose of reblocking the brakes, etc., of the service vehicles in case all the other pits are occupied by vehicles under repair.

"At the end of most sheds is left a space that can be partitioned off and walled in, where bodies of the vehicles can be repainted and revarnished. Near the gate to the shed, perhaps on the left side coming in, will be found the best place for the petrol and filling tanks isolated from the main building. The carbide store is usually just beyond the petrol store, and here, and here only, if one would be cautious, all generators should be recharged. . . . .

"As the petrol bill on motor vehicles is one of the principal items of the running cost, every means should be adopted for studying and obtaining economy in consumption. One essential feature is to know the amount of petrol consumed by each vehicle, and means should be provided to this end. A petroleum-storage tank may be connected through a small semi-rotary pump to a smaller tank provided with a gauge glass, which is carefully calibrated in gallons. This small tank, which will hold about 40 to 50 gallons, is placed at such a height that the petrol will flow into the tanks of the vehicles by gravitation.

"Notwithstanding the fact that the consumption of petrol is a matter of vital interest, and that various and many carburetters, auxiliary air valves, etc., have been tried, nothing seems to have made the marked improvement for which many directors of garages are waiting and anxiously looking. One or two controllers are pronounced helpful, but there still appears to be scope for ingenuity in carburetters, especially if it be true that there is a possibility of a petroleum famine.

"This use of petroleum suggests the considerable use of lubricating oil, and reminds one that the most of oil used in motor engines is absolutely wasted. Of course some engines are far more wasteful than others, but careful supervision, coupled with the longer experience of drivers, should have, and in fact already has had, the effect of greatly reducing the amount used. The personal tendency of engineers in Bristol and vicinity is to use the cheaper oil, and in many instances they have found it to have answered equally well, but, for any great economy, the driver is the man who is to be looked after. Apart from the monetary consideration, over-lubrication is detrimental to the running of the engine, by oil getting on to the brakes, and also over the road. On some of the latest chassis models automatic lubrication has been introduced.

"Once the American capitalist, desirous of embarking on the motor bus enterprise, decides on the method of propulsion and the arrangement of the garage, he will do well to think of the average service of both vehicles and men. One of the most important questions that is to be decided first is the average proportion of the vehicles advisable to keep on the roads in everyday service.

"Experts seem to favor in a garage of 20 buses, as a maximum, the average use of but 13 buses a day, 7 days running, of an average of 90 miles per day, and to believe that this is the greatest number that can be kept on the road consistent with efficiency, where a regular service has to be run daily. This number would, therefore, allow two or three buses to be kept in readiness for changing over and for special service while the remaining five would be going through the hands of the day repair staff.

"With motor vans for freight, it is probable that the average percentage can be increased, but even in this case experience suggests that it would be a mistake to try and attain a very high percentage. Motor vehicles must have great attention paid to them at the hands of thoroughly efficient men, and unless this is done expensive breakages will occur which otherwise might have been prevented."

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LEGAL LOCKING OF IDLE CARS

Providence Police Raise Important Point Under Rhode Island Law—City Solicitor Makes the Matter Plain.

In launching upon a crusade for the strict enforcement of the automobile law, the police of Providence have come upon a stipulation that all cars must be provided with a locking device for use when the car is left by itself on the street. The paragraph in the statute reads: "Every motor vehicle must be provided with some device to prevent said vehicle from being set in motion and no such vehicle unattended shall stand or remain in any public place without first being made fast or locked." As the question was a new one to the police, particularly as to what constitutes a lock under the meaning of the law, the question was submitted by the board of police commissioners to the city solicitor.

An opinion written by Assistant City Solicitor Henry Cram explains exactly what is meant by the statute and what steps automobilists must take to comply with the law. In the course of his opinion, Cram says: "The paragraph referred to was a re-enactment of Section 6 of Chapter 1157 of the Public Laws passed in 1904. The intent of said act at the time of its passage in 1904 in my opinion was inasmuch as all electric automobiles and practically all gasolene automobiles could be locked by the removal of a plug, so-called, from the spark coil, and the engine of the vehicle could not be set in motion without the insertion of such a plug, that such a removal was a sufficient locking device.

"Since that time, however, a large number of automobiles operated by gasolene have what is known as a magneto in place of the spark coil, and the movement of the magneto is controlled by a switch and not by a plug as in the other cases. The engine may be stopped or started by moving the switch of the magneto and therefore in the case of cars using the magneto it would be necessary, in order to securely lock such car, to have some device to prevent the moving of the switch controlling said magneto.

"Your further question, will the setting of the emergency brake disconnecting the clutch from the engine, be considered a sufficient locking device provided some attachment is placed on the brake that will prevent such brake from being changed until after such attachment has been removed? I answer in the affirmative. If all the conditions of your question are complied with, certainly the car would be securely locked."

Cops Ordered to Forego Joy Riding.

In return for free automobile rides for themselves and their friends, several of New York City's bicycle policemen have been unduly lenient with a number of motorists, according to accusations which brought them on the carpet before Deputy Police Commissioner Bugher recently. Calling the members of the cycle squad into his office, Bugher told them he knew that many of them were getting petty graft in various forms, the most common of which, he declared, was the free use of automobiles on their day off. He quoted statistics of arrest to show that the mounted police and officers on foot were catching more automobile speeders than they were, whereas motorists were supposed to be their special charge. Many owners of cars, he said, were permitted to go at any speed they liked, through the streets and the parks, because they had fixed things up in a friendly way with the bicycle squad, while unfortunate drivers from out of town were promptly nabbed for speed proclivities.

Chicago Enforcing Wheel Tax Law.

If in looking out of her boudoir window the wife of an automobile owner in Chicago sees a uniformed policeman come to the door she will not necessarily feel called upon to faint in anticipation of dreadful news. In all likelihood it is simply a call to notify her husband, by means of a printed slip, that he has not paid his "wheel tax" on his motor car and that unless he fixes matters up pretty quickly with the city collector his case will be put in the hands of the prosecutor. The disparity between the number of Chicago automobiles registered for state licenses and the number on which the local tax has been paid has led the city to send the blue-coats to the houses of the delinquents as an earnest of its serious intentions in making the forgetful ones "contribute."

Three attempts on the part of Chicago automobilists to knock out the "wheel tax" which the city is collecting on motor cars have proved unsuccessful, the last defect having been incurred in the Circuit Court when Judge Honore decided against the plea for an injunction brought by the Chicago Motor Club. Attorneys for the club, however, have appealed the case, so that the fight against this form of shakedown is not yet over.

Canada Makes Concession to Buffalo.

Proximity to the Canadian border has in the past brought Buffalo motorists up against the bond requirement when automobiles come within the Canada lines. An arrangement has now been effected by the Automobile Club of Buffalo, by which it is only necessary for its members to show their membership cards in order to go over the Niagara frontier, without the putting up of a bond. Negotiations with S. W. McMichael, chief of the Canadian customs, brought about this happy result, the club taking all responsibility for any abuses of the privilege. It will, however, be necessary for the Buffalonians to take out Ontario licenses if they intend driving in the province.

FOR MOTOR TRAVEL IN NORWAY

American Consul Makes Suggestions on Starting Automobile Stage Lines There —Two Recently Put in Operation.

How local agents in the unpromising territory of Norway are striving to introduce and popularize the automobile by the establishment of regular stage lines, is told by American Consul B. M. Rasmusen, of Stavenger, who reports that the use of machines in his district has been very limited up to this time, though present indications point to greater activity in the near future. The requirement of improved transportation facilities for the inland regions is recognized, he states, and it is probable that the better traveled routes will soon be covered by automobile lines.

"The plan that is being pursued at present," he says, "is to organize an omnibus-automobile company, with permission to carry passengers and freight, according to a time schedule, over certain routes, the organization being promoted by some one who either has an agency already or contemplates securing one, and who is thus assured of making a sale when arrangements have been completed.

"There are two automobile routes, recently organized, operating between Stavanger and adjacent points. The machines used are of European manufacture and were purchased according to the plan described above. From reliable sources it has been ascertained that several automobile routes are now under consideration in different parts of this district.

"Firms contemplating entering this market," he adds, "would do well to have experienced representatives on the ground to study the wants and investigate the conditions pertaining to the trade. The field is new and the prize is likely to go to those who enter first with intention to win."

Big "D" for Diplomats in Massachusetts.

A big "D" on a Massachusetts registry tag next year will mean that the owner of the car is a "diplomat," or representative of a foreign country. The shore of the Bay State is so popular with the diplomatic set from Washington in the summer months that special provision had to be made for them, the Federal Government having long ago taken the position that official representatives from foreign countries are not subject to local law. Constables throughout the state will be instructed on this feature of international intercourse and the big "D" will give immunity from arrest. Dealers in the state will have a figure "O" before the number on their tags, and the coloring of the tags for 1909 will be a reversal from this year's blue letters on a white background to white letters on a blue background.

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The Week's Patents.

892,868. Clutch. Thomas G. Morse, Erie, Pa., assignor to Morse Iron Works, Erie, Pa., a Corporation of Pennsylvania. Filed Sept. 28, 1907. Serial No. 394,987.

1. The combination in a clutch, of a loosely journaled overhanging rim clutch member, radially movable jaws adapted to engage the inside of said rim mounted on the other clutch member, a rotatable sleeve, projections thereon adapted to move the jaws outward against said rim, and electrically actuated mechanism for rotating said sleeve, substantially as set forth.

892,948. Shield for Tires. Richard H. Faughnder, Sidney, Ohio, assignor of one-fourth to Charles Pearson and one-fourth to George Bustetter, Sidney, Ohio. Filed March 2, 1908. Serial No. 418,904.

1. A tire cover comprising a series of metallic plates overlapping each other at one end, a chain encircling the outer surface of said plates, said plates being pivotally connected to the links of the chain, and means for securing the plate to the rim, substantially as described.

893,032. Worm Gearing. Ernest E. Sweet, Detroit, Mich., assignor to Cadillac Motor Car Company, Detroit, Mich., a Corporation of Michigan. Filed Jan. 11, 1908. Serial No. 410,439.

1. In a gearing, co-operating intermeshing members constructed to provide a slight clearance between the intermeshing portions thereof when moved from the normal position, while being in full engagement at the normal position.

893,038. Air Pump for Inflating Pneumatic Tires. Octave Vadam, Paris, France. Filed Jan. 15, 1907. Serial No. 352,414.

The combination in an air-pump of a plurality of pairs of oppositely placed cylinders, pistons and rods for the cylinders, a central operating shaft around which the cylinders are arranged symmetrically, an actuating cam on the shaft, common base plates for the cylinders at each end of the pump, said base plates having ports and channels adapted for conducting the discharge of all the cylinders to a common outlet, rods connecting the base plates at opposite ends adjustably and holding the cylinder, piston rods and cams in operative relation, a pipe connecting the air channels in the base plates, ball bearings for the shaft, said shaft projecting through a base plate and having operating means attached to the projecting end of the shaft, substantially as described.

893,075. Wheel. Ernest Hopkinson, East Orange, N. J. Filed Oct. 16, 1906. Serial No. 339,172.

1. A wheel rim having a clencher hook at one side, a removable flange on the other side, and a removable filler for the clencher hook having a substantially flat surface on its tire side.

893,107. Automobile. Charles Snow, San Francisco, Cal. Filed April 8, 1907. Serial No. 366,934.

1. An automobile comprising a frame, wheel axles, and front and rear fifth wheels supporting said frame upon said axles, each fifth wheel being open in the center and comprising an upper ring and a lower ring turning thereunder, the opposing faces of said rings being grooved to form a runway, balls in said runway, and means for holding said rings together against vertical motion, said means comprising U-clamps secured to one of said rings at suitable intervals, shafts carried at their ends, and a roller on each shaft rolling against the other ring, substantially as described.

893,144. Variable Speed Power Transmission Mechanism. Herman Casler, Canastota, N. Y. Filed April 24, 1907. Serial No. 369,998.

1. The combination of a driving shaft, a driving element on said shaft, an axially adjustable driven element rotatable on the said shaft, means for rotating the said driven element directly from the said driving element, a transmission element at an angle to the said driving and driven elements and constructed to drive the latter from the former, and means for axially adjusting the said driven element on the said shaft.

893,241. Force Feed Lubricator. Clarence B. Hodges, Detroit, Mich., assignor to Detroit Lubricator Company, Detroit, Mich., a Corporation of Michigan. Filed Feb. 11, 1907. Serial No. 350,004.

1. The combination with a reservoir of a pumping device, two inlet and two discharge conduits therefrom, one discharge conduit leading to a sight feed or bleed and back to the reservoir, the other discharge leading to the point to be lubricated, and a single regulating device for regulating the amount pumped through both discharge conduits.

893,270. Vehicle Wheel. Uzziel P. Smith, Akron, Ohio. Filed Sept. 19, 1906. Serial No. 335,177.

1. A wheel comprising a hub section and a rim section, a cushion between said sections adapted to receive the shock of relative movement between the two, a driving connection between said hub section and rim section comprising a disc revolubly mounted on a hub section and eccentrically connected with a disc revolubly mounted on the rim section.

893,281. Universal Joint. Benjamin F. Teal, Glenside, Pa. Filed Feb. 21, 1907, Serial No. 358,679. Renewed Dec. 16, 1907. Serial No. 406,771.

1. A universal joint comprising a yoke, an element, an oscillatory member interposed between the yoke and element, adjustable trunnions carried by said element and oscillatory member for engagement with the corresponding trunnions, and antifriction balls arranged between said trunnions and race members.

893,323. Explosive Engine. Charles R. Greuter, Wilkes-Barre, Pa. Filed April 25, 1907. Serial No. 370,277.

1. In a valve mounting for explosive engines, a cylinder head having a water jacket, a valve cage having a threaded neck and a contiguous shoulder forming a detachable ground joint connection with the inner wall section, and a locked connection with the outer wall section, said valve cage being exposed to the water in the water jacket.

893,400. Internal Combustion Engine. John A. Torrens, Coleraine, Ireland. Filed May 15, 1908. Serial No. 433,121.

1. In internal combustion engines, in combination, an engine cylinder having a main valve chest at one side thereof and communicating therewith, a valve box detachably secured to said chest and having inlet and exhaust chambers communicating with said chest, a main valve controlling communication between said chest and the engine cylinder, inlet and exhaust valves controlling the communication between said chest and said valve box means acting to hold said several valves normally seated and means for positively operating said main valve.

WANTS AND FOR SALE

15 cents per line of seven words, cash with order. In capitals, 25 cents per line.

FOR SALE—300 sets 28x3 best grade artillery wheels, fitted with clincher rims, less hubs. Write for bargain prices on single sets of the lot. THOMAS B. JEFFERY & COMPANY, Kenosha, Wis.

893,409. Power Transmission, John L. Williams, Ellzey, Fla. Filed Aug. 31, 1907. Serial No. 390,951.

1. A power transmission for vehicles, comprising the vehicle wheel provided with a hub having internally arranged teeth, an axle, a stub axle pivoted to the end of the axle and on which the wheel is journaled, a driving shaft in the axle, a stub shaft connected by universal joint with the end of the driving shaft, the free end of said stub shaft being polygonal in cross section, a sleeve fitting on the end of the stub shaft, pawls provided with pivot pins journaled in the sleeve, a shifting arm in connection with the pivot of each pawl, a shifting ring encircling the sleeve, and provided with springs for engaging the shifting arm at different points whereby to reverse the engagement of the pawl with the teeth of the hub, a stop pin for limiting the motion of the ring, a shifting lever provided with a slot, a pin on the ring for engaging the slot, a ring pivoted with projections connected with the stub axle, and springs for limiting the motion of the said shifting lever.

893,418. Gas Mixer. Amos L. Avery, Bradford, Pa. Filed Jan. 16, 1906. Serial No. 296,336.

1. A device of the character described, comprising an elongated tubular chamber having at its outer end a broad contracted portion forming a reduced ground opening, a stem of the same diameter throughout its length except at the center, which is provided with threads of greater diameter, the outer end of the stem passing through said ground opening and at all times forming a tight joint therewith, the outer periphery of the stem adjacent its outer end provided with a series of narrow elongated grooves gradually tapering in width and depth towards the outer end to a needle opening, said grooves being spaced a distance from the end of the stem to form a solid portion to form a tight joint with the ground opening, and means for moving said stem longitudinally within the tubular chamber.

893,455. Hydraulic Clutch. Augustus C. F. Dann, Southsea, England. Filed Aug. 3, 1907. Serial No. 387,000.

1. In an apparatus of the character herein referred to in which the driving and driven members inclose a fluid filled annulus, a block mounted on one of the members and adapted to slide thereon and to be projected to a varying extent into said annulus, a yielding stop on the second member projecting into said annulus and into the path of the block and means for operating said block from outside the apparatus; substantially as described.

893,498. Motor Attachment for Vehicles. John C. Higdon, St. Louis, Mo. Filed Nov. 21, 1905. Serial No. 288,496.

1. The combination with a vehicle body and running gear of a frame applied to the under side of the vehicle body, a support projecting laterally from one side of the frame, and an air-cooled hydrocarbon motor held by the support in such a position that there is a free air space between the side of the vehicle body and said motor.

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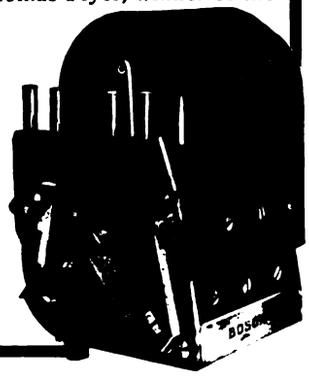
ONE—TWO—THREE

In the recent Twenty-four Hour Race at Brighton Beach the winning Simplex—as well as the Lozier, which finished second—and the Thomas No. 3, were all equipped with

BOSCH MAGNETO

both the Simplex and the Lozier breaking the existing worlds' records. Whenever perfect ignition is desired Bosch Magneto is used.

The Mercedes, winner of the Grand Prix—the Pierce, Glidden and Hower Trophy winners—the Thomas Flyer, winner of the New York to Paris Race—the first ten cars in the Prince Henry Contest—the Fiat, winner of the Floria Cup (Italy) and the Lozier, winner of the first Twenty-four Hour Brighton Beach Race—and in fact the winner of every other racing and touring event of any importance in this country or abroad, has been fitted with Bosch Magneto.



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Because they recognize these lamps as more efficient, more durable—and in fact, a better product from any point of view than any other motor lamp on the market.



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New Model X Limousines

A town car of the most luxurious type. Every detail suggests elegance and refinement. Among the points that contribute to its beauty of design may be mentioned the rounded back and extension front with bent glass windows, a combination giving those symmetrical lines lacking in Limousines not having these features. The luxurious upholstering and interior conveniences leave nothing to be desired in the way of comfort. A dome electric light with switch affords an instant and brilliant light, toilet cases with accessories are at each side, and a speaking tube connects with the driver. Seating capacity of body: five passengers.

PRICE COMPLETE, $3,750.

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CHICOPEE FALLS, MASS.
Member of Association of Licensed Automobile Manufacturers.

Warner Auto-Meter

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When a manufacturer is willing to send his product to anyone, anywhere, for 30 days—with no deposit, no agreement to buy, no promise to do anything except give that product a fair trial—he must have more than ordinary confidence in his article. In order for him to have that confidence he must have a most extraordinary product.

That's what we do. We'll send an Auto-Meter to any automobile owner in the country—with no deposit, no agreement, no promise to do anything but put it on his car and give it a fair trial. It doesn't matter whether he has another make of speed indicator already on the car or not. Indeed, for the sake of comparison, we hope he has. We will abide by the decision—for he will always keep the indicator that tells the truth. We claim for the Auto-Meter that it is the only one of which "the dial never lies." We believe that the instrument itself is the most eloquent salesman we have—we're willing to let it do our talking. Send to-day—just tell us what make and model of car you have—size of tires, etc.—and we will send you an Auto-Meter.



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$1,650.00

Coupe-Roadster

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A complete Roadster for summer use and a handsome enclosed car for winter use at $1,650.

Write for photographs and specifications.

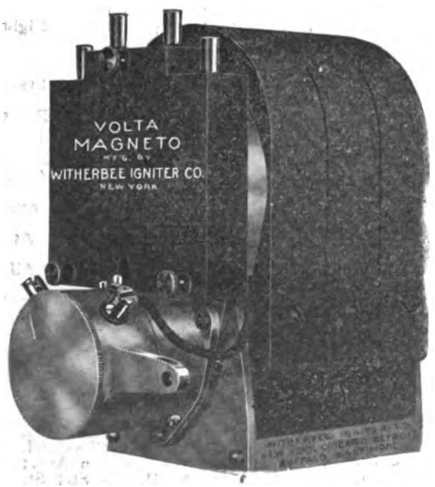
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VOLTA MAGNETO

is so simple in construction that a novice can operate it as easily as an expert.

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More Remy Magnetos

have already been sold for 1909 cars than all our competitors can sell. Sales to date total more than 15,000. And that's not all. More Remy High Tension Magnetos are now in use on American built cars than all others combined.

The Remy is the simplest magneto—the magneto without brushes—the magneto that gives the car user no trouble.

Write for folder giving complete description. We build magnetos for double ignition, and also alternating and direct current magnetos for all ignition purposes.

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THE SELDEN CAR FOR 1909

Enters upon its second year with a clean record. No "first year" car has ever earned a better reputation or made a better showing.

THE CAR OF MODERATE PRICE

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Touring Car **Roadster**
Limousine **Landaulet**

4 cylinder, 28-30 horsepower, shaft drive, selective transmission, metal body, pressed steel frame, excellent hill climber, fine finish and style, roomy tonneau, luxurious upholstery, easy riding, smooth running, economical in up-keep, in fact, a high grade car in every particular.

The "Silent Selden"

1909 MODELS READY IN SEPTEMBER

Agency propositions now ready. Send for catalog and specifications.

Selden Motor Vehicle Co.

ROCHESTER, N. Y.

Member A. L. A. M.

TIME WAS when tire worry spoiled much of the enjoyment of motoring and the motorist who footed the bills had no voice in the matter.

THEN CAME THE AJAX wrapped tread tire with its superior services.

AND NEXT THE AJAX 5,000 MILE GUARANTEE —If the user of Ajax tires fails to obtain 5,000 miles service from his tire, it is for us to worry—not him, and we make good.

WITH AJAX TIRES the tire problem resolves itself into a plain proposition. We know that they will do, and we offer you the best kind of an insurance for expressing your willingness to find out for yourself.

IS THERE ANYTHING MORE BUSINESS-LIKE THAN THIS?

Write for copy of Guarantee, stating what size tire you are using.
Address Dept. A.

AJAX-GRIEB RUBBER COMPANY

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Mongrel or Thoroughbred?

NOW IS THE TIME for you, Mr. Thoughtful Dealer, to decide what you will sell in 1909.

WILL IT BE A MONGREL? a car assembled from parts carried together from all over the country and hammered into shape as well as may be?

OR WILL YOU SELL THE THOROUGHBRED—a homogeneous mechanical masterpiece, every single part of which is the result of the same genius that devised the whole?

"ASTOUNDING," "MARVELOUS," "WONDERFUL," are the terms with which some assembled cars are now tagged, though they are astounding, marvelous and wonderful only to the assemblers, who like Rip Van Winkle, have been dozing in the growing woods of automobiledom and who now, bewildered by the progress that has been going on, seize upon time-tried and long-established practices and herald their adoption by the assemblers as brand-new discoveries.

LET'S REASON IT OUT: On the one hand you have the assembled car, with an engine bought from one manufacturer, a frame from another, and a transmission from a third, and so on down to the last rivet. The maker of the engine, the mill in which the frames are pressed, the transmission man, all derive their separate profits, leaving no other way to the assemblers to obtain their rewards than by skimping the quality of their "product."

AND THEY DO IT—THEY MUST! When you examine some of these astounding cars you will be truly astounded on finding that the four-cylinder engine is cast in one piece and has only two main bearings, whereas the Maxwell has four cylinders and five main bearings. You know well enough that making a motor with only two bearings is equal to leaving the engine to its own devices as far as alignment is concerned.

IT WILL BE A TOUGH JOB FOR THE DEALER to convince the purchaser who is wise that some four-cylinder engines of small dimensions will develop as high as 30 horsepower—because they can't.

MAXWELLS ARE A HOME-GROWN AMERICAN PRODUCT. The use of Maxwell features in Maxwell cars was neither a heaven-given inspiration nor the aping of foreign design, but the outcome of sound engineering sense.

WHEN 10,116 MAXWELL OWNERS testify to the excellence of their cars, all of which have been sold by Maxwell dealers, then the Maxwell proposition is one that you can't afford to pass by.

BEFORE HITCHING YOUR WAGON TO A STAR it will be wise for you to find out all about a dealership for Maxwells, the success of which is past and present, instead of lying in the dark and distant future that has swallowed so many wonderful cars that have been marvelous chiefly in their complete and rapid disappearance from the field of legitimate competition.

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President.

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1909

Prices Redneed $1,000

And the Reasons Why

Heretofore the Matheson Car has been considered the highest priced as well as the highest grade American car on the market.

Millions of dollars worth of these cars have been delivered to customers who could afford to pay the higher price for **the best.**

Many other purchasers have been persuaded that some of the lower priced cars have been "just as good." Matheson owners who have used other makes of cars have answered that question satisfactorily. Send for their letters, which we have done up in a book.

In order, therefore, to still **maintain the unequalled quality** of the Matheson Car and at the same time give customers this magnificent car at the price of the cheaper cars, the makers have figured that by **doubling the factory output** and selling at a much closer margin of profit, the price of the Matheson Car equipped with Touring, Landaulet or Limousine bodies, could be cut $1,000, and the same chassis, equipped with Roadster or Tourabout bodies, cut $650.

Accordingly, the Company's working capital **has been increased by** $250,000, and after October 11, 1908, the purchaser can buy a genuine Matheson Car, the very finest of all motor cars of either European or American make, **at the makers' former prices to the agent or dealer;** namely:

	New Price	Former Price
50 H. P. 1909 Touring Car	$4,500	$5,500
50 H. P. 1909 Roadster	4,350	5,000
50 H. P. 1909 Tourabout	4,350	5,000
50 H. P. 1909 Limousine	5 500	6,500
50 H. P. 1909 Landaulet	5,500	6,500

VICTORIES

The great string of Matheson victories in the important speed, hill climbing and endurance contests of the past seasons, in competition with the greatest cars of Europe and America, can leave no room for doubt that the Matheson car has no peer on any market to-day.

GUARANTY

Every Matheson is guaranteed for 365 days. (Notice that most other cars are guaranteed for 60 to 90 days only.)

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ARE UNIFORMLY GOOD TIRES

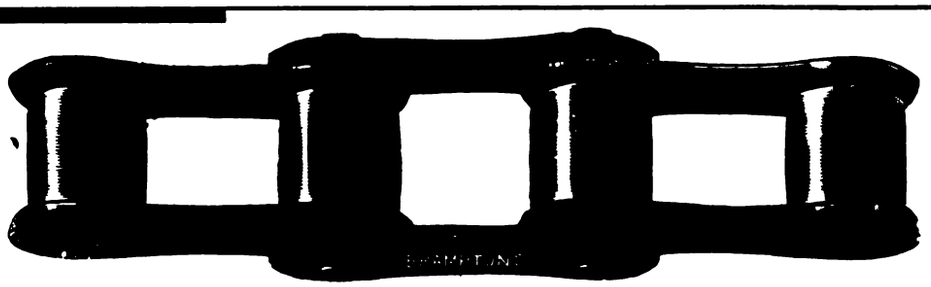
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No special tires.

You can be sure that the tire you buy is the best tire we know how to make.

MORGAN & WRIGHT, DETROIT

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All side plates on both sides of the Brampton Chain are stamped "BRAMPTON."

LARGE SALES and SMALL PROFIT with thousands of satisfied customers is our best advertisement. THE BRAMPTON CHAIN is made of self-hardening Steel; the strongest Chain in the World. All parts polished; fits sprockets (that are properly cut) without friction.

Some of the other chains may look like THE CELEBRATED BRAMPTON CHAIN because some of the other chain makers began to copy the design and shape of the BRAMPTON CHAIN links in 1904. They have improved somewhat on their copied design from time to time until these chains now look more like the BRAMPTON CHAIN than ever before. These chains somewhat resemble the BRAMPTON in appearance, but the manufacturers of such chains have been unable to copy the material —self-hardening steel.

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There has been no change in the design, construction, material or finish of the BRAMPTON MOTOR CHAIN in the past ten years.—"ENUF SED."

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The price being equal, it's presumable you want the best, and full value for your money. In such cases, the BRAMPTON FILLS THE BILL, and the prices are the same to manufacturers, jobbers, dealers and consumers as any other chain of equal size. We have in stock chains to fit all American and foreign cars.

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You can have the new car that you order fitted with the CELEBRATED BRAMPTON CHAIN if you order it that way. No extra cost to either you or the manufacturer. All standard sizes in stock to fit American and Foreign Cars at the same price as the other chains.

SPECIAL CHAINS TO FIT THE INDIAN MOTORCYCLE.
Agents wanted in unoccupied territory. Catalog on request.

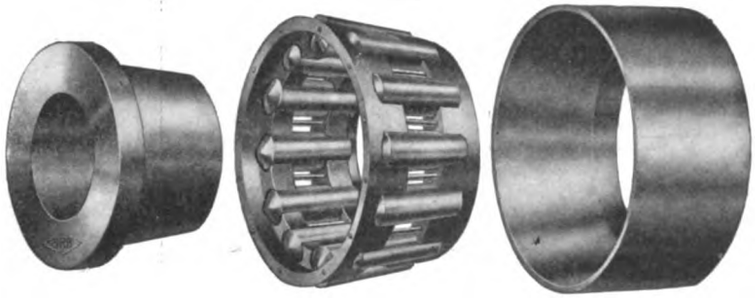
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¶ Possesses many distinctive features and is meeting with marked approval by designers and engineers.

¶ Absolutely guaranteed in all respects. Made interchangeable with any other form of conical or tapered roller bearing, and may be used in existing constructions, replacing types which are less efficient.

¶ Details and prices upon request.

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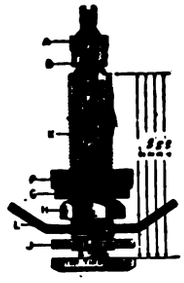
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Trade Mark Registered April 30, 1895



SIMPLE AND ABSOLUTELY AIR TIGHT

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Our No. 777 Motor Tire Valve is the standard for 2½ inch and 3 inch Tires and our No. 725 Motor Tire Valve is the standard for tires larger than 3 inches.

Supplied to the Trade by All Tire Manufacturers

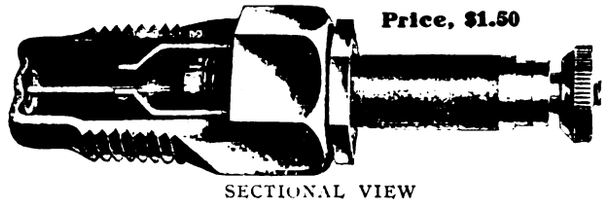
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MEANS USING

BLUE BLAZE SPARK PLUGS

Price, $1.50

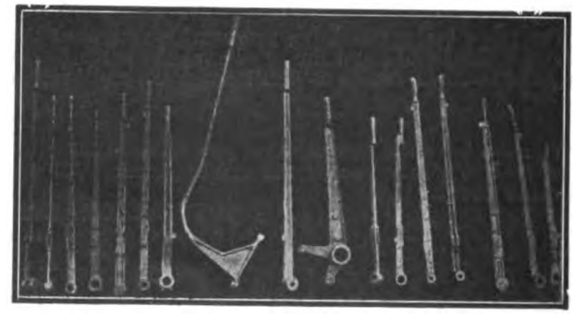


SECTIONAL VIEW

Practically a plug within a plug. Actually double security. We also make the **CLEVELAND**, the plug with the spiral core. It "Shoots a Flame." Price, $2.00.

THE CLEVELAND SPARK PLUG CO. Section D, Whitney Bldg. CLEVELAND, OHIO

PARSONS' MANGANESE BRONZE LEVER CASTINGS

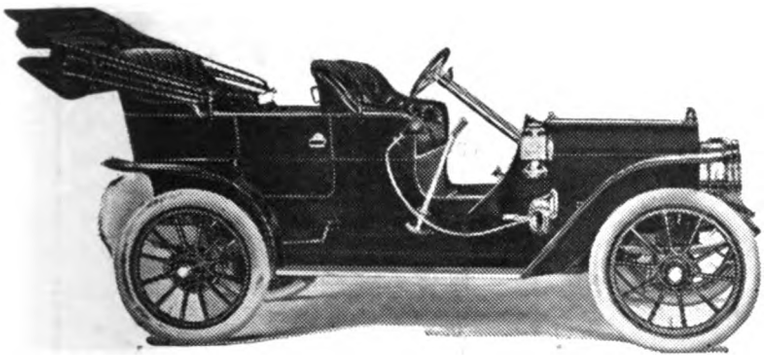


Sole Makers

THE WILLIAM CRAMP & SONS SHIP & ENGINE BUILDING COMPANY, - Philadelphia, Penna.

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OAKLAND



Model B Touring Car, price $1,350.00. Full equipment, including two gas lamps, two side oil lamps, one tail lamp, generators, horn, tools, jack, pump and batteries. Top, $75.00 extra. Runabout, $1,300.

¶ A combination of simplicity and efficiency designed for the man who scrutinizes the car he is to buy, who intends to himself operate it, and to whom economy in up-keep and running expense is essential.

¶ The live agent will find in the Oakland a car that appeals to a large and intelligent class of purchasers and that will justify the fullest confidence.

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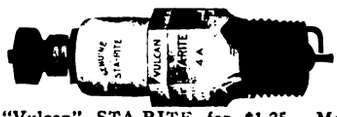
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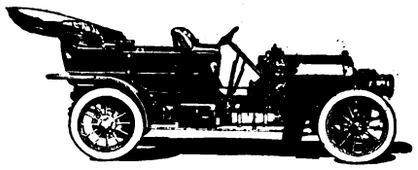
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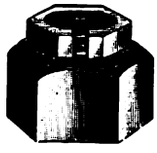
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worth of experience behind the new
$1,500 MITCHELL
This price includes $300 worth of extra automobile value not included in other cars selling at this price. Learn what it is. Write to-day for detailed description.
MITCHELL MOTOR CAR CO.,
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Standard Manufacturers A. M. C. M. A.

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A DUPLICATION, NOT AN IMITATION OF LEATHER.
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ONE Quality for ALL Models
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Write for 1909 Catalog.
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CANNOT shake loose. They add an important factor of safety and give a feeling of security. Columbia Lock Nuts are the best kind of accident insurance. Used by most makers of the best cars and by leading railroads, etc. Send us a two-cent stamp, size and thread of the bolt, and we will forward a Columbia Lock Nut for it.



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Is the one perfect automobile lubricant. Panhard Oil is the only cylinder oil made that will lubricate at all temperatures. It insures against pre-ignition, pounding, and other costly engine troubles which are commonly caused by poor cylinder oil carbonizing in the cylinders.

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ITS SAFE TO COAST
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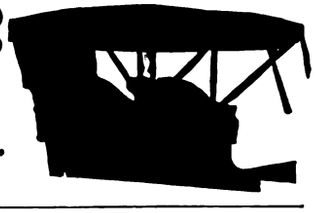
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4-40 Roadster. Price, $3,000.
that made the run from Philadelphia to Savannah, Ga., March 5th to 18th, through mud up to the radiator, beating all previous records.
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The Simplest Automobile in the World.
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We had to refuse him—50 extra was all we could grant, for 500 other dealers have all made the same request.

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The Only Cure for Tire Troubles
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Agencies in all the large cities.
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Give Your Car a Good Name
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SUPPLEMENTARY SPIRAL SPRINGS

Change a bone-shaker and a spring-breaker into an easy riding, real automobile in which you can take pride and your passengers comfort. The use of S. S. S. change a near-good car to a real good car and add the finishing touch of luxury to the best cars. Our booklet tells you all about them, and is yours for the asking. Write for it.

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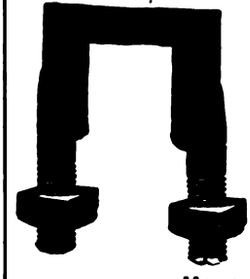


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"S" PIPE

A very handy wrench for inconvenient places. Drop forged steel throughout, parts carefully hardened, and are interchangeable. Has patent nut locking device at side.
Write for new circular.

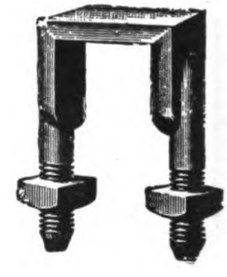
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Thousands of our Spring Clips are now in use, having been supplied to the leading automobile manufacturers.



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Buy It And Try It And Prove It Yourself



The reason the SPLITDORF

Common Sense Plug

is a prime favorite with motorists is because they have found it an exceedingly good Plug. Will not carbonize, short circuit or break. Gives the hottest spark with absolute certainty. A working Plug from every point. $1.00.

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"RAJAH"
SPARK PLUGS

IGNITION ABSOLUTELY SURE

RAJAH AUTO SUPPLY COMPANY
BLOOMFIELD, NEW JERSEY, U. S. A.
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FRANKLIN 1909
Model D

The Perfect Score Car of the Chicago 1000-Mile Test, the Bretton Woods Eight Day Grind and the 1700-Mile Glidden Tour.

Unincumbered Franklin dash-board. Notice the neat effect. No coil box. No oiler. Merely the magneto switch. The needle valve stem and primer rod.

Ideal Ignition and a Clean Dash.

The Bosch high tension magneto as used on Franklin automobiles without an auxiliary battery system has solved the ignition problem.

It is easier to crank the motor than with the battery system and back kicks are impossible. The magneto on Models D and H is provided with a governor which automatically retards the spark and holds it near dead center of the engine when starting.

With the magneto, slower running on high gear is possible than with the battery system without too much throttling of the charge. The spark can also be independently controlled by the control lever on steering wheel.

The spark is more intense than that of a battery and starts the motor easier at any time, particularly in cold weather when the mixture is likely to be poor at starting.

Records of the Paris, London and New York taxicab service definitely proves this to be the most reliable of all ignition systems.

In the Glidden Tour, Franklin automobiles equipped with this system had no ignition troubles whatever, not even a spark-plug was removed during the entire run.

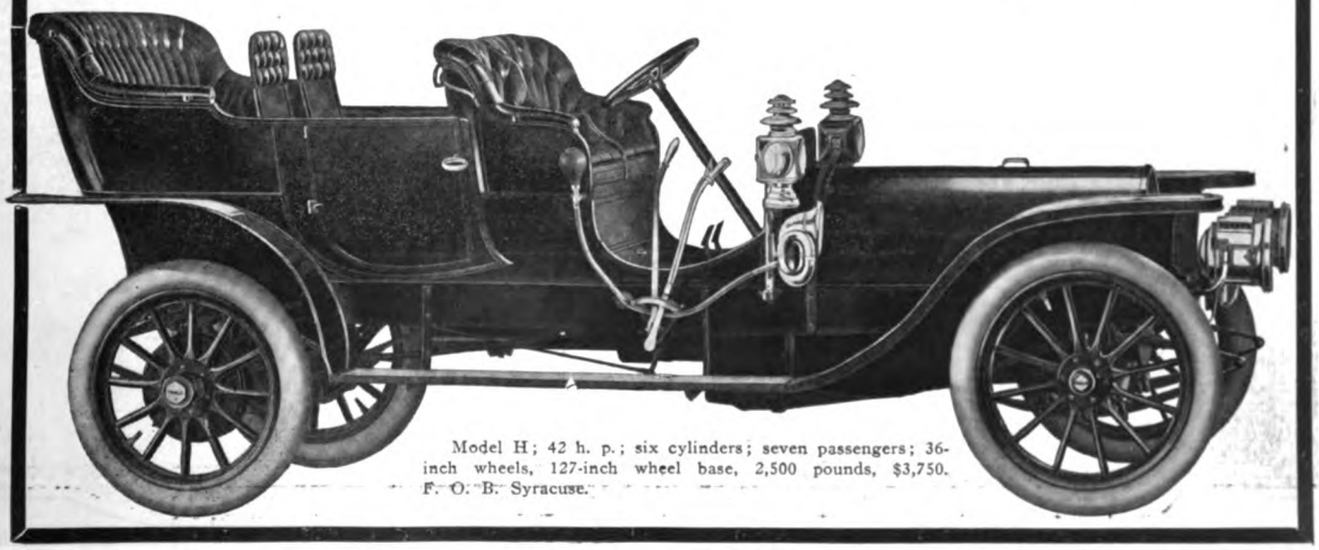
The magneto gets rid of the battery box from the running-board and the coil box from the dash, thus adding to the neat appearance and general style of the automobile.

The Franklin is the first automobile in America to employ the high tension single ignition magneto system (nine-tenths of the leading foreign makers are already using it) just as the Franklin was first with air-cooling, first with four cylinders and six cylinders, first to put the force-feed oiler under the hood, and first with many good things.

Franklins are free not only from ignition troubles but they have no heating nor freezing troubles such as water-cooled automobiles are liable to. And because of their light weight and large wheels and tires, Franklins are free from the tire nuisance that makes every heavy automobile such a troublesome and expensive luxury.

Write for the catalogue describing Franklin refinements in detail, and the full line of Franklin touring-cars, runabouts and closed-cars.

H. H. FRANKLIN MANUFACTURING CO., Syracuse, N. Y.



Model H; 42 h. p.; six cylinders; seven passengers; 36-inch wheels, 127-inch wheel base, 2,500 pounds, $3,750. F. O. B. Syracuse.

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More Remy Magnetos Sold for 1909 Cars Than All Others Combined

FIFTEEN THOUSAND Remy High Tension Magnetos have already been sold for 1909 cars.

—More than the total number of magnetos sold by all our competitors combined.

—More than all our competitors combined **can sell** for 1909 cars.

And **that's** not all. More Remy Magnetos **are now in use** on American-built cars than all others combined.

What does this mean? Simply that the Remy is the **tried** Magneto—the **known** Magneto—the Magneto that can be **relied on** for the best results with the least attention. The history of a magneto proves more than mere claims.

The Remy is the product of the longest experience in magneto construction. We are the oldest magneto manufacturers in the country. Remy Magnetos were in use and were known **before** the day of the automobile, proving the efficiency and certainty of its construction in motors, gasolene tractors, etc.

The Remy Magneto is used with the six-cylinder 200 h. p. steel clad gasolene electric cars of the Union Pacific, manufactured by the McKeen Motor Car Co.—with the powerful engines that operate the heavy Gerling gang plows in the West—and on many other big motors that depend on the perfection of firing for their famous efficiency.

All our experience and the latest light on the science of magneto building have been concentrated on the improvement of the Remy from year to year. The Remy for instance is the magneto without brushes. No brushes to cause trouble—to wear out—and to be replaced.

It is the **simplest**—the most **compact**—the **most dependable.** That's why it can be installed at the smallest expense.

Great Victories Won With Help of the Remy High Tension Magneto

The Remy has thoroughly proved its superiority by **performance.** Here are some of the 1908 victories in which the Remy played an important part:

Indianapolis Auto Races, Sept. 18-19—At the two-day meeting the Buick cleaned up on the first day's program and made an excellent showing the second day, defeating cars costing as high as $4,000. The Buick-Losey Company who handle the machine declare most of their success was due to the fact that their cars are equipped with the Remy magneto system of ignition.

Labor Day Races, Lowell, Mass.—The Buick Motor Car Co. says, "Remy Magnetos used on our cars gave entire satisfaction. Our cars ran faultlessly throughout the whole race, and we can speak in words of highest praise of your Magneto."

Dead Horse Hill Climb, Worcester, Mass., June 6—Record broken for cars up to 20 H. P. by Cameron Three-Passenger Roadster equipped with Remy Magneto.

Economy Contest, Baltimore, Md., August 8—Won by Cameron Runabout equipped with Remy Magneto.

Hill Climbing Contest, Baltimore, Md., August 8—Won by Cameron Runabout equipped with Remy Magneto.

Knox Model L, 30 H. P., equipped with Remy Magneto defeated all cars of equal and several of higher power.

Norristown, Pa., Hill Climb, June 27—First place in $3,000 class, first in $4,000 class, and second in free-for-all gasoline cars won by Knox Model L, 30 H. P., equipped with Remy Magneto. Second place in free-for-all motive powers, and third place in free-for-all gasoline cars won by Knox Model M, 60 H. P., equipped with Remy Magneto.

Arrowhead Hill Climb, New York City, July 11—Won by Knox Model L, 30 H. P., equipped with Remy Magneto.

Shingle Hill Climb, West Haven, Conn., May 27—First place for 30 to 35 H. P., and second place in free-for-all won by Knox Model, 30 H. P., equipped with Remy Magneto.

Rockville, Conn., Hill Climb, June 30—First place in $3,000 class, first in $4,000 class, second in free-for-all and third in free-for-all stock cars won by Knox cars equipped with Remy Magnetos.

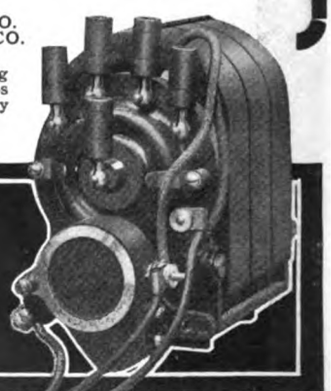
These manufacturers are regular users of the Remy and more Remys are being specified every day for the cars of other makers:

BUICK MOTOR CO. OVERLAND AUTOMOBILE CO. NORDYKE & MARMON CO.
CAMERON CAR CO. MAXWELL-BRISCOE MOTOR CO. HAYNES AUTOMOBILE CO.
MIDLAND MOTOR CO. APPERSON BROS. AUTOMOBILE CO.

Write us for illustration and full description of our new High Tension Magneto. We are building them in such large quantities that we can make you very attractive prices. We also build magnetos for double ignition and alternating and direct current magnetos for all ignition purposes. It will pay you to investigate. Address Dept. 11.

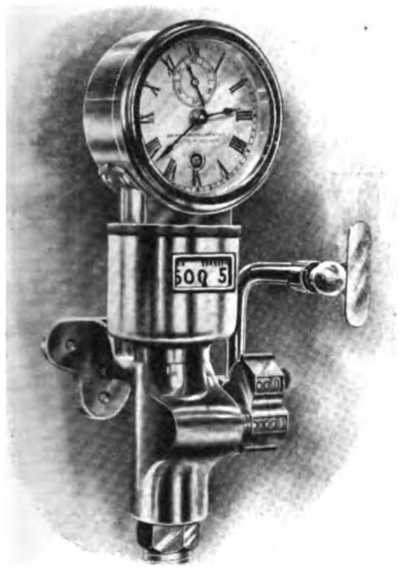
New York Office, Thoroughfare Bldg., Broadway and 58th Street.





Remy Electric Company
Anderson, Indiana

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THE Warner Auto-Meter

In a 20,000-Mile Endurance Test

Four Trips Daily between Pontiac and Detroit, Mich.—200 Miles Every 24 Hours

The Auto-Meter in this double daily century run is attached to a Chalmers-Detroit "Thirty."

Four times every day—rain or shine, muddy or smooth roads—this car equipped with the Warner Auto-Meter leaves Hotel Pontchartrain at Detroit for Pontiac, Mich., and return.

The Auto-Meter is attached to the dash and is depended upon to keep the schedule exact and make the different points at the terminals and en route within the required time.

The Auto-Meter was necessary because in such a gruelling test, where a certain speed must continually be maintained in a specified time, it could be relied upon to be accurate.

Silently and surely it does it work in any weather, under any conditions. To the fraction of a second or the fraction of a mile the Auto-Meter's record is in fallible.

The Auto-Meter is used everywhere one wants to know exactly how far and how fast

In the New York-to-Paris Race, the Thomas, the winner and only American contestant was equipped with an Auto-Meter. The drivers of the famous car give the Auto-Meter due credit for its "silent assistance," which they say materially aided them in winning.

The AutoMeter **always** has been used by the Glidden Pathfinders when they lay out the routes for the Glidden tour, because they know its accuracy may be relied upon.

On the dash of the best cars you will find an Auto-Meter. Owners now find it a necessity as well as a convenience.

We frankly admit there are indicators at less cost, but in an out-and-out comparison where accuracy is demanded to a fraction, the reliable Auto-Meter is the only one that stands the test.

A speed indicator (?) that can't be depended upon is an incumbrance. Write for more details and arrange for a trial of the Auto-Meter.

WARNER INSTRUMENT CO., Factory and Main Office, 284 Wheeler Ave., Beloit, Wis.

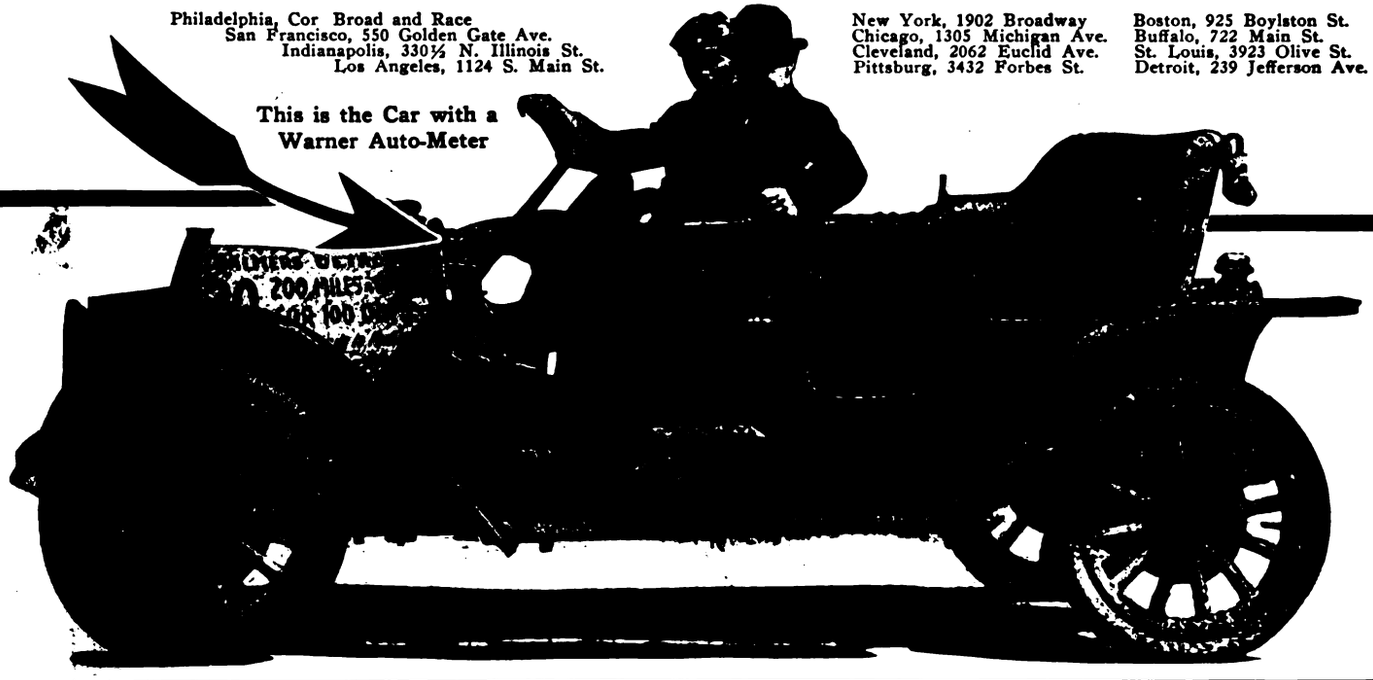
Address your request for trial to our Nearest Branch Office

Philadelphia, Cor Broad and Race
San Francisco, 550 Golden Gate Ave.
Indianapolis, 330½ N. Illinois St.
Los Angeles, 1124 S. Main St.

New York, 1902 Broadway
Chicago, 1305 Michigan Ave.
Cleveland, 2062 Euclid Ave.
Pittsburg, 3432 Forbes St.

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This is the Car with a Warner Auto-Meter



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Hereafter, Call It

THE WAVERLEY ELECTRIC

(Formerly the Pope-Waverley)

The Pope interests having been purchased by a syndicate of prominent Indianapolis business men, the Waverley plant of the Pope Motor Car Company will hereafter be operated as an independent concern by the Waverley Company. The factory and sales organization remains unchanged.

Backed by ample capital, the new Waverley Company will devote its whole time to the manufacture and sale of the famous Waverley Electric—the standard of electric automobiles.

The Best Electric To Buy—And The Easiest To Sell.

No other electric has ever approached the famous Waverley in practical efficiency. Where great mileage is demanded by the purchaser—a hundred miles or more on one battery charge—the Waverley can give him more of it than any other electric, at no greater expense.

Where a more practical radius of travel satisfies the purchaser—say, 50 to 60 miles per charge—the Waverley gives it a lower cost per mile than any other automobile, gasoline or electric.

The noiselessness, simplicity, cleanliness and economy of the Waverley Electric are daily increasing its well-known prestige. No other electric is so stylish or so durable. No other vehicle, horse-drawn or power driven, is so thoroughly dependable.

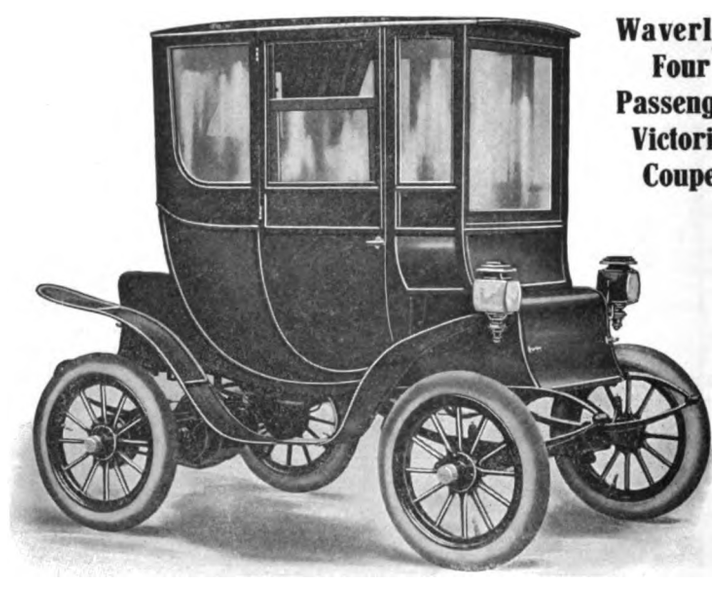
The sales have been increasing by leaps and bounds for several years.

The Waverley Electric for the coming season will be even better than it has been, and an even better proposition for good dealers.

The sales will be pushed as they they have never been pushed before.

Now Is The Time For The Dealer To Write About His Territory

The Waverley Co. Indianapolis, Ind.



Waverley Four Passenger Victoria Coupe

Popular All The Year Around.

This handsome vehicle gives splendid service when gas cars are hibernating and horses demand "humane" treatment. The Coupe Top is removable, giving a perfectly enclosed coupe for stormy weather, and a stylish open Victoria Phaeton for summer.

Price: With Removable Coupe Top, $2,150.

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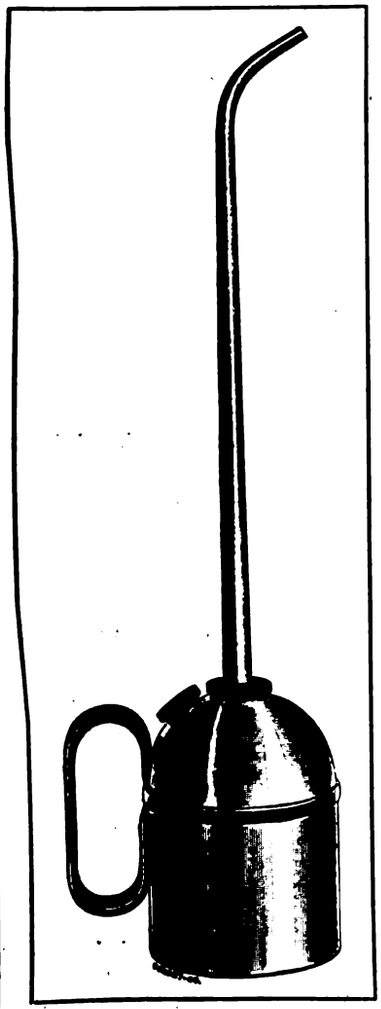
Out of the thousands of

"SWEDOH" SPRING STEEL RIMS

turned out by us, not one ever has been returned as defective. We make the statement on honor, and it ought to impress the manufacturer who is aiming to produce a quality product.

"Swedoh" Spring Steel Rims

are emphatically a quality product of one of the largest and best equipped mills in the country. They are used on most good automobiles and ought to be used on all automobiles.

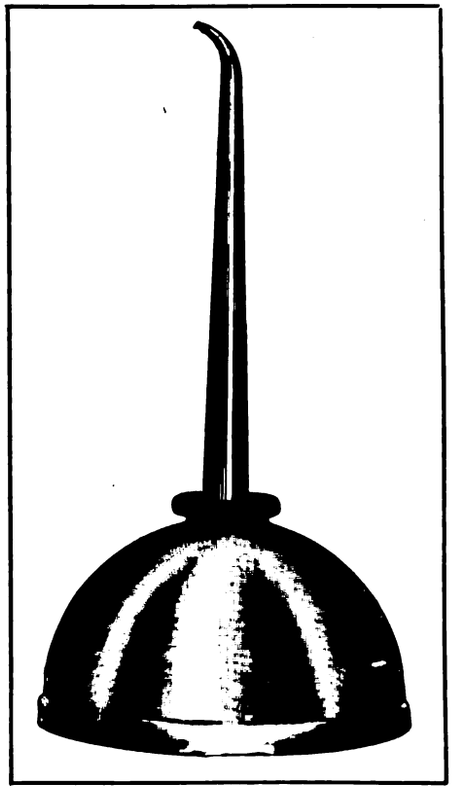


We also make from "Swedoh" steel

REAL OIL CANS

heavily copperized, of extreme durability and springiness that the ordinary oil can ought to be but isn't.

Our product includes all kinds of steel stampings and pressed work. If you want anything made from steel, we can make it—and "make good."



AMERICAN TUBE & STAMPING CO.

Bridgeport, Connecticut

NEW YORK OFFICE, 100 BROADWAY

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Premier In a Three-Fold Victory

In the fully Sealed Reliability Contest of 250 miles per day for four consecutive days, held under the auspices of the Chicago Motor Club the PREMIER scored three victories.

FIRST—The only Premier entered won the Standard Oil trophy for the lowest gasoline consumption over many cars that, with full passenger load, weighed at least 1,000 pounds less than did the Premier. THIS RECORD FOR ECONOMY IS NOTEWORTHY.

SECOND—The Premier made a perfect road score, finishing with all seals intact, in a contest which was most severe by reason of the amount of mileage per day and the condition of the roads traversed.

THIRD—The Premier was awarded a perfect score by the Technical Committee who made a most thorough and complete examination of all the cars at the finish of the run to determine any weaknesses which might result from the strenuous road performances.

The Premier's great record in the event just ended is a fitting climax to a season of Premier victories.

Again We Ask—Can You Beat It?

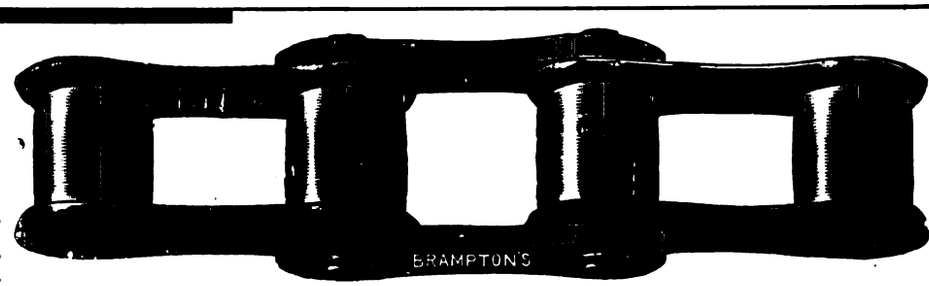
Send for Catalogue S.

Premier Motor Manufacturing Company

Indianapolis, Indiana, U. S. A.

Standard Manufacturers, A. M. C. M. A.

THE BRAMPTON MOTOR CHAIN



All side plates on both sides of the Brampton Chain are stamped "BRAMPTON."

LARGE SALES and SMALL PROFIT with thousands of satisfied customers is our best advertisement. **THE BRAMPTON CHAIN** is made of self-hardening Steel; the strongest Chain in the World. All parts polished; fits sprockets (that are properly cut) without friction.

Some of the other chains may look like **THE CELEBRATED BRAMPTON CHAIN** because some of the other chain makers began to copy the design and shape of the **BRAMPTON CHAIN** links in 1904. They have improved somewhat on their copied design from time to time until these chains now look more like the **BRAMPTON CHAIN** than ever before. These chains somewhat resemble the **BRAMPTON** in appearance, but the manufacturers of such chains have been unable to copy the material —self-hardening steel.

NO CHANGE IN THE BRAMPTON

There has been no change in the design, construction, material or finish of the **BRAMPTON MOTOR CHAIN** in the past ten years.—"ENUF SED."

PRICE

The price being equal, it's presumable you want the best, and full value for your money. In such cases, the **BRAMPTON FILLS THE BILL**, and the prices are the same to manufacturers, jobbers, dealers and consumers as any other chain of equal size. We have in stock chains to fit all American and foreign cars.

YOUR 1909 CAR

You can have the new car that you order fitted with the **CELEBRATED BRAMPTON CHAIN** if you order it that way. No extra cost to either you or the manufacturer. All standard sizes in stock to fit American and Foreign Cars at the same price as the other chains.

SPECIAL CHAINS TO FIT THE INDIAN MOTORCYCLE.

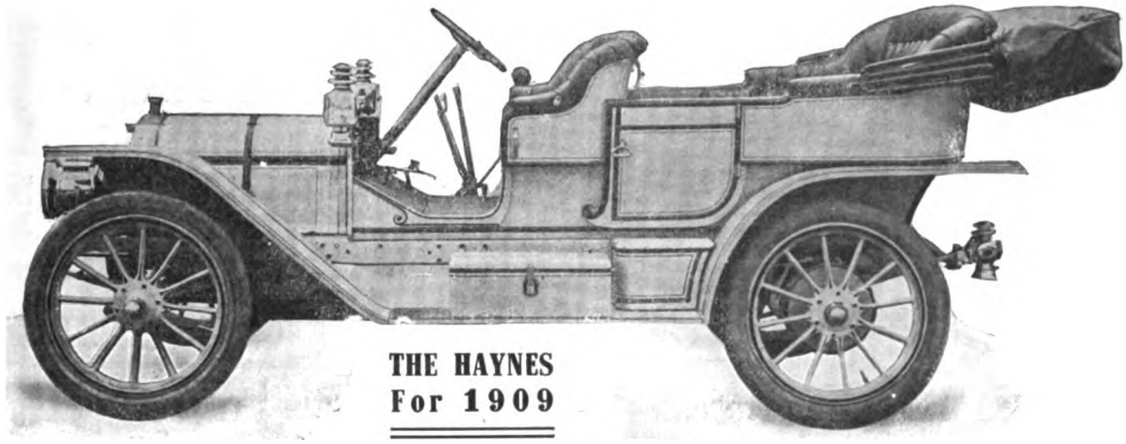
Agents wanted in unoccupied territory. Catalog on request.

Manufacturer, Jobber, Exporter and Importer

CHAS. E. MILLER, Main Office: 97-99-101 Reade Street, New York

BRANCHES: 54th St. and 8th Ave., New York. 202-204 Columbus Ave., Boston, Mass. 318-320 N. Broad St., Philadelphia, Pa. 227½-229 Jefferson Ave., Detroit. 1829 Euclid Ave., Cleveland, O. 1392 Bedford Ave., Brooklyn, N. Y. 824 Main St., Buffalo.

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45 H. P. $3,000

HAYNES

Victory!

TWO PERFECT SCORES AT CHICAGO

CHICAGO, Oct. 10.—In the great Thousand-Mile Endurance Run of the Chicago Automoblile Club, the two Haynes entries secured two of the five Perfect Scores out of 17 contestants. Several cars had more than one entry, but only the Haynes secured more than one Perfect Score.

This remarkable showing recalls the corresponding event of last year where the single Haynes entry won the only Perfect Score that was awarded.

There is real value in these tests. Any car in skillful hands with good luck can attain a perfect score in ordinary Endurance Runs where the operator is allowed to fuss with his car whenever it is necessary. But in these tests the car had to go through untinkered and pass a rigid examination of its condition at the end.

Haynes cars will always win in such tests.

For 1909 One Model, 45 H. P., $3,000. Four types of body.

HAYNES AUTOMOBILE COMPANY, Kokomo, Indiana

Members A. L. A. M.

Oldest Automobile Manufacturers in America

NEW YORK, 1715 Broadway CHICAGO, 1702 Michigan Avenue

LIVE AGENTS WANTED IN UNOCCUPIED TERRITORY

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THE SELDEN CAR FOR 1909

Enters upon its second year with a clean record. No "first year" car has ever earned a better reputation or made a better showing.

THE CAR OF MODERATE PRICE

$ 2 0 0 0

Touring Car **Roadster**
Limousine **Landaulet**

4 cylinder, 28-30 horsepower, shaft drive, selective transmission, metal body, pressed steel frame, excellent hill climber, fine finish and style, roomy tonneau, luxurious upholstery, easy riding, smooth running, economical in up-keep, in fact, a high grade car in every particular.

The "Silent Selden"

1909 MODELS READY IN SEPTEMBER

Agency propositions now ready. Send for catalog and specifications.

Selden Motor Vehicle Co.

ROCHESTER, N. Y.

Member A. L. A. M.

TIME WAS when tire worry spoiled much of the enjoyment of motoring and the motorist who footed the bills had no voice in the matter.

THEN CAME THE AJAX wrapped tread tire with its superior services.

AND NEXT THE AJAX 5,000 MILE GUARANTEE —If the user of Ajax tires fails to obtain 5,000 miles service from his tire, it is for us to worry—not him, and we make good.

WITH AJAX TIRES the tire problem resolves itself into a plain proposition. We know that they will do, and we offer you the best kind of an insurance for expressing your willingness to find out for yourself.

IS THERE ANYTHING MORE BUSINESS-LIKE THAN THIS?

Write for copy of Guarantee, stating what size tire you are using. Address Dept. A.

AJAX-GRIEB RUBBER COMPANY

GENERAL OFFICES: N. E. Cor. 57th St. and Broadway, New York
Factories: Trenton, N. J.

BRANCHES:

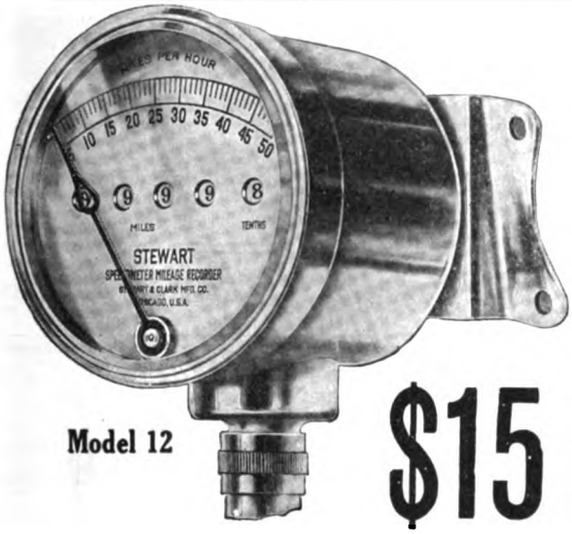
New York, 1776 Broadway — Denver, 1529 Cleveland Place
Boston, 819-a Boylston St. — Seattle, 1102 Broadway
Chicago, 1418 Michigan Ave. — San Francisco, 460 Golden Gate Ave.
Detroit, 743 Woodwood Ave. — Los Angeles, 1040 S. Main St.

Agents in all large cities.

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Stewart Speedometer

Complete with Enclosed Season Odometer $15



Model 12

$15

Some weeks ago we announced a startling Speedometer proposition for 1909 and we have kept our word. Last week's issue contained our full announcement for the 1909 season—the most beautiful line of speedometers ever shown, including **Model 12, at the unheard of price of $15 for a complete and guaranteed Speedometer and Season Odometer.**

This thoroughly high grade complete and guaranteed instrument is not to be confounded with ordinary $15 speedometers stripped of their essential season odometers, and without which no speedometer is complete, and which will be offered the trade in a makeshift pretense of meeting our impossible competition.

Don't be confused by offerings of even higher priced speedometers which may be equipped with ordinary external odometers, *not in any way the equal of the Stewart enclosed odometer.*

Model 12 is the handsomest 3-inch speedometer ever produced. Indicates speed up to 50 miles. Has an enclosed season odometer with capacity of 10,000 miles and repeat. The workmanship, materials and construction of this beautiful model are of the same high standard used in all our speedometers, and which has made possible our famous *FIVE-YEAR GUARANTEE,* which still stands unchallenged.

This model is *GUARANTEED ABSOLUTELY FOR FIVE YEARS,* and is equipped with our famous Stewart flexible shaft and patented swivel joint (*without which no speedometer can continue to give satisfaction*), exactly the same equipment used on our higher priced models. We make no exceptions; we sacrifice nothing to accomplish the lower price. Compare this costly equipment with the troublesome wire core shaft and non-swivel devices which are a part of the equipment of other speedometers.

A Thoroughly High-Grade Instrument

designed to meet the requirement of the small car. It is far better than any other speedometer, of any make at any price, as a trial alongside any other will prove. *Ready for delivery about Nov. 1st.*

SEND *for* CATALOGUE DESCRIBING *the* FULL LINE

Stewart & Clark Mfg. Co., 509 Diversey Boulevard, CHICAGO

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Matheson

1909
Prices Reduced $1,000
And the Reasons Why

Heretofore the Matheson Car has been considered the highest priced as well as the highest grade American car on the market.

Millions of dollars worth of these cars have been delivered to customers who could afford to pay the higher price for **the best.**

Many other purchasers have been persuaded that some of the lower priced cars have been "just as good." Matheson owners who have used other makes of cars have answered that question satisfactorily. Send for their letters, which we have done up in a book.

In order, therefore, to still **maintain the unequalled quality** of the Matheson Car and at the same time give customers this magnificent car at the price of the cheaper cars, the makers have figured that by **doubling the factory output** and selling at a much closer margin of profit, the price of the Matheson Car equipped with Touring, Landaulet or Limousine bodies, could be cut $1,000, and the same chassis, equipped with Roadster or Tourabout bodies, cut $650.

Accordingly, the Company's working capital **has been increased by** $350,000, and after October 11, 1908, the purchaser can buy a genuine Matheson Car, the very finest of all motor cars of either European or American make, **at the makers' former prices to the agent or dealer;** namely:

	New Price	Former Price
50 H. P. 1909 Touring Car	$4,500	$5,500
50 H. P. 1909 Roadster	4,350	5,000
50 H. P. 1909 Tourabout	4,350	5,000
50 H. P. 1909 Limousine	5,500	6,500
50 H. P. 1909 Landaulet	5,500	6,500

VICTORIES

The great string of Matheson victories in the important speed, hill climbing and endurance contests of the past seasons, in competition with the greatest cars of Europe and America, can leave no room for doubt that the Matheson car has no peer on any market to-day.

GUARANTY

Every Matheson is guaranteed for 365 days. (Notice that most other cars are guaranteed for 60 to 90 days only.)

MATHESON AUTOMOBILE COMPANY
Main Sales Office, 1886-1888 Broadway, New York City

STEVENS-DURYEA
NEW MODEL X

supplies the demand for a four-cylinder car, a little larger and more powerful than the Stevens-Duryea four-cylinder Model R, which has been discontinued. The owner of the Model X can feel that the well-known features of the Model R are embodied in his car together with the advantages of more room and power.

The Model X is an enlargement and refinement of the Model R, representing the most advanced ideas in automobile designs together with Stevens-Duryea construction and workmanship, which have been proven absolutely correct.

Price, with standard finish and equipment, **$2,750**

Send for New Model X Catalog.

STEVENS-DURYEA CO. Chicopee Falls Massachusetts

Member of Association of Licensed Automobile Manufacturers.

"LONG-ARM" TRANSMISSIONS

THREE speeds and reverse, selective types. The best of material and workmanship. Our experience in gear cutting and manufacturing Automobile Parts enables us to equal the best transmissions built. Let us figure on your requirements.

We also build a complete line of
AXLES, CLUTCHES
STEERING REACHES
HAND LEVERS, ETC.

The "Long-Arm" System Co.,
CLEVELAND, O.

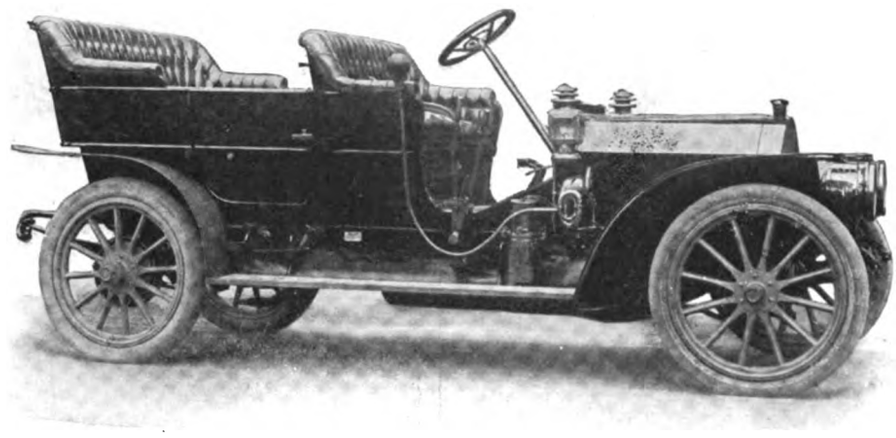
Sales Dept., THE AMERICAN DISTRIBUTING CO.,
American Trust Bldg., Cleveland, O.

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1909 Models of Gasoline Touring Cars (5 passengers), Runabouts (3 passengers), Roadsters (4 passengers), Limousines (7 passengers) and Landaulets (7 passengers); also Victoria Phaeton now ready for delivery

Columbia

Advance Circulars Giving Detailed Descriptions Mailed on Application



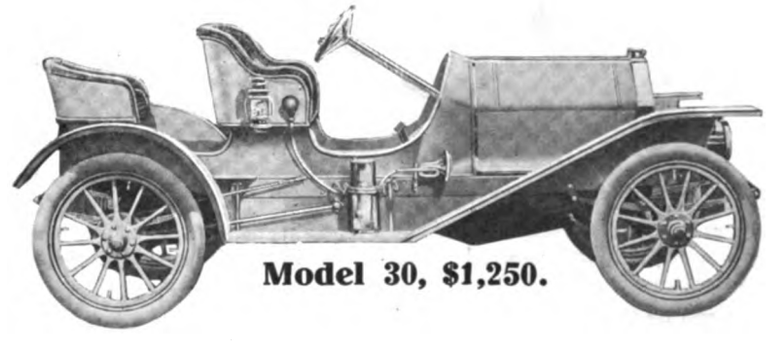
Agents Wanted in Unoccupied Territory

Mark XLVIII, 4 cylinder, 5 passenger, 29 H. P. Touring Car
Fully equipped as above, ready to run, $2,750.00

Manufactured by ELECTRIC VEHICLE COMPANY, Hartford, Conn.
Members A. L. A. M.

1909 Overland

"ONLY PEDALS TO PUSH"



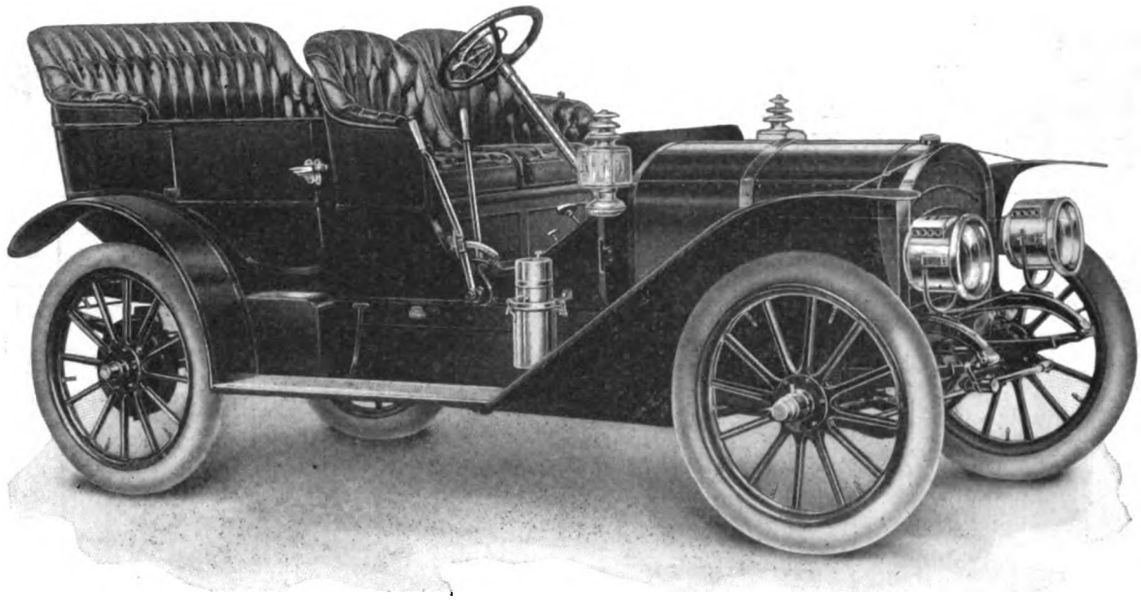
Model 30, $1,250.

The Simplest The Neatest The Quietest
The Most Reliable The Most Fully Equipped The Cheapest
Roadster on the 1909 market.

WRITE FOR SPECIFICATIONS TO

OVERLAND AUTOMOBILE COMPANY, Indianapolis, Indiana

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Model 34, Price $2,250

The Vital Features of This Car.

THE offset crank shaft and straight line drive, more than any other features are responsible for the unusual efficiency, the high delivered power and the wonderful flexibility of control of this four cylinder, five passenger

Rambler

Most automobiles can develop sufficient power at high speed, but the owner's greatest need is for power at slow engine speeds—power on the hills—in stretches of sand and mud.

The offset crank shaft and stright line drive give flexibility, allow more high gear work without overtaxing the engine; that means less gear changing; less clutch manipulation—therefore ease and economy of operation.

This car can be throttled down to operate smoothly and steadily on high gear at three miles an hour. Or it can run forty-five miles an hour.

These features besides those big wheels, big tires, long wheel base, accessible engine, safety starting device, reinforced tubular axle, finished parts of genuine mahogany, perfect brake control, and large luxurious body, make this a car of highest quality.

Ready for immediate delivery. Please write for details now.

Thomas B. Jeffery & Company, Main Office and Factory: **Kenosha, Wis.**

Branches and Distributing Agencies: Chicago, Milwaukee, Boston, Philadelphia, San Francisco.

Representatives in all leading cities.

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, October 15, 1908. No. 3

STUDEBAKER ABSORBS GARFORD

Final Steps Being Taken to Complete the Merger—New York Company Ended in the Arrangement.

No small amount of surprise will be occasioned in the trade by the announcement that the Studebaker Automobile Co., of South Bend, Ind., is to absorb the Garford Co., of Elyria, O., and the Garford Motor Car Co., of New York, which latter has had the eastern distribution of Garford cars. The final negotiations for the complete merging of the Garford in the Studebaker interests are being completed this week. This action represents another step in the big policy which the Studebaker company has entered upon, and which has already resulted in its undertaking the marketing of a large part of the E-M-F product both at home and abroad, and the production of buggy type motor vehicles, in addition to handling its regular line of Studebaker models.

For some time the Studebaker interests have been heavily represented in the ownership of the Garford Co.'s stock. The Studebaker chassis have also been produced at the Garford's plant, so that the relations between the companies has been very close. At one period the Garford plant at Elyria produced the Studebaker, the Rainier and the Cleveland chassis, but upon the subsequent withdrawal of both the Rainier and the Cleveland companies from this arrangement, the former to manufacture in its own plant, it was decided that the Garford Co. should market a model of its own. The Garford car was produced last year, and the Garford Motor Car Co. of New York was organized in July, 1907, with $300,000 capital, to handle its sale east of Buffalo. To head the New York company, William B. Hurlburt was chosen as president, under "inducements" of such attractiveness as finally to persuade him to relinquish the management of the Packard Motor Car Co. of New York, to go with the new enterprise. C. R. Teaboldt became his assistant, as secretary and treasurer of the company, and a large salesroom and warehouse on Broadway, near Forty-sixth street, New York City, was engaged.

Under the merger, this business is all to be acquired by the Studebaker interests, and will be handled from the Studebaker building, a little further up the street. In winding up the affairs of the company, terms that are satisfactory to Hurlburt and Teaboldt, with their associates, are being arranged. Inasmuch as Hurlburt and his organization are considered among the best equipped automobile men in the country, their early connection with another of the big automobile companies is not unlooked for.

Baker, of New York, in Bankruptcy.

Bankruptcy proceedings have been filed against the Baker Motor Vehicle Co. of New York, located at 1788 Broadway, New York City, and Judge Holt has appointed James N. Rosenberg as receiver. The liabilities are reported to be about $100,000, and the assets from $20,000 to $30,000. The company was organized on August 16, 1907, under New York laws, with a capital of $20,000, and Nathaniel Platt as president, to act as New York agent for the Baker Motor Vehicle Co. of Cleveland, O. Among the petitioning creditors are: Electric Storage Battery Co., $7,464; Diamond Rubber Co., $1,439, and Anthony G. Imhoff, $600.

Remy Opens an Eastern Office.

Headquarters in New York for the Remy Electric Co., of Anderson, Ind., have been established at 211 Thoroughfare building, on Broadway at Fifty-eighth street. H. J. Hinley is in charge, and will superintend the distribution of Remy magnetos and ignition apparatus in the East.

New York Store for Gray & Davis.

Gray & Davis, of Amesbury, Mass., have opened a branch in New York City for the sale of their lamps. It is at 377 Broadway, and will be under the direction of William H. Gray.

SUES ON "BASIC" BUGGY PATENTS

Action Against Two Makers of High Wheeled Vehicles—Sweeping Infringement Prosecution Threatened.

In the role of the Selden of the high-wheeled motor vehicle, the Success Auto-Buggy Mfg. Co., of St. Louis, Mo., has started suit for injunction against the W. H. Kiblinger Co., of Auburn, and the Economy Motor-Buggy Co., of Fort Wayne, Ind., and is threatening similar action throughout the field generally, where its patents are thought to be infringed. The petition filed by the plaintiff in the United States Court at Indianapolis, Ind., on the 12th inst., asserts that both the defendant companies entered into an agreement to pay the Success Company a royalty of $15 per buggy, but that the defendants have failed to carry out their agreement. An injunction is asked restraining them from further manufacturing of the vehicles alleged to be affected by the patents, and an order for an accounting is petitioned for.

Claims are made by the Success Company that it "holds several valuable patents on all the most important parts of high-wheeled motor buggies." To support its priority in the motor buggy line, the company points out that four years ago its product was placed on the market, and so distinctly was the vehicle of the real buggy type that the first photograph of the early machine discloses a whip-socket on the dash which the builder had accidentally overlooked. A vigorous and sweeping prosecution of alleged infringement, will be commenced immediately, it is announced.

Duerr Creditors' Meeting Called.

A meeting of the creditors of C. A. Duerr & Co., Inc., of New York City, has been called by Lindsay Russell, the receiver. It will be held at 2 p. m. Wednesday, the 14th instant, in room 1,314 of the City Investing Building, New York.

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In the Retail World.

Edward Wilkie has been appointed manager of the new Buick branch in Philadelphia, Pa. Quarters have been obtained at 235-237 North Broad street.

George B. Levy, who has been secretary and sales manager for C. A. Coey & Co., of Chicago, Ill., has gone in business for himself. His concern will be known as the Standard Automobile Supply Co., at 1428 Michigan avenue.

I. R. Gardinier is the president and general manager of the newly organized Franklin Motor Co., which is to handle Franklin cars exclusively in Utica, N. Y. The company's headquarters are in the Commercial Travelers' building.

Distribution of Continental tires in northeast and middle New York State will hereafter be made through the Albany Hardware & Iron Co., of Albany, N. Y. Both the tires and their accessories will be sold under the same terms as at the New York headquarters.

The sale of all the property of the bankrupt R. O. Williams Automobile Co., of Columbus, O., by the receiver, H. C. Moore, has been confirmed by Judge E. B. Dillon. The purchaser was M. F. Loofbourrow, and the price $2,039.57, did not include the previous sale of one automobile for $147.50 to another buyer.

Representation in Detroit, Mich., for the Studebaker cars has been brought about by the erection of a garage and retail salesroom on the property of the Everitt-Metzger-Flanders Co., on Piquette street. The full line of Studebaker gasolene and electric vehicles will be shown in connection with the E-M-F models.

Rambler Branch Moves to New York.

The distribution of Rambler cars which has heretofore been handled from the Philadelphia branch of Thomas B. Jeffery & Co. will from now on be made from New York, the branch having been moved over after four years in the Quaker City. Headquarters have been obtained at 38-40 West Sixty-second street, in charge of Manager Hutchinson, and from 75 to 100 cars will be kept in stock. The wholesaling territory to be covered includes Eastern New York, New Jersey, Delaware, Maryland, Virginia and that part of Pensylvania east of Altoona. The New York City agency for the Rambler will remain with the Homan & Schulz Company.

Altruistic Association Assigns.

Wholly unappreciative of the beneficent services which it was ready to perform for them, the automobilists of the country have let the Association of Motor Car Owners, with offices in the Times building, New York City, get into such straights that it has been forced to make an assignment. The concern was incorporated March 7, 1907, with a capital stock of $10,000, "to audit and adjust automobile expense accounts, furnish supplies, act as agent and to perform other services for automobile owners." Its highwater mark for membership was 300, but the tide soon went down, and a disagreement among the stockholders last month resulted in its bank account being tied up. An assignment to John H. Winans has been signed by Joseph D. Belasco, president, and Benjamin B. Dolaro, general manager. The assets consist of cash in banks, $1,603; accounts, $2,100, and office furniture, value not given.

Dunlop Punishing Price Cutters.

Fighting for the maintenance of price agreements with the jobbing and retail trade is being carried on across the Atlantic as well as on this side, the Dunlop Pneumatic Tire Co. having recently instituted a series of actions for violations of contracts governing the prices at which it products should be sold. One defendant jobber has been enjoined and required to pay $200 not only for cutting contract prices, but for letting dealers have the Dunlop goods without obtaining in turn written agreements that they would hold to the figures set by the company.

Goshen May Get the Crescent.

Already rich in the number of motor concerns that have either started up or are going to start in its borders, Goshen, Ind., has another prospect in view, the Crescent Automobile Co., of Detroit, Mich., having indicated that it will probably move into one of the town's vacated soap factories. The company, which is making the Marvel and Excelsior cars, has secured an option on the building and will make its decision within a few days. No bonus or stock subscriptions are asked.

Edwards Again with Hartford Rubber.

Teddy Edwards, after casting his fortunes with a newly organized rubber company, which later went into a decline, and subsequently acting as a traveling representative for a Hartford jobbing house, has returned to the Hartford Rubber Works Co., with whom he made his most conspicuous success as a salesman. He will cover his old territory.

Webster's New Marketing Method.

By an arrangement between the Webster Manufacturing Co. and the Randall-Faichney Co., of Boston, Mass., the latter company will hereafter market the Webster gasolene gauge, in addition to its own line of oil guns and accessories. One set of travelers will push the sale of the gauge and the Randall-Faichney products.

Adding to the G & J Factory.

An addition costing $50,000 is being made to the plant of the G & J Tire Company at Indianapolis, Ind. Although night shifts are still running, the present capacity of the factory is overtaxed.

The Week's Incorporations.

Pontiac, Mich.—Oakland Motor Car Co., under Michigan laws, increases capital stock from $200,000 to $300,000.

Chicago, Ill.—Mitchell Automobile Co., under Illinois laws, increases capital stock from $1,000 to $20,000.

New Rochelle, N. Y.—Jones Speedometer, The, under New York laws, with $100,000 capital; to manufacture indicators and devices. Corporators—J. W. Jones, G. L. Holmes and T. S. Barrett, New York City.

Rochester, N. Y.—Elbridge Engine Co., under New York laws, with $25,000 capital; to manufacture motors, vehicles, etc. Corporators—L. J. Seeley, Rochester; G. E. De Long, Syracuse; W. H. Salmon, Buffalo, N. Y.

Rockaway Beach, N. Y.—Queens Motor Works, under New York laws, with $3,000 capital. Corporators—John P. Levins, 1422 Madison avenue; Edward Heinz, 1514 Madison avenue; Francis W. Heitman, 127 Summit avenue, New York City.

New York City, N. Y.—Cherry Autocab Co., under New York laws, with $25,000 capital; to make, sell and rent automobiles. Corporators—L. Stein, L. L. Doblin, 583 Broadway; A. S. Gilbert, 310 West Ninety-third street, New York City.

New York City, N. Y.—City Autocab Co., under New York laws, with $250,000 capital; cab livery and garage business. Corporators—L. F. Braine and Henry H. Gardiner, 32 West Fortieth street; Lloyd Milnar, 452 Fifth avenue, New York City.

New York City, N. Y.—J. Jensen, Inc., under New York laws, with $10,000 capital; to deal in and manufacture automobile parts. Corporators—Charles Jensen, Astoria, L. I.; Edward B. Wilson, Summit, N. J.; Frank Lockwood, 17 East Fifty-seventh street, New York City.

Death of Harold B. Stillman.

Harold B. Stillman, of Hartford, Conn., but well known in Philadelphia, Pa., through his connection with the Foss-Hughes Motor Car Company, died in Hartford on the 12th inst. He had been ill with typhoid fever for four weeks. His connection with the automobile trade commenced several years ago with the Mercedes Import Company in Philadelphia, after which he joined the forces of the Foss-Hughes company. Latterly he directed a large part of the activities of the commercial vehicle department of the Knox Automobile company, of Springfield, Mass., as well. Although only twenty-four years old, he had won many friends and no little reputation in the industry. The funeral takes place in Hartford to-day, the 15th inst.

Jones Resigns from the Knox.

J. H. Jones, formerly chief engineer of the Knox Automobile Co., Springfield, Mass., has resigned. He will take up general practice.

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RATING SALESMEN BY FORMULA

Maxwell-Briscoe System for Measuring up the Selling Organization—Method of Stimulating Its Efficiency.

While the efficiency of a selling organization is best expressed in terms of the goods delivered during a given period, many a sales manager has puzzled his head over the manifest unfairness of this method of rating ability when applied without direct reference to such local conditions as are governed by the extent of possible prospects, the costs of making sales and the hundred and one other factors which go to make up the burden of a salesman's life. In order to circumvent this difficulty as well as to blend the complete distributing forces into a more harmonious body, Benjamin Briscoe, president and general manager of the Maxwell-Briscoe Motor Co., has devised a system of rating salesmanship by formula. This altogether novel method of arriving at an important conclusion is incorporated into a new selling system which is about to go into effect, and which comprises a complete mapping out of the whole country under the management of a complete triangular organization.

The work of each member of the force is rated on a percentage basis according to the new formula method. Regular reports are transmitted to the headquarters of the company at Tarrytown, N. Y., and from the data they contain the "rank" is made out periodically, and published in the official house organ. At various intervals the names of the leaders in rank are to be published, and following this, the successful ones are to receive successive rewards according to their respective worth. The details of the system as told by its originator are as follows:

"The country has been divided into nine great districts and over each is a district manager. Each district is divided into blocks and over each block is a block man. Each block is divided into small sections and in charge of these are the dealers. That is the framework of the organization, with the exception that in nine of the great cities are established branch houses, each overseen by a branch manager.

"The district manager is, of course, responsible to the company for his district and for the sales made there. He comes into close contact with the block men who travel around constantly and help the individual dealers in every way they can.

"Every week, the district manager receives reports from all his dealers as to their progress. These are forwarded to Tarrytown and there referred to a department of statistics, where the average of each man will be computed according to formula. . . . . These averages will be compiled in the following classes: District managers, branch house managers, block men, branch house salesmen, regular dealers, and certificate dealers.

"The first formula will be used to compute the averages in the first three classes. Let X be the manager's average. Then

$$X = \frac{\text{Gross Receipts}}{\text{Population in units of 100 persons}} \times \frac{\text{Number of cars sold}}{\text{Total Cost of making sales}}$$

"Take for example a district of 3,500,000 persons. If 400 cars are sold for a total of $350,000, and the cost of selling them amounts to $4,000, the formula will read as follows:

$$X = \frac{350{,}000}{35{,}000\ (00)} \times \frac{400}{4000} = \text{unity} = 100\%$$

This means that if a thousand dollars is received from every ten thousand persons and the cost of selling does not amount to more than $10 per car, the manager's record will be considered perfect. Take another case, a more probable one: suppose a district of 7,500,000 persons takes 500 cars and pays for them a total of $500,000, the cost of making sales amounting to $8,000. Then the formula will read:

$$X = \frac{500{,}000}{75{,}000\ (00)} \times \frac{500}{8000} = \frac{25}{60} = 41\tfrac{2}{3}\%$$

"The formula for computing the averages of salesmen comprises only two factors: the total receipts and the population. Let X represent the dealer's average. Then

$$X = \frac{\text{Gross receipts in dollars}}{\text{Population in units of five persons}}$$

"Take another suppositious case: supose in a city of 500,000 persons, the dealer sells cars to the amount of $100,000. Then the formula reads:

$$X = \frac{100{,}000}{100{,}000\ (500{,}000 \text{ in units of } 5)} = \text{unity} = 100\%$$

"Suppose also that a city of 600,000 persons takes $20,000 worth of Maxwell automobiles. Then

$$X = \frac{20{,}000}{120{,}000\ (600{,}000 \text{ in units of } 5)} = \frac{1}{6} = 16\tfrac{2}{3}\%"$$

In regard to the further operation of the system he continues. "First, the photographs of the leaders are to be published in 'The Co-Operator.' Second, the year is to be divided into three periods of four months and the leading district manager, the leading branch house manager, the leading branch house salesman, the leading block man, the leading certificate dealer of the whole country, also the leading regular dealer of each district, will receive a medal. If he qualifies a second time, a larger medal is his; if he qualifies a third time, his medals are made into a watch fob and he is presented with a gold watch to wear with it. And the men, classified in the same way, who lead for the whole year, will receive automobiles."

PONTIAC PLANT FOR CARTERCAR

Drops Its Old Name, Raises the Capitalization, and Moves from Detroit—The New 1909 Models.

Simultaneous with an increase in its capitalization to a total of $350,000, the Motorcar Co., of Detroit, Mich., has made application for a change in the corporate name, with the result that the concern will in the future be known as the "Cartercar Company." These changes are the accompaniments of the company's removal from Detroit to Pontiac, Mich., where a factory very much larger than the Detroit plant has been secured for the production of the various Cartercar friction driven models and the manufacture of a high wheeled buggy type of vehicle. The factory which the Cartercar Company will occupy comprises the brick and concrete buildings heretofore used by the Pontiac Spring and Wagon Works, which cover two acres of ground and are five stories in height.

The work of moving the factory from its present situation on Twenty-first and Baker streets, Detroit, to the new location, will be commenced at once, and it is expected that all of the machinery and equipment will have been transferred and set in place within a period not exceeding 30 days, after which work will be commenced vigorously with a view to making possible the quick delivery of the 1909 models. The fact that the Pontiac factory is located at the junction of the Detroit, Grand Haven & Milwaukee and the Michigan Air Line railroads is regarded as an important freight and transportation advantage, which will expedite both the receipt of material and the shipping of cars.

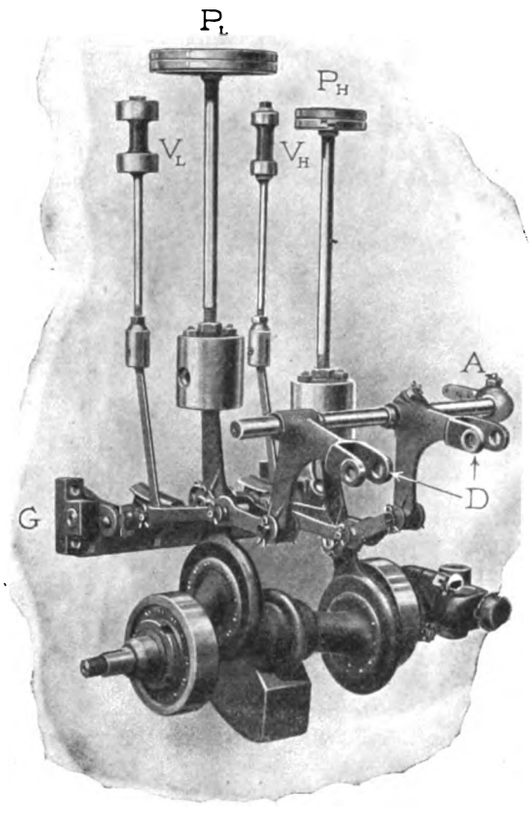
For the coming season, the product will comprise, among others, a new runabout, which is to be brought out under the designation of Model "K," and Model "G," a gentleman's roadster, which will be subject to a few refinements in finish and mechanical detail and will be continued for another season. Model "A" will be discontinued, to be succeeded by an entirely new touring car which is to be called the Model "H." In addition to these models the company will produce a high wheeled motor buggy, continuing the name "Pontiac" under which a former product of the Pontiac Spring and Wagon Works was offered.

Wichita's Show for Vehicle Dealers.

High-wheeled and other types of automobiles are to have a show by themselves at Wichita, Kan., during the annual convention of the the Southwestern Kansas and Oklahoma Implement and Hardware Dealers' Association. F. L. Wright, of Wichita, the secretary of the association, has arranged for the exhibition to take place in the Auditorium building, December 8-9-10.

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The Simplicity of
THE WHITE STEAM CAR



In the accompanying illustration are shown the working parts of the 1909 White steam engine. First of all will be noted the assembled crank-shaft which we showed, part by part, in last week's advertisement. Next we call attention to the high-pressure piston, P_H, and the low-pressure piston, P_L. Each stroke of each piston, up or down, is a working stroke. It will thus be seen that, as regards continuous application of power, the two-cylinder White engine is equivalent to an eight-cylinder gasolene engine of the usual four-cycle type.

The valve construction of the White engine is of extreme simplicity. There is but one valve for each cylinder, V_H being the valve for the high-pressure cylinder and V_L the valve for the low-pressure cylinder. The valves are of the balanced type—that is, the steam pressure is the same on opposite sides. Therefore, the valves do not work against pressure and the power needed to operate them is practically nothing. The valves are driven from the connecting rods by means of levers, as shown in the illustration. The engine is reversed and the "cut-off" is altered by simply tilting the guide, G. Those who are familiar with the valve mechanism of the gasolene engine will appreciate that the White construction is by far the simpler.

Write for circular containing details of the new White cars.

THE WHITE COMPANY

CLEVELAND, OHIO

NEW YORK CITY, Broadway at 62d St.
BOSTON, 320 Newbury St.
PHILADELPHIA, 629-33 N. Broad St.
PITTSBURG, 138-48 Beatty St.
CLEVELAND, 407 Rockwell Ave.
CHICAGO, 240 Michigan Ave.
SAN FRANCISCO, Market St., at Van Ness Ave.
ATLANTA, 120-122 Marietta St.

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Parkway Criticism and Performance.

Notwithstanding the drawback of poor attendance and the inevitable minor difficulties which are involved in the launching of any great undertaking, the Long Island sweepstakes of Saturday last must be regarded a successful and altogether fitting inaugural for the course which has been so long in prospect. Whatever may have been the interest which naturally centered about the event because of its own merit, however, it was upon a relatively small portion of the circuit traversed by the cars that attention was chiefly focussed. The first section of the Parkway to be completed was on trial. That the result amply justified practically all that had been predicted for it is a matter of great credit to its founders, as to those under whose active management it has been built.

During the brief period of initial practice drivers who had been over the track were loud in their protestations that its bridges were approached at too steep grade, and that the curves were not properly banked. It was said that cars of medium or short wheel base approaching these points at high speed were thrown upward by the abruptness of the grades, and startling tales were told of experiences which were alleged to have occurred in which even large machines had literally jumped clear of the course. Another ground for criticism, which at first sight appeared to be more reasonable, was that the roughened surface of the course was likely to prove extremely hard on tires. The uniformity of the surface eliminated the danger of punctures, it was said, but, against this, the rate of tire wear, it was thought, would prove to be disastrously high.

Judged by the incidents of the sweepstakes, wherein thirty-odd cars of every possible description were raced side by side on both the course and the highway, these objections appear to be practically groundless. Indeed, it was a remarkable coincidence that of the few mishaps which occurred in the race, none of moment should have taken place on the cement track. Even the tire troubles were confined chiefly to the road, and though repeated changes were made at the grandstand control, most of the wear seemed to have been occasioned by the inequalities of Nassau County roads. Skidding was practically unknown on the track, and the maligned bridges failed to throw any of the racers over, as it had been predicted they might do.

One criticism only appeared to the onlooker to be valid. The underneath crossings, where the cars must pass through short tunnels, allow none too wide a margin for two machines to pass. In the event of one car overtaking another at one of these points an involuntary swing of the steering wheel, or a slight amount of side slip, might cause a serious disaster. This danger is augmented by the observed fact that some of the machines, instead of answering to guidance promptly, tend to slide at the forward end, the inertia of the vehicle being so great as to overcome in part the traction of the front wheels. This defect, however, may be chargeable rather to defective weight distribution in the machines themselves than to any fault of the course.

The cause of the Long Island Motor Parkway has been advanced as that of a private boulevard rather than a race course—hence the name chosen for it. The section completed, it must be admitted, presents few of the scenic possibilities which are a probable necessity to a popular motoring ground, though stretches yet incomplete probably do not possess this drawback. The flat, uninteresting countryside in the immediate vicinity of the grandstand, while admirably suited to a speedway, offers small inducement to the potterer. Hence, whatever the local attractions of other sections, it is likely that this end of the course will always remain rather more a speeding ground than anything else. That, however, cannot be construed into a crucial defect in the scheme as a whole.

Circular Units in Engine Rating.

A new turn is given to the subject of motor rating by the suggestion of Frederick Purdy that an extension of the electrical unit of the circular mil might be made adaptable to cylinder dimensions and even to such quantities as the sizes and areas of valves and ports. To the lay mind the scheme probably appears formidable in the extreme, as, indeed, might well be the case were it not considered rather in the light of a method of abreviation than an innovation pure and simple. Such, indeed, it really is. For the proposition is that of comparing, not piston areas and cylinder volumes, but the squares of diameters and these in turn multiplied by the strokes. Eliminate the term circular mil or inch or whatever, and merely bear in mind a constant numerical multiplier—always understood—and the principle is the same. The suggestion, then, is merely that of discarding from all ordinary comparisons a factor which is common to both terms of the ratio. The idea is that of simplifying a fraction by reducing it to its lowest terms.

So far as that alone is concerned, there appears to be small ground for objection to the principle or its application. Generally adopted, it would be of undoubted advantage, just as advantage lies in the adoption of any system of simplification Those who have wrought for the adoption of metric measure in shops where English is the rule, however, or who have striven to acquire the language of a new science, are well able to appreciate the probable confusion resulting from an attempt to alter the accepted method of expression. The idea is commendable. The probability of its acceptance, however, is not strong.

What is more to the point is the further suggestion that motors ought to be rated not on the basis of a common piston speed,

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but with direct regard to the speed range for which they are designed. Until all motors are designed under common formulas, no single speed factor can be absolutely fair to all. The single compromise being in some instances so far out of the way as to yield results which are almost absurd, it is proposed to establish two speeds, one high and the other low, which may be supposed to mark off the probable limits of effective power production. Carrying out the idea to the extent of supposing two such limits to be established by a number of engineers of repute in convention, it is plain to see that that nuisance, the hyphenated horsepower, which it is so desirable to do away with, would be more firmly fixed than ever. As both of the values would be established on a uniform and presumably scientific basis, however, the objection would carry less weight than does that against the present usage.

Somehow all the prophets who foretold the death of racing interest in so far as the motor vehicle is concerned, a year or so ago, appear to have been confounded. During the past summer what may—or may not be termed a revival of racing interest has taken place and with increasing zest, race after race has been run. Just at present the "season" is at its height, and all over the country events of this sort are taking place. Though the attitude of the public toward these demonstrations is admittedly not what it was a year or two ago in many respects, yet popular support is not lacking. The past week has been signalized by a greater number of "big" events of either local or general moment than perhaps any other week in the history of the sport. That two cities in such close proximity as New York and Philadelphia should have had two as important races as the Sweepstakes and the 200 miles contest in Fairmount Park is remarkable.

The sub-division of the duties of the Racing Board of the American Automobile Association and installation of a part of them under the management of the newly constituted Contests Board, is an interesting, if logical development. Whether the lightening of its burden will encourage the older body to the manifestation of a new sort of stamina and acumen in the handling of the "national" events to which its attention must now be confined, will be equally interesting to observe.

A. A. A. MAKES READJUSTMENTS

Racing Board's Duties to be Confined to Speed Contests—Technical Board Renamed Contests Board.

Despite the promise of revolutionary developments, the regular quarterly meeting of the Board of Directors of the American Automobile Association, which was called for Friday, Oct. 9, failed to provide the expected sensation. Instead of a startling conclusion on the question as to "whether the fiscal plan should not be materially modified" and made to "include a moderate fee for the clubs instead of graded dues," an unexpected arrangement was put into effect whereby the status of the Racing Board is altered, so that that august body, though retaining its name, will hereafter "have charge of racing and speed contests." The Technical Board hereafter will be known as the Contests Board, and will have charge of all contests other than racing and speed contests.

This action was included in a series of amendments to the bay-laws which were proposed in President Hotchkiss's report. This was read in the absence of the president himself, First Vice-President L. R. Speare, of Boston, presiding. The text of the amendments follows:

"First—That the Touring Board be hereafter called the Touring, Information and Maps Board, and that it have its headquarters in New York City.

"Second—That the Technical Board be hereafter called the Contests Board, and that it have charge of all contests other than racing and speed contests; for instance, all touring, technical, endurance and economy contests, as well as hill climbing.

"Third—That the Racing Board retain its name, but hereafter have charge of racing and speed contests."

A further amendment provides for the representation of each affiliated club by directors to be nominated from such clubs by the respective state associations. This increased representation, besides doubling the size of the directorate, is planned to arouse local interest among the individual clubs and also to strengthen the position of the national body itself.

Among the plans for the forthcoming year is a scheme for holding a competition for commercial vehicles, incentive to the establishment of an annual contest of this sort being furnished by the offer of Powell Evans, president of the Automobile Club of Philadelphia, to donate to the A. A. A. a $2,000 trophy for the purpose, under a suitable deed of gift. The offer was accepted on behalf of the association.

Provision for the representation of the A. A. A. at the forthcoming "Great White Show" of the American Motor Car Manufacturers' Association was made in the acceptance of an offer made by that body to allot space to the association, in addition to which it was decided to hold open meetings during the period of the show. The executive Committee having previously referred to the president and secretary the solution of the California situation, wherein two state bodies are in existence, the matter was clarified by the adoption of a by-law amendment legalizing such a condition in a State having such large territory. R. D. Inman, of Portland, Ore., was elected a director, representing the Portland Auto Club.

COMING EVENTS

October 14-16, Cleveland, O.—Cleveland Automobile Club's reliability run.

October 15, 16, 17—Michigan State Automobile Association's endurance run.

October 17-18, Los Angeles, Cal.—24 hours race meet, Ascot Park.

October 17, Hartford, Conn.—Automobile Club of Hartford's hill climb, Avon Mountain.

October 17, Kansas City, Mo.—Automobile Club of Kansas City's race meet, Elm Ridge track.

October 24, Long Island—Vanderbilt Cup contest.

October 31, Philadelphia, Pa.—Automobile Club of Philadelphia's sixth annual tour for the Brasier Cup.

November 23, Savannah, Ga.—Automobile Club of America's 200 miles light car race.

November 26, Savannah, Ga.—Automobile Club of America's (New York), 400 miles race.

New Date for Fort George Climb.

Most of those who were involved in the Outlaw Motor Racing Association are now concerned in the promotion of a hill-climbing contest which it is planned to hold on Election Day, Nov. 3, and in which they are endeavoring to embroil sundry others whom their affairs do not materially interest. Having applied for permission to run the contest on Fort George Hill on Oct. 17, and the permission having been refused by the Mayor of New York City on a technicality, a second application was drawn up and presented to the Board of Aldermen on Tuesday of this week, and was favorably passed upon. In the matter of sanctions, the Automobile Club of America was first appealed to, the original announcements of the affair being tagged with an "international" label. The A. C. A., however, with rare wisdom decided that as the event was of purely local character, its recognition must be gained at the hands of the American Automobile Association. Accordingly that body will be petitioned by the New York Automobile Trade Association, Inc., which is the promoting organization. Entries will close on October 31st.

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MOTOR PARKWAY'S OPENING RACE

Five Classes of Stock Cars in the Sweepstakes—Winners Make Fast Time—Lytle's Great Speed.

Almost a crowd of people saw the Long Island Sweepstakes, for stock cars, which on Saturday, the 10th inst., inaugurated the actual use of at least a portion of the new Motor Parkway. The expected stampede of visitors did not occur, and many of the lengthy special trains which the Long Island Railroad had waiting in rows with steam up, did not start for the reason that they were not needed, while the early morning procession of motor cars on the roads leading to the course was very slim.

The race or races—all the events being run at the one time—started at 9 o'clock in the morning and lasted well into the afternoon. Hardly a hint of anything suggesting the excitement of a Vanderbilt cup race was provided, with the exception of Herbert Lytle's rounds at terrific speed in the Isotta, with which he won the big event of the day. His average of 64.25 miles per hour exceeded the average rate made in any of the Vanderbilt cup races, and the way he drove gave all the appearance of the speed with which the timers credited him. Recently acquired marital responsibilities may have influenced Lewis Strang to caution, for while great things were expected of him, he drove his Renault carefully and unpicturesquely to a belated second position.

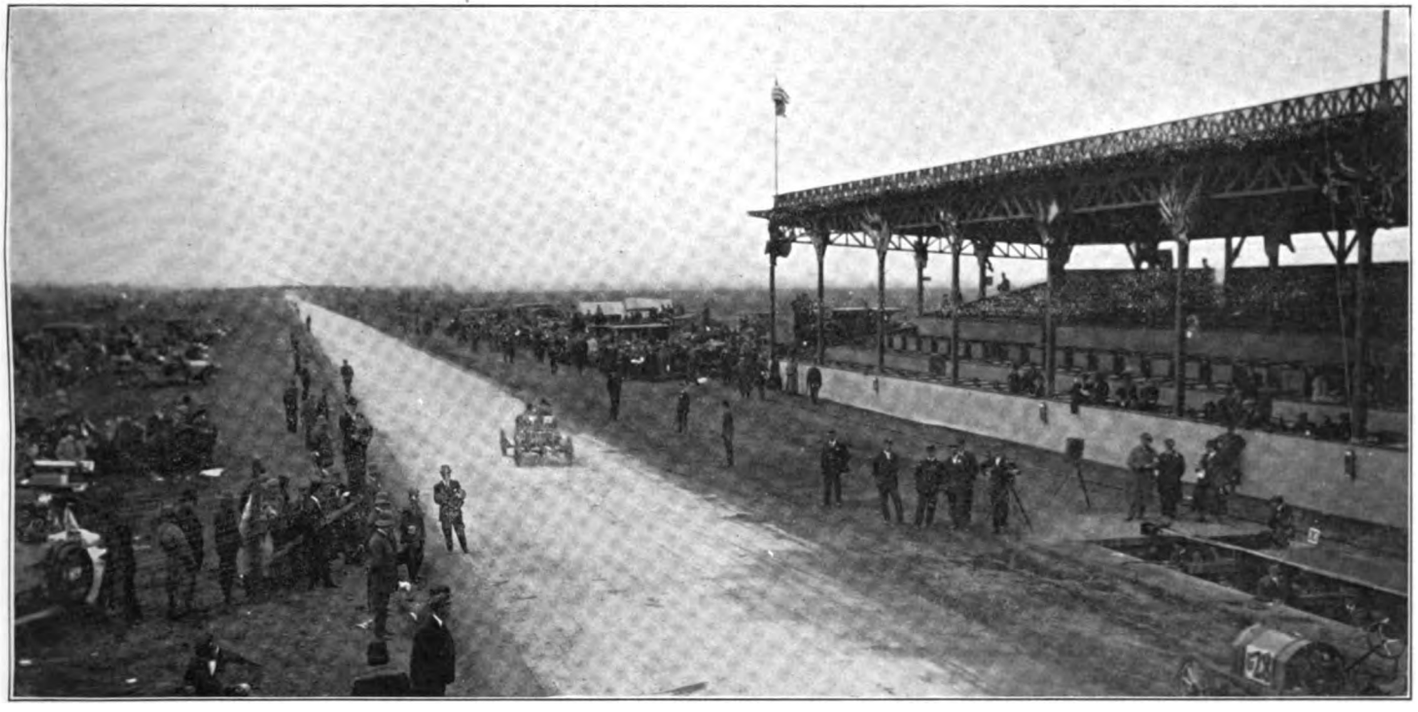
Of the 33 machines that lined up, the little cars were sent off first, at 30 seconds intervals. There were eight of them, competing in the Nassau sweepstakes, for cars selling at $1,000 or under. Their task was to go four laps, about 93 miles. Five minutes separated each bunch, and at 9:05 the first of the Jericho sweepstakes contestants, listed at from $1,001 to $2,000, was started. Seven competed in this class, to go 6 laps, or about 140 miles. Next came the seven Garden City sweepstakes cars, listed at prices between $2,001 and $3,000. They were required to go eight laps, about 187 miles. Only four contestants lined up for the Meadow Brook sweepstakes, for cars worth from $3,001 to $4,000. Nine laps was their portion, a distance approximating 211 miles. Last of all came the seven biggest cars, selling for $4,001 or more, to battle in the Motor Parkway sweepstakes. They had 10 laps to go, making 234.6 miles, the course being 23.46 miles, with about 8 miles of it on the Parkway and the balance dirt roads.

How it would all work out nobody could guess, as the bigger cars were certain to overtake their predecessors, and the way they set out from the starting line made it look as though they would do it quickly. Two of the first cars to start completed their first lap, however, without being overtaken, but thereafter the contestants in all the classes were soon strung around the course in one grand mixture. Subsequently the "Nassau" cars completed their four laps and the "Jericho" contestants their six laps, and when the 15 machines represented in these two groups had been flagged off and withdrawn, things were thinned out so much that the eight, the nine and the ten lap cars could go at top speed without fear of stumbling over the little fellows. The winners in these latter groups were finally winnowed out by the scorers, and the cars still running on the Parkway section of the course were permitted to finish at the grandstand.

Accidents were few, a broken arm being the limit of injury to those in the contest, although two spectators escaped less easily. The latter were struck with tools that were jounced from a car and which struck them in the head with serious effect. One car was overturned, while a broken axle, a few cases of running into the fence, and numerous minor mishaps that came more properly under the head of car trouble, prevented a total of 12 of the 33 starters from finishing. One car that was still running, was called off at the conclusion of the race.

Remarkably enough, though constituting more than a third of the total course, the Parkway was not the scene of any mishap. This fact encouraged the belief on the part of those responsible for its construction that it was in every way as safe as it had been planned to be, and that the adverse criticism of the abrupt grades forming the approaches to the bridges over the intersecting roads and of the sinuous turns, which had been rife up to the time of the race, was completely answered by the facts. Although private tests of the Parkway had been satisfactory, the Sweepstakes afforded the first service demonstration of how the cars would take the rises and the banking on the turns. As the contest contained such a variety of weights, speeds and power among the competitors, the affair gave about as complete a try-out as could be devised.

The idea that the hard concrete with its finely corrugated surface, which latter was obtained by "brushing" with steel brooms while the grouting was still in a paste-like state, would prove extremely severe on



THE MOTOR PARKWAY, THE GRANDSTAND AND "THE CROWD"

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tires seemed to fail of verification. The general opinion at the conclusion of the race was that the concrete, while presenting a surface like a magnified file in appearance, was really very easy on tires. Inasmuch as the Parkway is new, its freedom from dust may later be diminished by the dirt which will gather in the small depressions between the fine surface ridges, but during the sweepstakes the cars raised practically no dust whatever.



WAGNER CHECKS A FALSE START

By reason of the interest created through the fact that so many well known makers were competing with stock products and because of the curiosity as to how the Parkway itself looked and would bear the cars, the majority of the spectators felt well rewarded for their excursion. Conversely, as showing the merits of the competing machines, regardless of whether they won or not, and demonstrating the virtues of the Parkway as a special automobile road, the five-in-one Sweepstakes race was as conspicuous a success as had been promised.

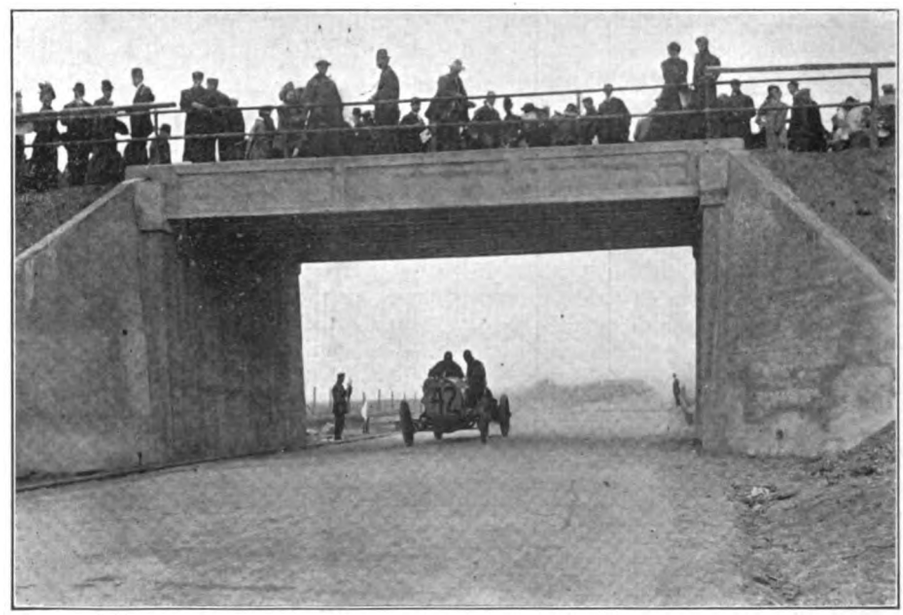
Approach toward the riotously chromatic grandstand, either across the flat fields on foot from the special trains or by motor car, gives the impression that the biggest thing in connection with the whole Motor Parkway must be the bill for wire fencing. At a distance the gray wire strands are seen like a mist, particularly heavy at the grandstand's back and extending into the distance on both sides along the brilliantly white streak of concrete roadway. Nearer view shows the fencing enclosing numerous separate paths and windings to the grandstand itself, to the parking spaces, and the herding grounds for the vulgar, non-paying throngs. Some of the visitors with cars, who had paid $10 for parking space, were not able to find their way in, and in desperation apparently resorted to vandalism, using wire cutters to get through.

The 9 o'clock starting hour was easy for everybody, and even the misguided enthusiasts who had taken the 5:30 a. m. special train to the stand were subsequently reconciled to the fact that for lack of passengers it had not started until nearly 7 o'clock, since, as it was, they had a long, cold wait after arriving. For an hour before the start the space in front of the stand was filled with cars, the contestants being lined up before their respective repair pits for final tuning and preparation. As the starting time drew nearer, the machines bearing odd numbers, beginning with No. 1, were put Indian file on the right of the course, back of the line, and the even numbers on the left.

Bearing a big chronometer in its wooden box, one of the timers assisted Starter "Fred" Wagner, the latter counting off the last ten seconds to each driver, with a concluding slap on the back and a shout of "Go!" The formation enabled each car to come up promptly, so that there were no delays. In fact, some were a little too hasty in getting off, and "Wag" had to yell a furious "Come back" above the roar of the engines, while the moving picture men cranked away on the machines that they pointed at the scene.

It was predicted by many that the more powerful cars would arrive first, but the small No. 3 Buick, of the "N" class, was shortly seen skipping over the distant bridges and rounding into the home stretch all alone. It was cheered heartily. The No. 1 Mitchell, which had started first of all, next hove in sight, and was quickly followed by bigger cars in the other classes, after which the alphabet was badly jumbled, with "M," "G," "P," "N" and "J" cars coming by in mixed order.

As the race progressed it became evident that the placing of the supply pits directly in front of the grandstand was an excellent thing in centralizing the interest at that point, and giving spectators the opportunity of seeing one of the real features of an automobile race without having to go around the course on the chance of being at an individual supply station just at the time that a car comes in. The roadway in front of the stand is much wider than on the regular parkway, not only to allow plenty of room when machines that have stopped are standing at their respective sup-



FREE "GRANDSTAND" ON OVERHEAD BRIDGE

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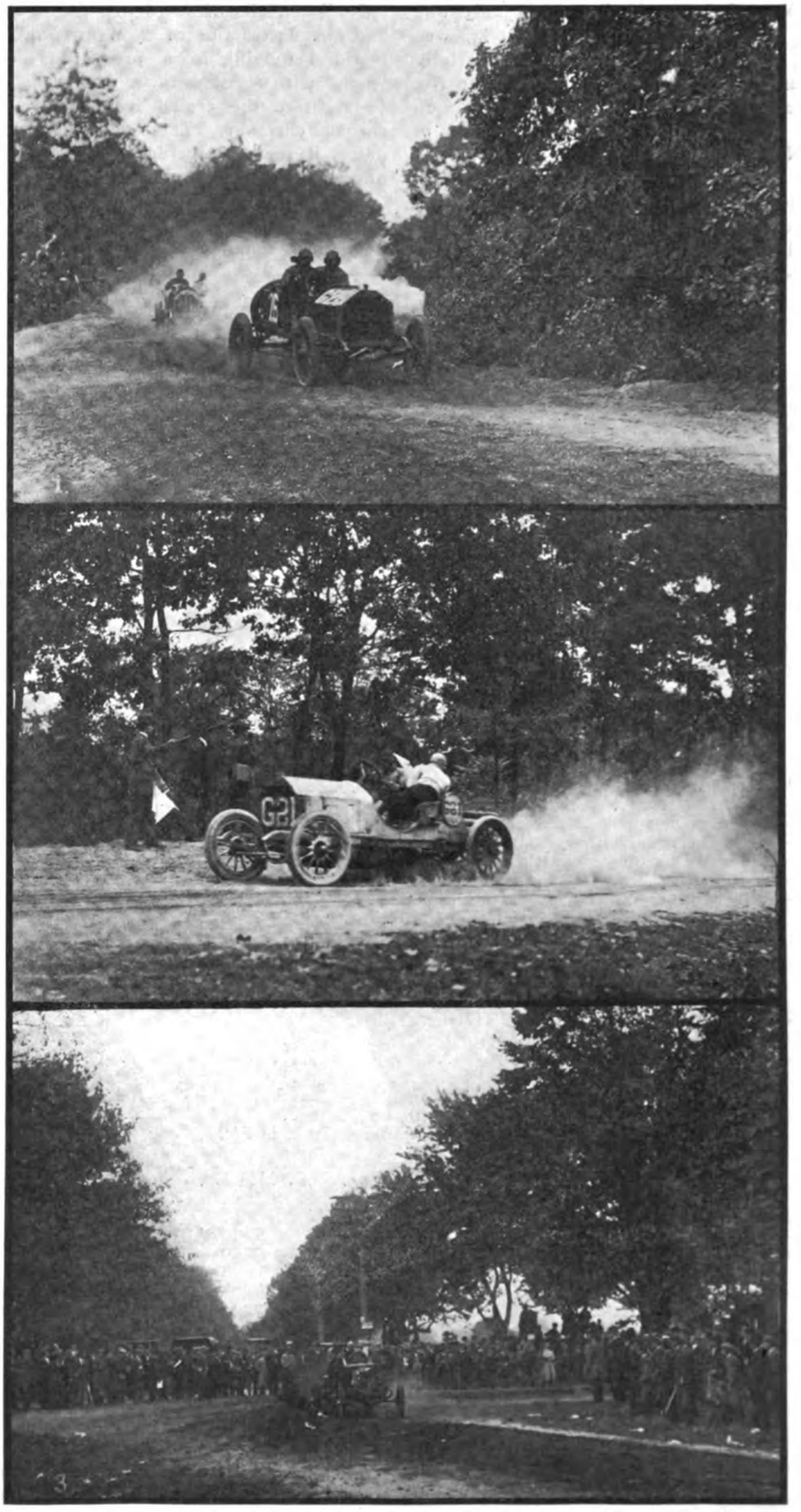
ply stations, but also to invite cars to pass each other there. By some strange freak, however, there were only two instances of such passages near the stand, and the difference in their class and speed robbed the incidents of any thrill. It was in the stopping of the cars, to replenish oil and fuel or to make repairs, that most entertainment was found.

Whenever a car stopped, the pits resembled a spirit cabinet when "Little Bright Eyes" waves a tambourine or other objects over the top, or mischievous "Joe, the Dwarf," tosses out slates, pads and guitars; for all that could be seen were the mysterious hands from the depths, reaching upward with tires, wrenches, fuel cans, and in one case even a cylinder. Only the driver and mechanic were allowed to work on a car, and snatching the supplies that would so magically appear, they would labor hard to get away again. At $100 and $200 apiece per race, the pits should make money for the Parkway.

Soft earth had been placed at the point where the cars halted, and as it began to loosen and get dusty, "Willie" K. Vanderbilt, Jefferson DeMont Thompson and other notables responsible for the Parkway took a hand at watering it down with hose, being "snapped" in the act by many cameras.

Meanwhile, Wagner with a green flag was informing some of the passing cars that it was their last lap, or with a checkerboard flag was calling off those who finished their distance. Chairman Thompson's prism binoculars were brought into requisition to pick out the cars as they appeared, so the right ones might be flagged. While suitable for this service, they were by no means powerful enough to enable Thompson to see Robert Lee Morrell, although the two gentlemen were in close proximity a number of times. Humerous complaint was made by the drivers that they could not tell Wagner's green flag from his flaring green handkerchief, but happily no serious confusion was caused by the similarity.

In the Nassau sweepstakes, the No. 3 Buick, driven by Easter, was the first to get the checkered flag for having finished the four laps, with F. F. Cameron's N. 4 Cameron in second place, and Olney's No. 1 Mitchell third. The winner's fastest lap for the 23.46 miles was 30:55. The 6-lap Jericho sweepstakes brought in Burns's No. 11 Chalmers-Detroit as the winner, with Ainslie's No. 16 Chalmers-Detroit in second position, and No. 18 Mitchell, driven by Zirbes, third. The No. 16 made the fastest lap in its class, in 24:57. Coming from Trenton, N. J., as an "unknown," the No. 28 Sharp Arrow, driven by its maker, W. H. Sharp, created great surprise by winning the 8-lap Garden City sweepstakes from better-known cars, making faster average time than the winner in the class above it. The best lap was 24:03. Second place was won by No. 27 Knox, with Bourque driving, while Miller's No. 21 Stoddard-Dayton landed third.



SKIDDING ON TURNS. 1, ROBERT BURMAN, BUICK. 2, ALBERT MILLER, STODDARD-DAYTON. 3, ARTHUR SEE, MAXWELL.

Between the Rainier, No. 32, owned by Mrs. Cuneo and driven by Disbrow, and the No. 35 Allen-Kingston there was a long battle, the latter finally proving victorious in the 9-lap Meadow Brook event, its fastest lap being 23:58. Hilliard's No. 34 Lancia was third. With one tire flat, Lytle finished early in the 10-lap Motor Parkway group,

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his No. 42 Isotta having made only one stop, for fuel and oil. His fastest lap was 21:11 and his average 21:55—a wonderfully consistent performance. Strang in the No. 46 Renault was about 10 minutes lower, getting second, which Lechleiter brought in the No. 47 Itala third.

One of the Motor World's war correspondents labelled with a blue press badge wandered over to the "S" turn, half-only disaster he witnesed was the smashing and dire destruction of a "Manhattan" pool board, belonging to a prosperous-looking "gent" with a red necktie, who was trying to separate the crowd from their hard-earned currency. This refined gambling game, it seems, angered a citizen, who at once proceeded to demolish the layout.

As for the contestants, most of the cars, big and little, took these obtuse turns at very near maximum speed. There was

mers-Detroit "Bluebird" and numerous others would start to skid their rear wheels toward the outside when rounding the bend, but after swinging but a few inches from their course the inclined banking would hold them in proper balance and not permit the dangerous side-swipe that would occur on an ordinary road. Obviously the certain degree of roughness of the concrete surface gave the tires good traction, and did not allow them to slide in the same manner that

MOTOR PARKWAY SWEEPSTAKES, 234.6 MILES.

No.	Car.	Driver.	1	2	3	4	5	6	7	8	9	10	Total Time
P42	Isotta	Herbert Lytle	22.17	43.42	65.06	86.25	107.49	129.00	154.09	176.09	197.30	219.10	3:39:10
P46	Renault	Lewis Strang	22.17	46.26	69.34	92.35	115.29	138.10	160.37	183.15	205.48	230.25	3:50:25
P47	Itala	G. Lechleitner	25.5(	51.23	76.30	101.10	126.11	153.02	178.21	203.23	228.15	253.09	4:13:09
P43	Simplex	F. Lescault	34.3	58.27	81.22	111.22	135.02	158.20	181.45	205.12	228.57	256.21	4:16:21
P41	Chadwick	W. Haupt	26.13	50.35	75.43	103.16	127.51	154.32	192.49	220.24	244.03	267.57	4:27:57
P45	Knox	Chas. Basle	22.46	71.01	137.03	173.30	214.23	252.36					
P44	Hotchkiss	J. Kilpatrick	23.46	47.19	70.55	93.58	116.43						

Best lap, Isotta, lap 6, 21:11. Winner's average speed, 64.25 miles per hour.

MEADOW BROOK SWEEPSTAKES, 211.14 MILES.

No.	Car.	Driver.	1	2	3	4	5	6	7	8	9	Total Time.
M35	Allen-Kingston	H. Hughes	25:3	54.30	79.11	103.19	127.17	164.15	188.42	214.23	240.47	4:00:47
M32	Rainier	L. A. Disbrow	27.4	55.27	83.16	110.16	137.20	164.13	190.54	217.32	243.42	4:03:42
M34	Lancia	W. M. Hilliard	29.4	58.35	86.45	114.52	149.09	177.48	206.05	235.08	264.15	4:24:15
M36	Rainier	Axel Peterson	28.1	75.14	104.09	130.12	156.14	182.14	208.02	233.24		

Best lap, Allen-Kingston, lap 5, 23:58. Winner's average speed, 52.6 miles per hour.

GARDEN CITY SWEEPSTAKES, 187.68 MILES.

No.	Car.	Driver.	1	2	3	4	5	6	7	8	Total Time.
G28	Sharp Arrow	W. H. Sharp	24.48	49.19	73.45	97.56	121.59	150.05	174.47	199.34	3:19:34
G27	Knox	W. Bourque	39.33	87.13	115.11	142.30	168.09	197.46	222.32	249.11	4:09:11
G21	Stoddard-Dayton	A. R. Miller	38.39	58.06	84.25	109.37	162.22	188.59	214.54	251.52	4:11:52
G26	Buick	R. Burman	23.40	53.29	81.45	106.41	130.48	154.09	191.01		
G25	Stoddard-Dayton	H. Tuttle	29. 7	67.19	93.33	120.02	147.53	193.04			
G22	Chalmers	L. B. Lorimer	24.38	62.13	104.34	130.21					
G24	Palmer-Singer	Ray Howard	23.22	46.29							

Best lap, Palmer-Singer, Lap 1. in 23:07. Winner's average speed, 56.4 miles per hour.

JERICHO SWEEPSTAKES. 140.76 MILES.

No.	Car.	Driver.	1	2	3	4	5	6	Total Time.
J11	Chalmers	W. R. Burns	29.10	57.07	87.41	119.08	150.31	182.36	3:02:36
J16	Chalmers	G. J. Ainslie	39.26	64.23	96.28	128.52	161.25	192.00	3:12:00
J18	Mitchell	F. Zirbes	49.01	87.45	123.55	156.13	189.04	226.07	3:46:07
J13	Maxwell	Charles See	50.54	80.54	109.18				
J15	Selden	Charles Young	29.42	103.14					
J12	Mitchell	C. A. Kerchoff	53.57						

Best lap, No. 16, Chalmers, lap 2, in 24:57. Winner's average speed, 46.2 miles per hour.

NASSAU SWEEPSTAKES, 93.84 MILES.

No.	Car.	Driver.	1	2	3	4	Total Time.
N3	Buick	Hugh Easter	30.55	67.10	97.23	127.52	2:07:52
N4	Cameron	F. F. Cameron	33.54	67.59	101.54	135.52	2:15:52
N1	Mitchell	W. Olney	32.28	71.04	108.12	142.23	2:22:23
N5	Mitchell	H. R. Cousins	33.04	68.05	113.42	150.02	2:30:02
N7	Buick	L. H. Titus	43.32	79.43	119.09	150.04	2:30:04
N6	Cadillac	F. W. Darnstadt	44.02	94.13	135.06	194.13	3:14:13
N8	Reo	A. F. Camacho	36.29	72.41	108.30		
N2	Gyroscope	C. White	49.53	105.05			

Best lap, No. 3, Buick, lap 3 in 30:13. Winner's average speed, 44.03 miles per hour.

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way between the grandstand and Westbury, in order to observe the happenings as the cars rounded the two curves on the cement course, which were reputed to be so dangerous. It had been rumored that the turns were not banked sufficiently to permit the cars to take them at high speed without upsetting, and, further, that the bridge grades were so abrupt as to cause the cars to jump dangerously as they passed them. Yet the

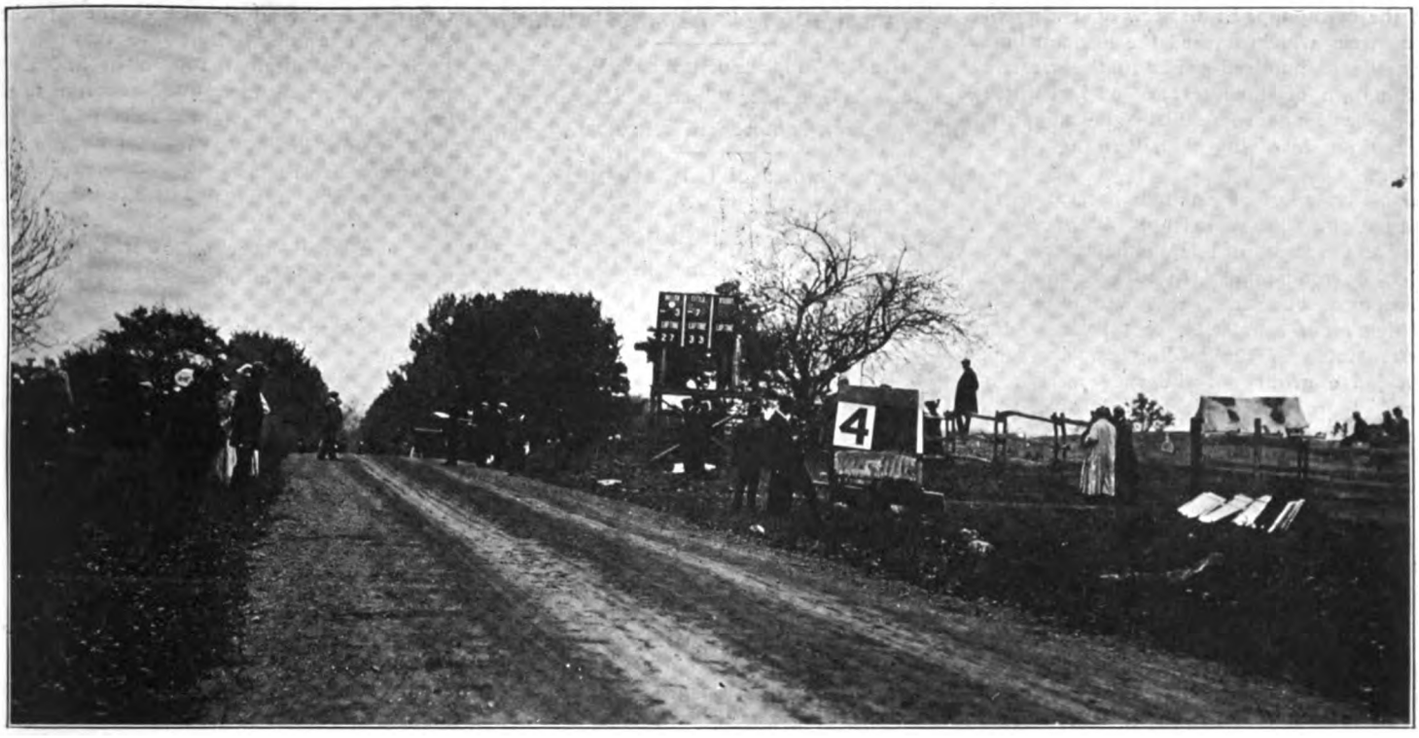
some skidding, of course, but many of the long wheel-base cars slewed less than the shorter ones—due, to a large extent, to more expert handling by some of the more experienced pilots, perhaps. While the banking of the turns is not as steep as might be expected, it was found to tell considerably on the equilibrium of the cars as soon as they would commence to skid. Kilpatrick's Hotchkiss, Lytle's Isotta, the Chal-

asphalt, greasy and otherwise, often does.

One remarkable phenomenon was observed. On many of the faster machines the front wheels would pound and bounce around the curves, making steering at high speed an operation requiring the best of drivers' skill. Instead of rolling along in the right manner, the speed of the car and the sway of the rear wheels would force the front ones to slide ahead and scrape along at an angle, despite the driver's efforts to aim them in the right direction. This, of course, was due to going at a rate that would upset such cars on ordinary roads.

The manner in which the various drivers hit these curves was interesting. Some would swoop away out on the upper rim, almost near enough to the edge to topple over, while the majority of the pack stuck to the

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SIGNALING AT THE SUPPLY STATION ON THE JERICHO ROAD

center of the white path. Lytle, Lescault and others would go thundering around in the center, skidding more or less, and apparently careless of consequences, while Lewis Strang would stick to the inside pole on most laps and skid hardly an inch. A number of the small cars also hugged the inside, this keeping them out of the big fellows' way and shortening their journey a trifle.

This same "S" curve is well laid out and beautifully banked, but in one respect at least it is a disappointment. For those who looked toward it as the scene of possibly sensational developments it seems destined to be barren of spectacular elements.

It was pleasant to see that sturdy son of Long Island, whose barnyard was temporarily given over to the purposes of a roadside supply station, wandering over his domain. He was observed to smile as he thoughtfully kicked his toe into the ruts formed in the soft turf by the wheels of the cars and it seemed he must be ruminating on the relative profits derivable from tilling the soil and farming it out to the Long Island Motor Parkway to be in turn farmed out to the entrants in the race, in 10 by 12 foot sections at the rate of $50 per 120 square feet, or thereabouts.

He was not alone. In addition to its rightful lord that profitable spot was peopled by no less than 199 other persons, including attendants at the stands, the telephone men and "the crowd." Scattered along the course at ragged intervals were small groups of local residents with an occasional motoring party—another two or three hundred perhaps, within a range of a mile each way. The section thus outlined was what was vaguely known to the press men and spectators at the grandstand as "the other supply station."

Arrangements here made for the convenience of the drivers were neat if not gaudy. Within the yard in question, some 20 feet back from the road, was constructed a sort of counter of plain lumber, back of which were stretched partitions for some 12 feet, forming small enclosures of the stall order, in which the contestants' supplies were packed. The virgin turf of the yard formed a siding onto which the cars could run from the course, while laid up for replacements. A stand directly in front mounted the telephone station, while various signaling devices erected by their assistants for the guidance of drivers in the race completed the embellishment of that section of the course.

From the spectacular point of view, "the other supply station" was not a distinguished success. The road before it lies fairly straight and declining slightly in the direction of travel. Half a mile away to the



MAXWELL AND SHARP ARGUING THE COURSE

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east the cars popped into view over a notch in the trees which marked the horizon line. A couple of hundred yards to the west, a combination of down grade and reverse curve occasioned some little side slipping, but nothing involving even thrilling consequences.

Also as a point of general observation of the race, the station was not advantageous, owing to the laxity of telephonic interchange with the grandstand. Up to 11 o'clock or thereabouts, bulletins were sent in with a fair degree of regularity, so that in so far as the status of the leading cars in each of the five groups of the race were concerned, there was no lack of information. The results as received, were chalked up on a small blackboard and promptly erased. Nothing was said of mishaps or delays, however, and the spectators were forced to do their own "clocking" in order to determine for themselves how matters fared with their favorites.

"Station stops" at the supply station began fairly early in the race. Mostly the cars were in need of supplies and tarried only a moment or two—the drivers and mechanics working feverishly while the attendants passed them what they required; or bungled things sadly in the madness of their haste. Thus:

Mitchell No. "N-1" stops for water and oil, and before leaving the mechanic ties a handkerchief over the radiator inlet in order to provide free ventilation. Cars No. 35 and 36 pass in order, both running prettily, and then the "J-18" Mitchell drops in for a supply of lubricant. Strang, whose Renault evinces an apparent tendency to switch its rear end slightly on the reverse curve just below, rumbles by presently, with the six-cylinder No. "44" car close behind. The Maxwell, No. "J-13" drops in presently, and its driver explains, while taking on fuel and oil, that his earlier rounds had been delayed because of water splashing from his radiator. This had short-circuited the current and necessitated a complete change of plugs before regular running could be got out of the car.

Only the few large cars are left in the running, now, and they pass and repass with such precision that there is small interest in their flight, save to those who have kept consistant scores of their own from the very first lap.

Lunch boxes are in evidence. Packages of pie and crullers are being unfolded here and there, while beside the road a constantly augmenting procession on foot is winding its way down toward the cross roads where cars and carriages are waiting for their occupants. Two big cars pass within three minutes of one another. Then a solitary driver rambles down the course at high speed.

"He's on his last lap," says one.

"No, the next to the last—he's got one more to go," says his companion.

But the question seems to have lost interest to the majority of those who yet remain.

DE PALMA "IT" AT PROVIDENCE

He Breaks Track Record and Wins Free-for-All—Race for "Specials" Develops Hot Contest and a Protest.

Before a crowd of fully 8,000 persons at Narragansett Park, Providence, R. I., on Saturday, October 10, Ralph De Palma, driving the Fiat Cyclone, broke the local track record for the mile, when he covered that distance in 52⅖ seconds. The best previous performance for the mile in that locality was 0:54. De Palma's time on Saturday was only 1⅖ seconds slower than his recent world's record of 0:51 flat, made at St. Paul, Minn., on September 5th.

The races at Providence were held under the auspices of the Rhode Island Automobile Club and barring two accidents, formed an interesting program, though rather monotonous in that eight of the ten events were at five miles distance.

Both accidents were due to a defect in the track near the three-quarter post. Joseph Wilcox, of Beverly, Mass., taking the turn in one of the events, was hurled into a ditch when his Cameron skidded and crashed into the rail fence. Wilcox sustained an injury to his spine as well as a nervous setback, but it is expected that he will recover.

In another race Arthur Lee, driving a Corbin car, was thrown out, fracturing his shoulder when his machine reared, turned turtle and pinned him beneath it.

The first event was for gasolene stock cars rating from 40.1 to 60 horsepower, and boasted but four entries. Grant, driving a Locomotive car, won easily, taking the lead at the start and increasing it throughout the five miles. L. S. Rogers's Welch took second, with a big lead over Cook's Stearns. Grant's time was 5:14⅘.

Oliver Light captured the next, which also was a 5 miles event, but for cars rated between 15.1 and 24 horsepower, driving his Chalmers-Detroit over the course in 6:48⅗. It was in the second round of this contest that Wilcox's Cameron car went over the bank, and James Meyers in his Ford, who was close behind, wrenched his machine by applying the emergency brakes, so that he was forced to withdraw. Edgecomb in a second Ford, took second place.

Following De Palma's trial, in which he skirted a mile in 0:52⅗, a special race for gasolene cars of unlimited power, was run in three heats. Grant and Capron fought a hot duel in the first heat, the latter taking it with a Pope-Hartford. The two cars finished only ⅕ second apart, after having run within 50 feet of one another the whole distance. In the second heat, which A. W. Merriam won, with a Welch, Arthur Lee came to grief. Grant and Capron again came together in the final and fought courageously, driving side by side all the way. Capron had the advantage in the stretches, but was outgeneraled at the turns by his antagonist, who finally won in 5:13⅗. It was due to some misapprehension as to the legitimacy of Grant's methods of handling these same turns, however, that Capron later entered a protest, claiming that racing rule 66 of the American Automobile Association code had been violated. The rule in question deals with passing on the track and it was claimed that Grant cut in to the pole unfairly more than once.

In the free-for-all De Palma, in the Fiat Cyclone, drove around and around Grant's Locomotive, making six miles to his five. J. Crafford, in another Fiat, was an "also drove." De Palma's fourth lap was covered in 0:52⅖, which was ⅖ second better than his exhibition trial. His fifth was finished three-quarters of a mile ahead of his nearest competitor, and continuing the running at high speed, out of sheer bravado, he lapped the Locomotive car before it finished.

This race was to have been the big competition feature of the afternoon, as L. F. N. Baldwin, a local driver, was expected to give De Palma a close competition. The former, however, disabled his car while practicing in the morning, which prevented his appearance, much to the crowd's disappointment. The summaries:

Five miles, stock steam cars—Won by F. W. Marriott, Stanley; second, W. R. Files, Stanley; third, A. C. Trimble, Stanley. Time, 5:28⅗.

Five miles, gasolene stock cars, 15.1 to 24 horsepower—Won by Oliver Light, Chalmers-Detroit; second, C. A. Edgecomb, Ford; third, James Meyers, Ford. Time, 6:48⅗.

Five miles, gasolene stock cars, 40.1 to 60 horsepower, prizes $75 and $40—Won by Grant, American Locomotive car,; second L. S. Rogers, Welch; third, C. Stafford, Stearns. Time, 5:14⅘.

One mile exhibition, against time—By Ralph De Palma in the Fiat Cyclone. Time 52⅗ (record for the track).

Five miles "Special," gasolene stock cars, all horsepowers—Final heat won by Grant, American Locomotive; second, H. A. Capron, Jr., Pope-Hartford; third, Stafford, Welch. Time, 5:13⅗.

Five miles, free-for-all—Won by Ralph De Palma, Fiat Cyclone; second, Grant, American Locomotive; third, Crafford, Fiat. Time, 4:26.

Five miles, motorcycles, 20 inches displacement—Won by B. A. Swenson, Indian, time, 6:35⅖; second, E. L. Buffington, Indian, time, 6:38.

Five miles, motorcycles, 30 inches displacement—Won by B. A. Swenson, Indian, time, 5:37⅖; second, J. McLaughlin, Merkel, time, 5:42⅕.

Five miles, motorcycles, 60 cubic inches displacement—Won by B. A. Swenson, Indian, time 5:28⅗; second, E. L. Buffington, Indian, time, 5:53⅗; third, J. McLaughlin.

One mile, motorcycle, exhibition, against time—By B. A. Swenson. Time, 1:02⅗.

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BIG RACE AROUSES PHILADELPHIA

Robertson Wins $2,000 Cup in 200 Miles Contest—Thrilling Duels for Position—Mulford Makes Fastest Lap.

Quite the liveliest spectacle witnessed by staid old Philadelphia in all the dashing program of its Founders' Week was that furnished by the automobile race of Saturday last, 10th inst. Barring only the undignified squabble for seats in the grandstands lining the route of its elaborate historical pageant, no review was more exciting than that of the sixteen cars which flashed about the tortuous circuit in stately Fairmount Park, with remarkable precision and in an endless succession that suggested a flying parade of machines.

To cover the 200 miles of the course, it was necessary for the drivers to make 25 laps of eight miles each. Sixteen cars started, and one was eliminated after completing one round trip. Of the remainder four finished with honors, a fifth car being the only other one running when the race was called off by the officials. Throughout the contest the majority of the contestants kept close to an average of ten minutes to the lap, so that the spectators who lined the greensward by the side of the boulevards had never more than a moment or so of inaction. The first event of its kind for the Quaker City, it set a mark of popular esteem that will be hard to equal another time.

George Robertson, driving a 40 horsepower Locomobile, added fresh laurels to his crown by winning the contest and lifting the $2,000 cup. His time was 4 hours 2 minutes 30 seconds, and he made an average speed of nearly 50 miles an hour. This is Robertson's second victory within a week, and adds brave distinction to his conquest of the Brighton Beach 24 hours race on October 2 and 3.

In the Philadelphia race he beat his nearest competitor, Patchke, by more than 12 minutes. The latter, in the Acme, won second honors after a lively duel with Mulford's Lozier, in 4:14:54. Mulford, in addition to scoring third in 4:17:26, won the North American's cup for driving the fastest lap—his tenth. To accomplish this, he was forced to make a circuit of the course with its numerous dizzy turns in 8:32. Bert Maucher, with the Peerless entry, was fourth, in 4:21:26, the race being called off as soon as he had crossed the tape.

When the contest was flagged at this point, no less than 11 of the original contestants had been forced to drop out, owing to mishaps, although strange to say, despite the numerous accidents, none of the drivers suffered serious injuries.

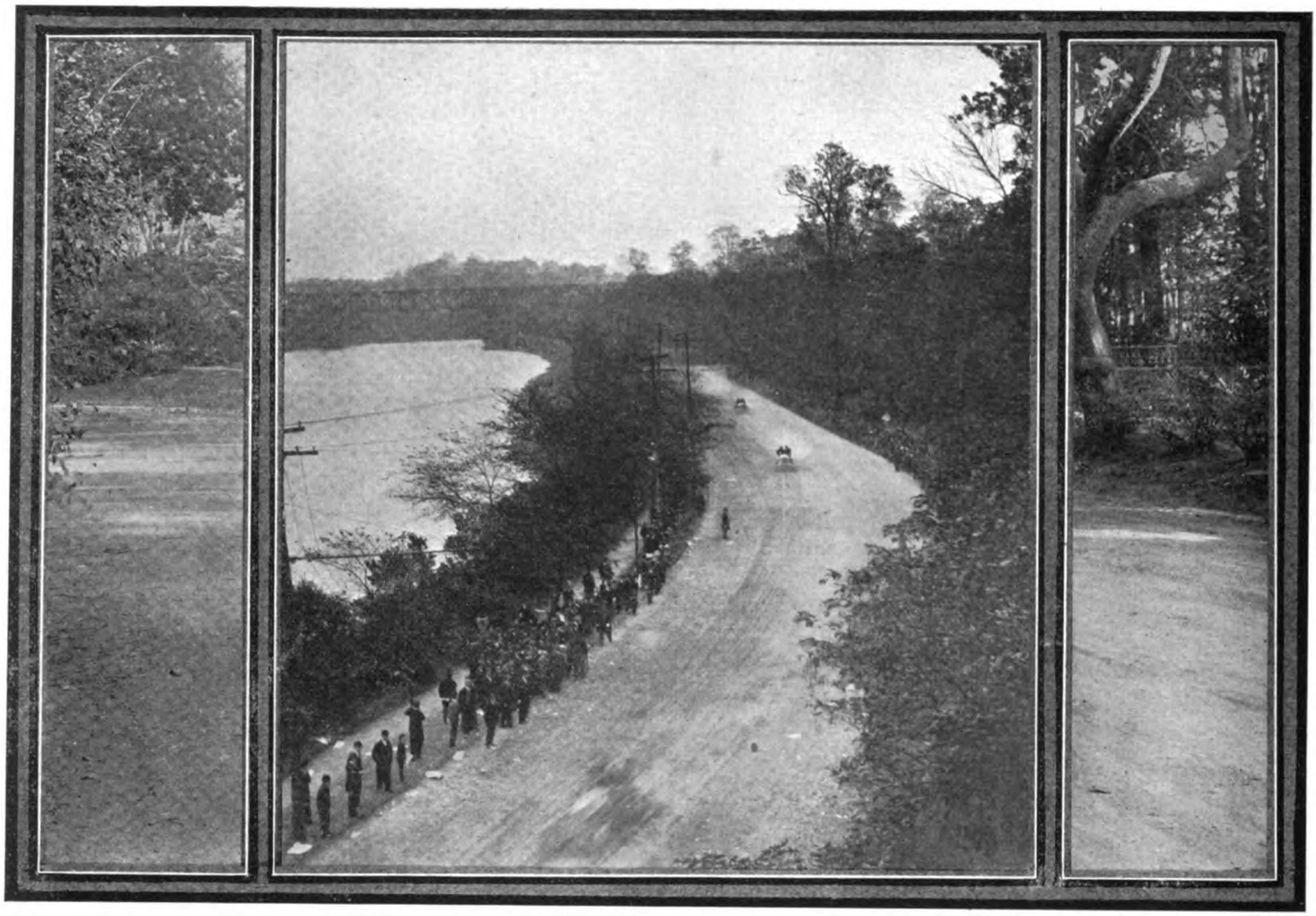
Promptly at 7 o'clock Herbert Bittner at the wheel of the Maxwell car, left the tape and started the race, a deafening siren whistle announcing that fact to the quarter of a million people reputed to be scattered about the course. The other contenders followed in regular succession, no incidents of an untoward character occurring to mar the start.

No sooner had the 16th and last car started than the cry of "Car coming!" went up, and George Davis's Apperson "Jackrabbit" leaped into view at the grandstand. He had passed Bitner's Maxwell, and was putting on high speed to retain the lead. Next appeared Maucher's Peerless and Salzman's Thomas; then a string of cars followed in such close succession that the



GEORGE ROBERTSON, LOCOMOBILE, "LIFTING THE CUP"

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IN HOT PURSUIT ON THE BANKS OF THE SCHUYLKILL

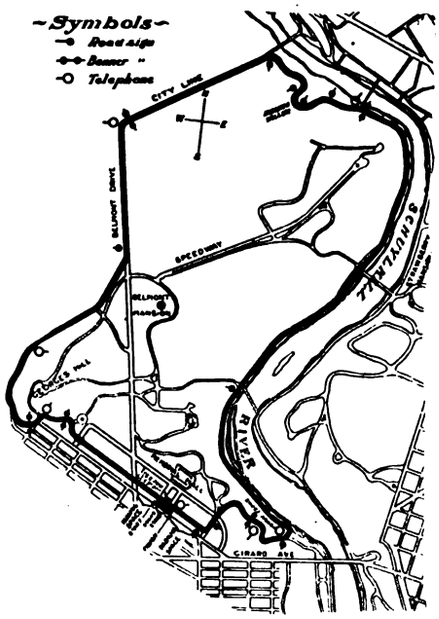
timers could scarcely catch the numbers, let alone the exact times.

Salzman had forced the Thomas up close to the Jackrabbit and the Palmer & Singer was running in great form under Wallace's guidance. Following were Mulford, Robertson and Maucher, with the rest of the field drawing close together.

For a few minutes there was a lull at the grandstand and then news of the first accident was telephoned. While scarcely out on his second lap Harry Michener blew up a rear tire in making a very bad turn at Fifty-second street. A wild skid across the macadam road caused the car to upset, throwing out the driver and Harry Lynch, his mechanician, and breaking a wheel, which caused the car's early withdrawal. Michener and his mechanician were scarcely dragged from the road when Mulford, coming around in the sister car, skidded at the self-same spot, swerving wide and running off the course into the grass, but continuing on.

Salzman, who made the fastest time on the first lap—8:57—continued his high speed and was leading by a good margin in the second, with Maucher's Peerless, and Wallace in the P. & S. hot upon his trail. Florida's Locomobile was in fourth place and Davis's Jackrabbit fifth. Salzman retained his lead until the fourth round, when Wallace displaced him with a mad whirl.

About this time the scouts around the course wired in that Bitner's Maxwell had



MAP OF FAIRMOUNT PARK COURSE

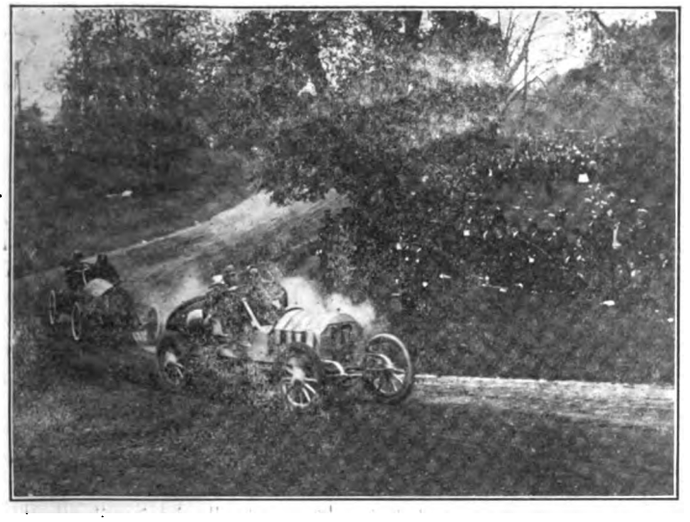
broken a crank shaft and would have to discontinue. With Wallace still holding the first position in the fifth lap, and with the other leaders in about the same order, it was learned that La Roche had been obliged to give up, his Pullman having been laid aside with a broken rear wheel.

Eliminations followed more rapidly after this. Robertson and Florida, the Locomobile team, had not been distinguishing themselves particularly up to this point, but seemed waiting on the order of events, and Wallace was still retaining his lead in the seventh lap, when the hoodoo sat on two more cars. Ireland was placed on the retired list, when the magneto on his Stoddard-Dayton went wrong, and Salzman's Thomas, one of the big favorites, was put down and out, with a broken crank shaft.

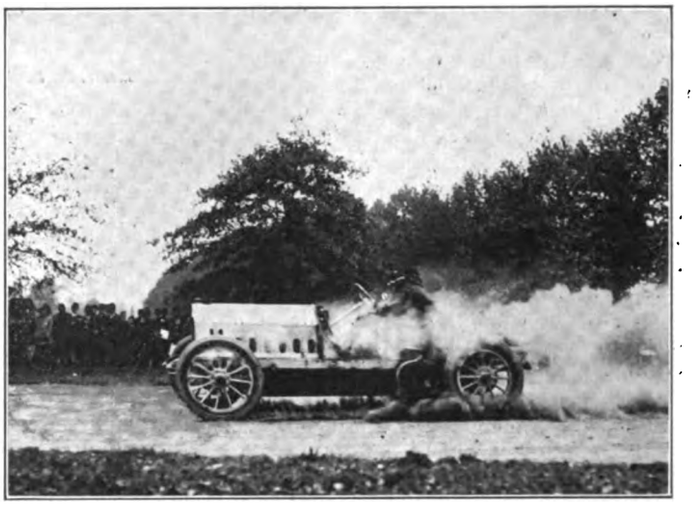
It was on the next circuit that Robertson made the people sit up and take mental note, when he stole fourth, with Florida sticking close behind and passed Wallace. Thereafter Robertson continued to hold his own and was not headed for the remaining two-thirds of the race, save only once by his team mate, and then only for one lap.

On the ninth, tenth and eleventh rounds, Davis pushed his Apperson with all his might and was no mean challenger, while

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ROBERTSON, LOCOMOBILE, LEADING WALLACE, P. & S.



PATCHKE, ACME, WHO FINISHED SECOND

Wallace, in a desperate effort to regain his advantage, pressed the "Bunny" hard and held fourth position against the field. Swinging into the finish of the twelfth he tied with Davis for third place, only to lose it in the next whirl by a bare 2 seconds.

Zengle, who had been piloting the Pennsylvania in a fairly consistent manner, gave up the ghost soon afterward, and a few minutes later, Frank Yerger, whose Studebaker had been performing well, though not among the foremost, suffered a broken wheel at a sharp turn, ripping out the spokes completely. A new wheel was put on, but the delay spoiled his chances.

Robertson, who was leading the pack by four minutes and more, showed no let-up. Between the 14th and 15th laps, however, Wallace caught up with the other Locomobile driver and tied for second place, only to yield again in the 16th. In the 17th Florida had jumped past Robertson, and was leading him by 10 seconds at the end of the lap. He did not hold the advantage for Robertson soon went up to the lead again.

A remarkable incident of the 19th circuit occurred when seven cars were discovered to be on the same lap simultaneously, with but 8½ minutes between the leader and last car and but little more than 1 minute separating the leading trio. Indeed, for two entire laps, or until the 21st, the cars were in the same order. Then the "hoodoo" again appeared. Bergdoll in his Locomotive, anchored on Belmont avenue and went out of the running, and Wallace, who had driven such a splendid race, was forced to retire. George Davis's misfortune was every bit as tragic in the next lap, when his Jackrabbit fell. He had been speeding at a rate that endangered the two Loco drivers' chances considerably, and it was a hard blow.

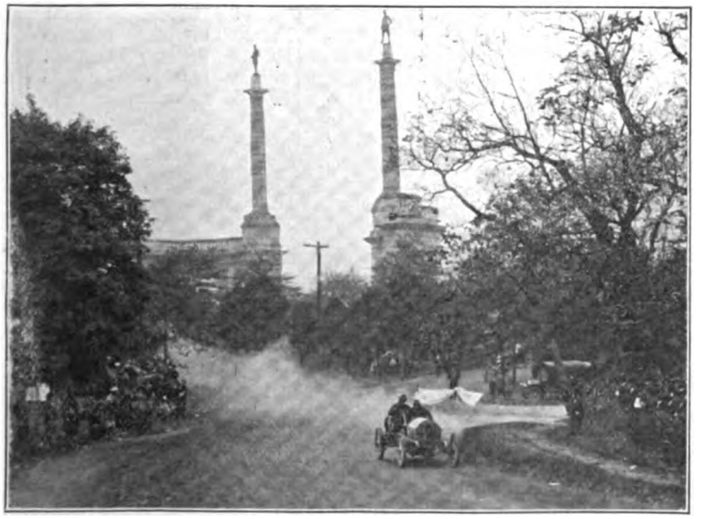
In the mean time, Patchke, in his Acme, had been slowly but surely creeping to the fore. Davis's breakdown swung him into third place. Mulford followed. Bert Maucher, the Peerless driver, had been handicapped by tire troubles about this time to such an extent that he was unable to take advantage of these other mishaps.

The 23d lap proved James Florida's Waterloo and spoiled the second Locomobile's chances. His break down at this critical moment gave the Acme the place directly behind Robertson. Patchke set out for the leader, but the lead was too great for him to overcome. At the end of the 24th, Florida dropped out altogether and was not able to fight for a place at the finish.

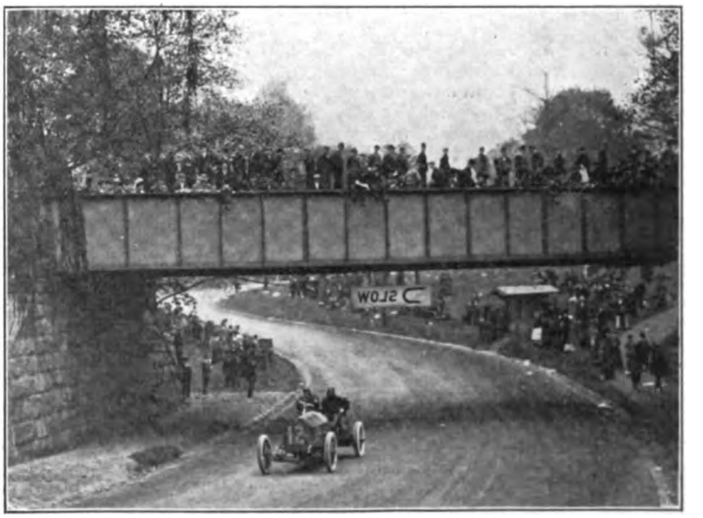
The duel between Mulford and Maucher resulted in the Lozier driver getting away with third honors at the finish line.

Honor weighed heavily on Robertson's hands when he attempted to lift the cup he had won, amid a shower of roses scattered by the hand of the mayor's wife. He bore the ordeal well, however, and graciously accepted the recognition for which he has waited patiently since the accident of two years ago, when he was prevented from participating in the elimination race prior to the Vanderbilt cup contest in which he was determined to compete.

Robertson's victory was clean cut and decisive. The Fairmount course was by no means velvety, despite its parkway character. There were numerous nasty turns and at these the crowds were packed in shoals, watching for sensations. Many of the wiser



FLORIDA, LOCOMOBILE, CLEARING SHARP TURN



WALLACE, P. & S., ON "S" CURVES

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ones even climbed trees to gain a better view.

Around the Falls of Schuylkill bridge, under which is the famous "dip," too narrow to permit the passage of two cars, the crowd was the thickest, and further along the line, on the "Hairpin" curve on Neil drive, another large crowd gathered. Between here and Belmont avenue the crowd was not so thick, but at Belmont dense throngs formed all along the drive to Parkside avenue.

Despite the huge attendance, little or no difficulty was experienced in handling the crowds. The arrangements for policing the course had been planned carefully in advance, and so far as could be learned, the drivers were at no time embarrassed by that press of humanity at the sides of the road which has hampered so many drivers in big events.

It was reported that prior to the race some of the drivers who had participated in the outlaw Brighton Beach 24 hours race of September 11 and 12, had refused to sign the certificates of absolution, thoughtful provision for which had been made by the American Automobile Association. Naturally drivers who were unwilling to take oath that in driving at Brighton Beach they had labored under a "misapprehension" in the matter of sanctions, would retain the technical disqualification which that act involved.

When interrogated as to the status of the Philadelphia race in this respect, Secretary Frederick H. Elliott, of the A. A. A., plead complete ignorance. Though refusing to be quoted he intimated that the Philadelphia club had not advised him of any such contingency, and indicated that were such the case, matters would certainly have to be straightened out before the running of the Vanderbilt cup contest two weeks hence.

Entries for the Vanderbilt Cup.

Announcement was made early this week of the complete list of entries for the Vanderbilt cup contest to be held on the 24th inst. Nineteen cars constitute the candidates for honors in the great classic and of this number, 12 are of American manufacture and 7 are foreign made. The drawing for starting positions took place yesterday (Wednesday) at the Garden City Hotel, with grand ceremony, under the direction of Fred J. Wagner. As a result the Locomobile car, the driver for which has not yet been nominated, will start first, followed by Basle's Knox, and Striker's Mercedes. The cars, drivers and order of start is as follows, the unlucky "13" being omitted:

No.	Entrant and Car.	Driver.
1	Locomobile Co., Locomobile.....	
2	Knox Automobile Co., Knox.....	Basle
3	Robert Graves, Mercedes	Stricker
4	Chadwick Auto Co., Chadwick....	Haupt
5	W. K. Vandelbilt, Mercedes....	Luttgen
6	Clifford V. Brokaw, Isotta	Lytle
7	James B. Ryall, Matheson	Ryall
8	E. R. Thomas Motor Co., Thomas..	
9	Hotchkiss Import Co., Hotchkiss..	Kilpatrick
10	H. P. Whitney, Brasier	Pouget
11	Acme Motor Car Co., Acme....	Patchke
12	E. R. Thomas Motor Co., Thomas..	Salzman
14	Thos. Williams, B. L. M.....	Williams
15	Matheson Motor Co., Matheson....	Chevrolet
16	Locomobile Co., Locomobile..	Robertson
17	Paul Lacroix, Renault	Strang
18	Foxhall Keene, Mercedes	Keene
19	E. R. Thomas Motor Co., Thomas..	G'll
20	Knox Automobile Co., Knox....	Bourque

Wm. K. Vanderbilt, Jr., expressed some reluctance about officiating as referee of the coming race, as he has entered a car. The other contestants overcame his scruples and unanimously voted him referee. The Mora car, which was entered some time ago will not be able to compete, as it will not be completed in season.

Old Buses for Traveling Show.

"What becomes of the old cars?" is a question frequently asked and not invariably answered to the complete satisfaction of the inquirer. But in France and England the problem of disposing of the old motor omnibuses cannot as readily be solved through the assistance of the rebuilder of second-hand material, as can that of disguising old cars. Nevertheless in a few instances new uses have been found for discarded vehicles which are as odd as some of the purposes to which old horsecars are sometimes devoted. Thus, in one case an enterprising showman has taken possession of a couple of old Parisian 'buses and converted them into a road train for his moving picture outfit. This, including tents, "bleachers" and stereopticon, is transported from place to place by the efforts of the two relics.

Shortest Route Determines Cabby's Fare.

Given the choice of a long and a short route, the driver of a taximeter cab cannot charge more for taking the long route, according to a London magistrate, who was called upon to decide a peculiar case involving this question. A woman called a cab to her house and the driver, apparently in order to swell his receipts, took a circuitous and mileage piling course. Upon the woman's refusal to pay the excessive taximeter charge, the driver applied for a summons for the amount, but was told by the court that if he chose to go the longest way he could not expect to be paid for it.

SUMMARY OF THE RACE SHOWING TIME BY LAPS.

Driver.	H.P.	Car.	1st Lap.	2d Lap.	3d lap.	4th lap.	5th lap.	6th lap.	7th lap.	8th lap.	9th lap.	10th lap.	11th lap.	12th lap.	13th lap.
Robertson .	40	Locomobile	9:52	19:36	9:07	38:37	48:04	57:31	1:06:55	1:16:26	1:25:48	1:35:14	1:44:33	1:54:12	2:03:40
Patchke ...	*50	Acme	10:19	20:26	0:32	40:43	51:56	1:01:32	1:11:32	1:30:26	1:32:26	1:41:37	1:51:39	2:01:36	2:11:38
Mulford ...	45	Lozier	14:14	24:04	33:29	55:44	62:48	1:01:37	1:11:05	1:20:32	1:31:04	1:39:36	1:49:13	1:58:51	2:08:32
Maucher ..	30	Peerless	9:57	24:24	34:23	44:31	55:51	1:05:14	1:15:20	1:26:11	1:36:37	1:47:14	1:57:41	2:08:02	2:18:17
Florida	40	Locomobile	9:59	19:37	29:11	38:45	48:20	57:51	1:07:25	1:17:04	1:26:37	1:36:14	1:45:52	1:55:31	2:05:13
Davis	55	Apperson	9:58	19:39	29:11	38:14	48:15	59:36	1:11:05	1:20:34	1:29:56	1:39:20	1:48:52	1:58:23	2:07:50
Bergdoll ...	*60	Amer. Loco.....	10:30	20:54	29:57	39:40	49:37	59:41	1:09:47	1:19:54	1:30:02	1:40:05	1:49:59	1:59:54	2:09:25
Wallace ...	*60	Palmer & Singer..	9:27	18:42	27:58	37:16	46:43	55:15	1:05:39	1:20:42	1:30:07	1:39:35	1:48:58	1:58:23	2:07:48
Yerger	40	Studebaker	12:40	22:45	33:02	43:32	54:23	1:04:27	1:14:50	1:25:29	1:35:38	1:46:03	1:56:12	2:06:19	2:16:29
Harkins ...	*50	Chadwick	11:33	23:23	33:16	43:18	53:53	1:11:40	1:29:28	1:39:50	1:49:55	2:00:46	2:29:02	2:38:58	
Zengle	50	Pennsylvania	10:18	20:10	30.07	40:07	51:06	1:02:46	1:12:54	1:28:58	1:48:09	1:59:18	2:10:25		
Salzman ...	60	Thomas	8:57	17:37	26:32	47:20	47:32	56:22							
Ireland	45	Stoddard-Dayton ..	10:29	20:45	31:00	41:21	53:21	1:43:14							
La Roche..	40	Pullman	10:44	24:34	37:32	47:20									
Bitner	28	Maxwell	11:31	22:42	33:46										
Michener ..	*50	Lozier	9:47												

Drivers.	H.P.	Car.	14th lap.	15th lap.	16th lap.	17th lap.	18th lap.	19th lap.	20th lap.	21st lap.	22d lap.	23d lap.	24th lap.	25th lap.
Robertson .	40	Locomobile	2:13:09	2:22:38	2:32:11	2:46:31	2:55:53	3:05:14	3:14:41	3:24:06	3:33:39	3:43:15	3:52:52	4:02:30
Patchke ...	*50	Acme	2:21:37	2:31:31	2:41:27	2:51:26	3:02:38	3:12:49	3:23:15	3:33:33	3:43:49	3:54:09	4:04:26	4:14:54
Mulford ...	45	Lozier	2:18:08	2:31:58	2:42:12	2:51:47	3:01:30	3:11:15	3:26:45	3:36:21	3:45:54	3:55:30	4:06:55	4:17:26
Maucher ..	30	Peerless	2:28:26	2:38:50	2:49:08	3:01:22	3:11:20	3:21:25	3:31:29	3:41:29	3:51:29	4:01:28	4:11:35	4:21:26
Florida	40	Locomobile	2:14:59	2:24:46	2:34:36	2:46:21	2:56:03	3:05:44	3:15:22	3:27:39	3:37:37	4:03:34	4:14:56	
Davis	55	Apperson	2:17:20	2:24:46	2:39:11	2:48:46	2:58:17	3:07:50	3:17:36	3:27:59				
Bergdoll ...	*60	Amer Loco.....	2:19:59	2:29:57	2:40:00	2:49:55	2:59:58	3:10:01	3:20:00					
Wallace ...	*60	Palmer & Singer..	2:26:32	2:36:10	2:45:33	2:54:51	3:04:15	3:13:41	3:27:59					
Yerger	40	Studebaker	2:57:23	3:09:30	3:19:49	3:30:02	3:45:14	3:55:43	4:14:18					

* Six cylinder motor. † Running whenrace was called off.

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FIVE PERFECT IN FOUR DAYS TEST

Only Four of Seventeen Drop Out of Chicago Reliability Runs—Rain and Mud Mutilate Scores.

Few endurance contests can begin to compare with the 1,000 miles, four days reliability run of the Chicago Motor Club held on October 6-9. It was almost as big an event for Chicago as the sweepstakes for New York, or the Fairmount races for Philadelphia. Seventeen contestants started out on the schedule which comprised an average run of 250 miles daily in the vicinity of Chicago, returning to that city each evening; and when the technical committee made its final report of the four days, only five of the starters were found to have perfect scores. Four had dropped out of the race at various stages and eight finished in the running with penalizations. The test was unusually strenuous and exacting. A perfect score meant that the cars had to be in absolutely perfect condition at the finish. As is usual with Chicago endurance contests, a loosened nut or bolt, a bent axle, or any other minor or major defection, caused a penalization. Two Haynes, a Premier, Franklin and Pierce-Arrow were fortunate enough to pass the eagle-eyed examiners at the final inspection. The following is the final score of the cars:

Perfect scores—Roadster Class.

Driver.	H.P.	Car.
Frank Nutt	36	Haynes
R. McNamara	32	Premier
C. S. Carris	28	Franklin

Perfect Scores—Touring Class.

L. Wagoner	36	Haynes
P. Hofman	60	Pierce Arrow Six

Penalizations—Roadster Class.

			Points
A. Kumpf	43	Pierce Arrow	1
McLain	30	Apperson	32
Dusenbury	20	Mason	216
Heaslet	45	Rainier	*
Nicholson	32	Midland	*
Halliday	21	Reliable Day.	*

Pen lizations—Touring Class.

Shafer	50	Marmon	2
F. Harn	20	Mason	2
W. Leitch	30	White	21
Muntwyler	20	Maxwell	51
Hal Sheridan	30	White	55
Smithson	27	Studebaker	*

* Withdrawn

In addition to the two general divisions, roadster and touring, the cars were sub-divided into price classes. F. Harn's Mason was first in the $1,000 to $1,999 class, with 2 points against it. McLain's Apperson won the $2,000 to $2,499 class, with a 32-point penalty; Frank Nutt, with the Haynes, and R. McNamara, in the Premier, both perfect scores, tied in the $2,500 up group; Muntwyler's Maxwell, with 51 points against it, led in the $1,999 and under; C. S. Carris's Franklin and Wagoner's Haynes tied with clean tallies for the $2,500 to $3,999 honors, while P. Hoffman, in his Pierce Arrow got away with the $5,000 up class.

The fuel consumption scores were calculated by a formula which took into consideration the weight of the car, the load and the total gasolene used on the four days of the run. The result was called pound mileage and embraced the number of pounds driven a mile by one ounce of gasolene.

The fuel consumption report was as follows:

No. and Car.	Weight.	Gals.	Pounds mil'ge.
9 Premier	3,585	69¼	224.1
15 Franklin	3,675	84¾	198.0
8 Haynes	3,675	84¾	198.0
20 Pierce Arrow	5,575	128½	187.5
16 Haynes	....	93⅞	184.5
19 Marmon	5,060	110	183.5
2 Maxwell	2.950	74⅛	171.3
4 Mason	2,735	69¾	170.0
7 Pierce Arrow	4,280	110	169.5
11 Rainier	3,865	106¾	156.7
14 White	4,630	145⅜	134.5
12 White	4,765	153	134.5
3 Mason	2,615	87⅜	119.0

Of the seventeen contesting starters thirteen were perfect when the caravan checked in at Chicago Tuesday night at the end of the first day. The only driver to suffer penalization on account of the storm was Barney Muntwyler, driving the Maxwell entry, who suffered from carburetter trouble which caused him to lose 24 points.

George Smithson's Studebaker was in trouble when Janesville was reached, with a crippled rear axle. Failing to return to Chicago on time that night, it was declared out of the contest. F. S. Dusenbery, piloting one of the Mason cars, found it necessary to break seals and fuss with an oiler on the road. W. Leitch in the White Steamer narrowly averted a tragedy with a railroad train at a Janesville crossing. The car barely cleared the track without being hit, the three passengers jumping for life.

C. L. Halliday's Reliable Dayton (the only buggy-type car inthe contest) fared well until the last part of the drive, lateness in reaching the night control causing it to lose a perfect score.

The second day's jaunt saw a couple more broken scores, the heavy roads making extremely hard going. Contestants set out at 4 a. m. in the pitchy darkness and watched the chill gray dawn break as they swung out through Aurora, Big Rock, Somonauk, Ottawa, Lowell, Oswego, and back after a hard push to Aurora, whence they returned to the starting line at Jackson Boulevard and Michigan Avenue, Chicago.

It was the bad highways around Semonauk, Ill., that despoiled the two scores mentioned. Hayes's Midland went flying into a patch of cinders and was wrecked, when a front wheel stuck in a rut and caused it to slew into a ditch. A front axle was broken, necessitating withdrawal, and G. P. Hall, the observer, was thrown out against a fence and sustained an injured knee cap. The Rainier that Heaslet was piloting suffered a broken frame and was withdrawn, though it was continued as a non-contestant, along with the Reliable-Dayton motor buggy. Dusenbury's Mason had two more points checked against it, for stalling the motor while in one of the controls, making a total penalization of 68 points.

When the technical committee made its report, at the close of the day, just a dozen of the 17 contestants still retained clean slates.

On the third day another car was dropped from the honor roll. The spin into the State of Indiana resulted in Nelson McLain, driving the Apperson entry, being penalized 22 points for breaking the seals on his hood to repair a fan-belt. The only other demerits which the technical committee imposed, were upon Dusenbury's Mason, which lost points earlier in the race. A couple of accidents varied the monotony of this day's run, although no one was injured. Paul Hoffman's Glidden Tour Pierce Arrow car "mixed it up" with a South Bend trolley car, while upon the return trip through South Chicago George Smithson's non-contesting Studebaker smashed a wheel and skidded badly.

Then came the wind-up day—the last 240 miles of the long contest, through a none too smooth route, touching Elgin, Rockford, Oregon, Rochelle and Aurora. When the last car checked in at the finish nine cars were reported with perfect scores, although these, of course, were subject later to minute examination by the technical committee.

Hal Sheridan, the crack White Steamer driver, was the unfortunate on this last leg. Before starting out in the morning he located trouble with the chain and oiler belt. In adjusting the difficulty, however, he was obliged to touch the seals, which cost him a penalization of 12 points, plus 14 for work on the road.

The tired technical committee wrangled for half the night in an effort to determine the winner of the Standard Oil Company trophy, offered for the car which was able to make the 1,000 miles on the least gasolene. Several likely winners of this philanthropic prize of the big-hearted corporation loomed up, but the mathematicians and experts adjourned this task until later. Their final conclusion resulted in the score quoted above.

Carries His Show on Motor Cars.

Lucky in having a circuit of theatres under his own exclusive management, all grouped on Long Island in towns within easy distance of each other, Al. Trahern, who is called the Long Island Frohman, has decided to use motor cars instead of the railway for transporting his troupe and scenery on their route of one-a-week shows. He has ordered a 32-passenger machine for the players and musicians, and a large freight truck for the baggage. The splendid condition of the Long Island roads makes the entire success of the plan more than probable.

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OLDFIELD AND CHRISTIE PERFORM

With Soules as Buffer They Share Honors at Cleveland's Two Days Meet—Kelsey's Entry is "Copped."

That trio of so-called "dare-devils," which has been delighting the visitors at Western county fairs and other small race meets for the last few weeks, entertained a goodly crowd at Cleveland, Ohio, during the Cleveland Automobile Club's two days' meet at the Glenville track, on Friday and Saturday, October 9-10. The "trio"—that is to say, Barney Oldfield, Walter Christie and Charles Soules, who seem to have the win-as-they-please habit—also exhibited as a fellow attraction R. G. Kelsey, of New York City, a driver who is better known in the East than on the Western tracks. Kelsey's efforts were curtailed, however. For some small question as to the rightful ownership of the car he was driving, which was claimed by a Chicago automobile company, proved his undoing. After some dispute over his title to the machine, he was placed under arrest on the broad charge of having stolen it, and his name was erased from the program.

Oldfield and Christie shared such "honors" as were to be had. On Friday the latter traveled a mile in 0:55½, which is nine-tenths of a second slower time than Oldfield once made on this self-same track. That hero himself shot around in his six-cylinder Stearns in 0:57 7-10, while Charles Soules, in the smaller Stearns, was one and one-tenth seconds behind that mark. The smaller Christie machine did not get under the minute mark, and its best time was chalked up as 1:04 2-10. This car was not working right at any time during theday, as is frequently its wont.

Oldfield also made the best time in the semi-final heat of the sweepstakes, when, going against Christie, he made the three miles in 3 minutes flat.

Paxon in a Jackson came in first in the $3,500 and under class for stock cars, doing the two miles in 2:31, but because this car was stripped of its fenders it was disqualified and the race given to Hissong, who drove a Winton in 3:58 4-5. The entry blanks allowed machines to be stripped in this manner, but as none of the rest had done so it was decided not to count the time made by the Jackson.. This novel way of making decisions did not make the Paxon-Jackson outfit a warm champion of the judges. Paxson also captured the novelty race and repeated in the two-mile special event for touring cars and runabouts, making the course in 2:41 9-10.

In the novelty affair, in which the drivers of novelty touring cars picked up and discharged a load of passengers every other mile for five miles, some of the machines did not slow up, and many of the passengers were rolled in the dust of the track in front of the grand stand, to the intense delight of the spectators.

Saturday, the second day of the meet, saw the clay surface of the track in very slippery condition, due to rain, and the fast drivers did not care to take any chances. When it came to the final of the sweepstakes event, however, Walter Christie shot under the wire ahead of Oldfield, his time for the pair of miles being 2:12. In an exhibition against time he also distinguished himself by making a mile in 0:59 4-5, which by no means equalled his previous day's mark.

Fireworks served to enliven the three-mile race for the $3,500 class. Paxon's mount caught fire and Frank Arams's Mora followed suit, but the flames were extinguished before either of the cars was badly damaged. U. Osgood, driving a Stoddard Dayton, won in 3:32 1-5, with the Arams's Mora second.

The three-mile free-for-all handicap again furnished excitement for the spectators. Charles Soules's four-cylinder Stearns was the scratch car, the Stoddard-Dayton and Mora were given twenty seconds handicap and two Oldsmobiles and a Royal were given considerable more, and in consequence Soules had some difficulty in winning the event. This he did, however, in 3:18 4-5. Frank Adams got away with a two-mile event for 1909 models, showing the field his dust in 2:34 1-5.

Detroit Plans Triple Endurance Contest.

What is billed as the "second great endurance run" of the Detroit Automobile Dealers Association is to take place on November 5, 6 and 7. Three separate runs will be made on each of those dates, the contestants starting early in the morning from Detroit and returning at night. The first day's trip will be to Saginaw and return; the second to Adrian and Jackson and return; and the third to Lansing and back. The schedule will be far more severe than in the last contest held there, and it has been decided to divide the cars into three classes, the smaller ones to start earlier and run on a slower schedule. At the finish, a technical committee will make a special examination of each machine, deducting points for deteriorated and broken parts of the mechanism.

Desert Course for a Road Race.

An Arizona newspaper has offered a silver cup as an inducement to motorists in that section to compete in a 450 miles road race from Los Angeles, Cal., to Phoenix, Ariz., which is being agitated by the Maricopa Automobile Club. It will take place between November 1 and 16, to reach Phoenix during the Territorial fair. Following the road race, there will be a track meet at the latter city. Much of the proposed course is through sand in the desert, which is calculated to test severely the running quality of the cars.

VIRGINIANS TAKE TO MOTOR RACES

Six Contests Make Exciting Close for Their State Fair—Ray's Plucky Fight Against Persistent Misfortune.

After the judges of the Virginia State Fair at Richmond had awarded the various prizes for agriculture, horticulture and health culture on Saturday afternoon, 10th inst., they went out to judge a series of six automobile and motorcycle races, five of which were at 10 miles' distance. After a motorcycle curtain-raiser, a 10-mile race for runabouts of 24-horsepower or under was held. Everts, driving a Buick, soon overhauled the field and won the event in 16:55½, with C. G. Montgomery in a Franklin and W. M. Batten in a Ford trailing for second and third places.

L. H. DeGraaf scored with a six-cylinder Ford in the event for cars between 24 and 40 horsepower. The only other entry was a Buick, which was outclassed. In the succeeding race for stock cars costing $2,500 and under, a Chalmers-Detroit, driven by E. J. Ray, led the field from start to finish, twice lapping B. A. Blenner's White Steamer and hauling rapidly away from the Foster Buick. Ray's time at the tape was 15:16, with the Buick second.

The scheduled feature of the meet was a 50-mile affair for chassis of 60-horsepower and under. E. J. Ray was mounted on a Stevens-Duryea "six," which broke down twice and was repaired each time. The Foster Motor Car Company's Buick and Dr. L. T. Price's car of the same make had a duel of their own most of the way. In consequence the former secured the lead and was holding it well when Ray, who had repaired his first breakdown, came along, overhauled the leaders one by one, and was in a fair way to win, when he broke down once more. The second accident ruined his chances for the cup, but Ray stayed in the race and swept around the track at a fast clip. The Maxwell touring car covered only about thirty miles of the race. The two Buick drivers finished first and second, the time being 1:11:44.

Lowell Holds "Pony" Automobile Races.

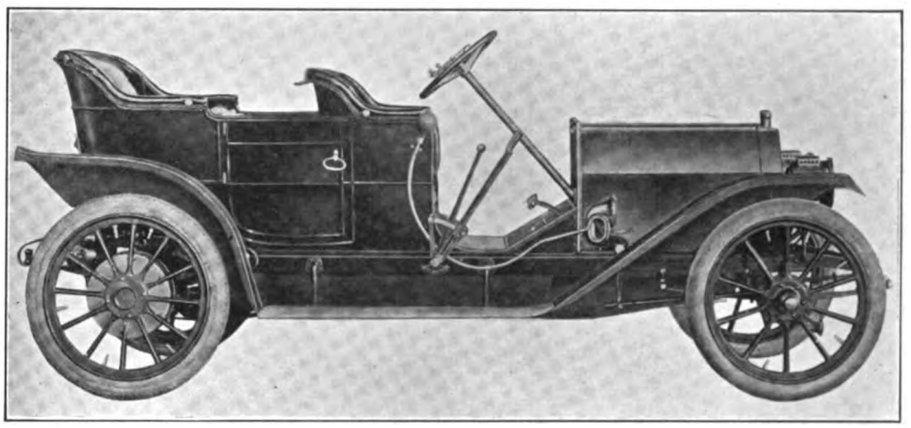
Since its famous Labor Day road race, Lowell, Mass., has been having a series of "pony" automobile races with boy competitors, in which the machines bear at least external similarities to the big racing cars and are designated by fanciful parodies in names. Among the entrants, the "L. I. A. R.," the "Iswotta," the "Knocks," the "Packhard," etc., are conspicuous, and as older citizens have in nearly each case put up substantial cash prizes, the competition has been very keen. At the most recent event, there were 17 starters, 11 finishers, and a crowd of over 1,000 spectators. Several of the machines overturned.

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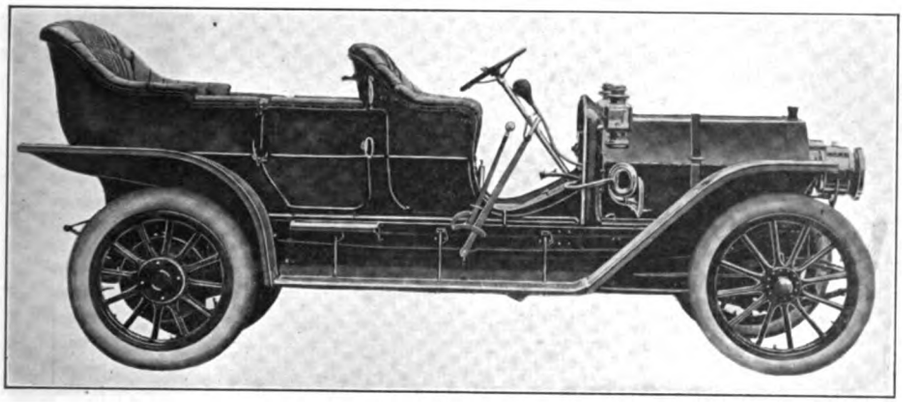
MARMON UNVEILS NEW MODELS

Distinguishing Features of the 1909 Designs —Originality Shown in Important Details of Construction.

Two entirely new models to be known respectively as the "Thirty-two" and "Fifty," are to comprise the principal features of the 1909 offering of the Nordyke & Marmon Co., Indianapolis, Ind., in addition to which there is to be a "45" roadster, differing from the larger of the two touring cars in the matter of engine dimensions and so of power. This announcement made last week, was emphasized by the simultaneous appearance of the two cars at the New York show of the National Carriage Dealers' Protective Association, where they were displayed for the first time, as told in the Motor World. While similar in many respects, they yet reveal sundry distinguishments which entitle them to entirely separate consideration. These differences extend not only to matters of dimension, but also to such elements of design as the transmission mechanism, the suspension and the general external arrangement of the vehicles.



MARMON "THIRTY-TWO"



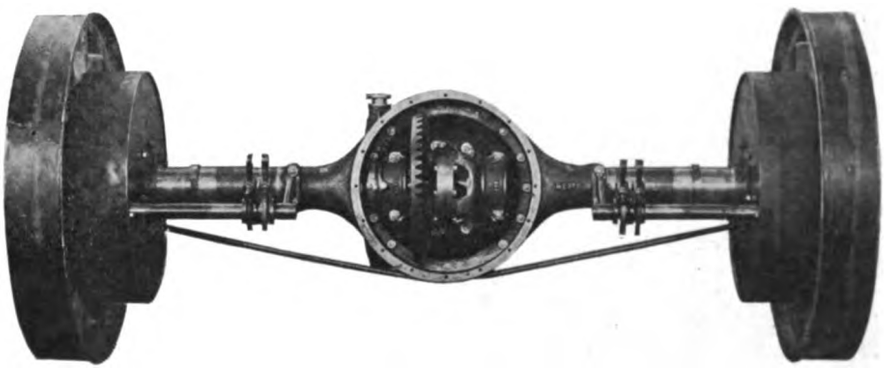
MARMON "FIFTY"

Thus Model "Thirty-two" is a low-hung, racy car with low-backed seats and somewhat the aspect of the popular roadster type, while its larger sister car is of generally heavier and more luxurious construction. The former, which mounts the new motor, recently described in these columns, has a transmission of the so-called "unit type," that is to say, mounted integrally with the rear axle and differential housing. The Model "Fifty," on the other hand, has the unit power plant which was employed on the models introduced for 1908 consumption, a straight line propeller shaft, and floating axle construction, which is at once unique and interesting to examine.

Contrasting the specifications of the two types for the sake of comparison, Model "Thirty-Two" has these features: Motor dimensions, 4½ inches bore by 4¼ inches stroke, rated output 32-40 horsepower; transmission, expanding ring master clutch, three-speed axle-mounted gearset, and floating axle; brakes, double expanding, placed side by side and equalized; wheel base, 112 inches; wheels 34 inches diameter; tires, 3½ inches; spring, full elliptical behind, 40 by 2 inches; front, semi-elliptical, 30 by 2 inches. Model "Fifty" is distinguished by a 5⅜ by 5-inch motor, multiple disc clutch, three-speed gearset, unit suspension of the power plant, floating axle drive, double expanding brakes, wheel base 118 inches, wheels, 36 inches in diameter, shod with 4 and 5-inch tires, front and rear. In both types, the frame is of pressed steel, the front axles, of I-beam section, the load being carried by ball thrust bearings, and the wheels carried on conical roller bearings.

As will be observed, a prominent distinguishing feature between the two types is the arrangement of the transmission mechanism. This is clearly brought out by the accompanying illustrations which show the rear axle construction in each case, as well as the brake mounting of the smaller car. This is the same in principle on both machines, the brakes being placed side by side in wide faced drums of unusually large diameter, heavily made and securely mounted on the wheels. The shoes are expanded through linkage balanced by means of equalizing beams, and are actuated by the usual pedal and lever movements.

From the illustration of the Model "Thirty-two" brake assembly, the novel method of adjustment will be observed. Instead of being permanently attached to the rocker arms which apply the shoes, the drag links are bolted to short arms which are loosely mounted on the rocker shafts, and carrying short worms having squared ends for the attachment of an adjusting key as required. The rocker shafts carry small worm segments into which the worms mesh, thus fixing the two together, but permitting a ready means of adjustment at any time. The alteration of the brake tension thus may be made without loosening any nuts or bolts, and by the instant use of a suitable key or socket wrench.



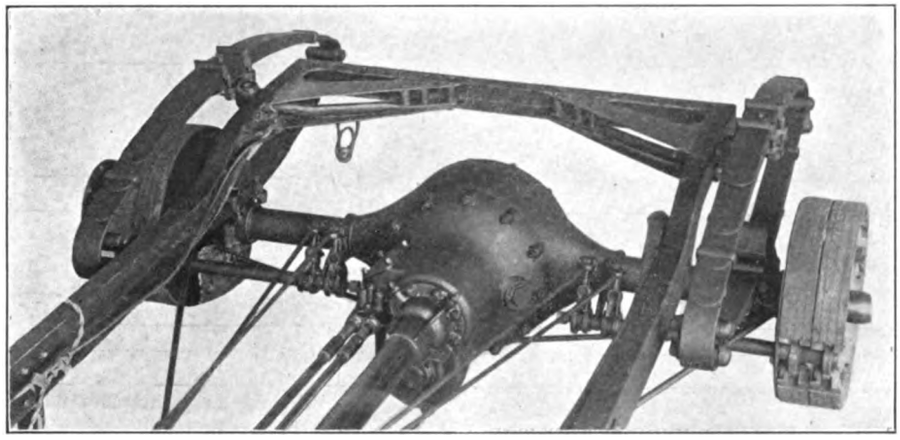
REAR AXLE SHOWING ASSEMBLY OF THE DIFFERENTIAL

The mounting of the rear end of the chas-

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sis of this model also is noteworthy, not alone because of the substantial manner in which the springs are hung, but also because of the use of diagonal braces of trussed section employed in strengthening the rear corners of the frame. The illustration shows the complete chassis at this section, also revealing the manner in which the change gear group is incorporated into the axle construction. This general principle has been used before, but the design in question is original with this vehicle.

An orginal and distinctly novel feature of this assemblage is the method of mounting the wheels. These are carried by one large annular bearing, placed nearly under the load center, while the driving stubs are flanged at the outer end and bolted directly to the hub. This gives the essential action of the more familiar hub cap drive, but lacks its uncertainty in the event of a disordered hub, since it is practically impossible for the wheel to come off without giving ample warning. This arrangement also



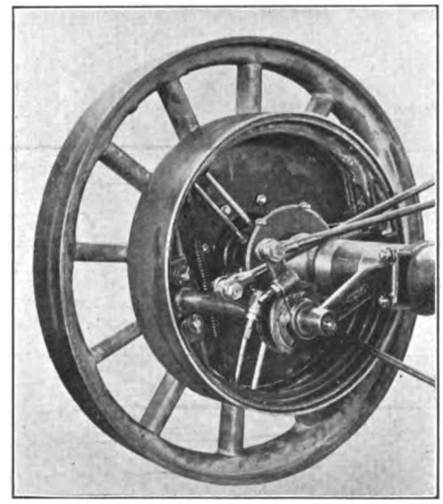
MARMON "THIRTY-TWO" SUSPENSION AND TRANSMISSION

The mechanism is selective in principle, the lay shaft lying below the main driving elements. The arrangement is so contrived that the entire aggregation may be removed from the housing without dismounting anything further than the cover plates at the top and rear end, while the spherical form employed is calculated to give strength with a minimum use of metal. Surprising though it may seem, this construction adds less than 20 pounds to the weight of the complete axle—which serves as an effective answer to one of the arguments commonly advanced against this system.

In the larger car, the multiple disc clutch has 9 steel plates and 10 of bronze, with cork inserts, the whole being enclosed in a casing positively atached to the fly wheel. The gearset is mounted entirely on annular ball bearings, as is that of the smaller machine, and is so contrived that no gears are in action while the direct drive is engaged.

The massive construction of the rear axle equipment of this machine is shown in the illustration, which also shows the method of actuating the brakes. These are of 2-inch face and 17 inches diameter, as against 2-inch face and 14 inches diameter on the other car. They are actuated by means of expanding cams, worked by direct linkage, and are held out of action by heavy springs, which draw them against adjustable stops. The differential and bevel driving group is so constructed that it can be removed from the rear of the casing when the cover plate has been taken down, so that access to any of the parts may be had with but small expenditure of time and labor.

permits an unusual wheel design, since the axle attachment affords a very large hub, without overhang and presenting a practically flat surface on the outer and exposed side. The greater part of the load is carried by the single bearing, as stated. The steadying effect necessary to preserve align-



EMERGENCY BRAKE CONSTRUCTION

ment, is supplied by the outboard differential bearing in each case, the long leverage of the driving stub itself, serving to reduce the pressure to a relatively small and easily compensated amount at the center of the axle.

With the exception of these features, the design of both models is much in line with the ordinary practice of the day. Both have a road clearance of 10 inches, but are designed to give a low-hung effect which is deceptive in that respect as well as convenient. In the "Fifty" car, the cast metal body, which has been a Marmon feature in past seasons, is continued. The smaller car, however, is equipped with a sheet metal body.

Keeping Enclosed Brakes Clear of Grit.

Although the modern types of internal expanding rear wheel brake are so contrived that they are well protected from dust and dirt, it by no means follows that they do not require cleaning or that they are not apt to suffer from the effects of continued service under ordinary road conditions. The very fact that the brakes are enclosed makes it practically impossible for any dirt which may work into the drums to work out again under its own impetus. The result is that after a time a certain amount of finely pulverized grit will be found in the casing where it acts as a powerful and destructive abrasive. On this account the cover plates of all brake housings should be removed occasionally and the interiors thoroughly flushed out with gasolene.

Testing the Movement of the Wheels.

When inspecting the mechanism of the car it is well to jack up each of the rear wheels in turn in order to observe whether they revolve freely. When there is an appreciable amount of resistance to motion the fault may lie with the dragging of the brakes, with the differential mechanism or with the rear portion of the transmission. In either case the cause of the difficulty may be traced out readily. If the resistance is noticeable on one side only, the remedy is usually obvious and may be applied at once. Otherwise it may be more difficult to sift it out, though none the less important.

Closing Leaky Gaskets in Couplings.

Leaking gaskets in flanged couplings of the exhaust piping may sometimes be closed by merely calking the asbestos filler with a thin, flat chisel or screw driver. More often, however, it is necessary to break the joint and replace the gasket with a new one. In doing this, care must be observed in order to draw up both flanges uniformly. Otherwise, the unequal pressure on the two sides will be a stimulus to further leakage. Obviously the proper joint can be made only when the two sections of piping are perfectly in line.

To Avoid Danger in Cranking.

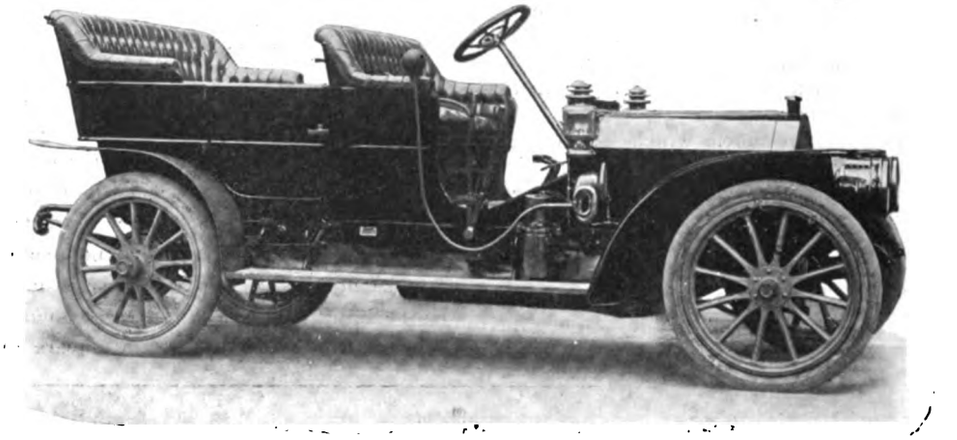
Because of the danger when cranking, it is important that the connections between the timer and the hand lever be examined occasionally to see that there is no danger of the former getting adrift. In case this should occur the spark remaining advanced despite the location of the lever in the retard position would be apt to cause serious trouble.

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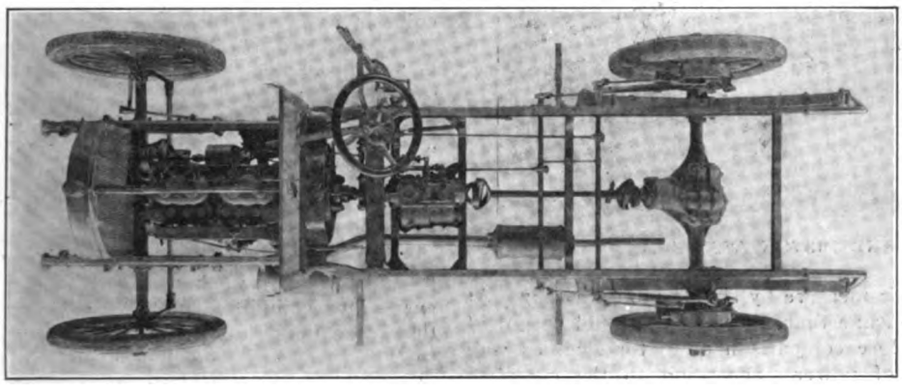
COLUMBIA IN TWO NEW MODELS

Mark "XLVIII-3" a Modification of Earlier Light Touring Car—Mark "LXX" an Electric Vehicle.

During the tenure in office of Messrs. Halsey M. Barrett and Henry W. Nuckols, receivers of the Electric Vehicle Co., Hartford, Conn., but little has been heard of manufacturing activities at the big plant which for so long has been identified with the name Columbia as applied to motor vehicles. Nevertheless, considerable has been accomplished in the way of clearing up the models which were already under way, and latterly in the production of a couple of new types, one of gasolene and the other of electric propulsion. Of these, the former is to be known as Mark "XLVIII-3", and is to follow in general the design of the former light touring model which thus is carried over practically into its fourth year. The electric vehicle now being produced is known as "Mark LXX," and is of the popular Victoria-Phaeton pattern. In both instances, work has progressed to a point where the machines are in readiness to be placed upon the market, and are in the actual stages of production.



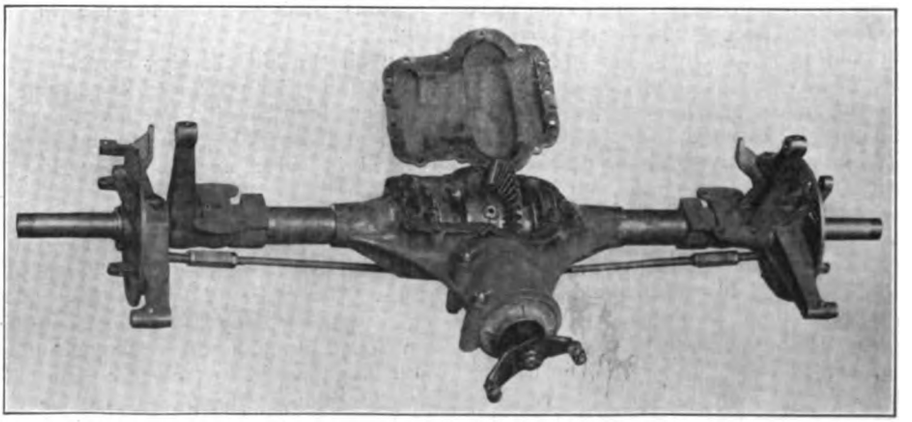
COLUMBIA MARK "XLVIII-3"



COLUMBIA MARK "XLVIII-3" CHASSIS

As indicated, "Mark XLVIII-3" already is familiar in its general aspects. As illustrated, it embodies these specifications: Motor, 4¼ by 4½ inches, bore and stroke; transmission by leather-faced cone clutch, selective sliding gearset, affording direct drive on high, propeller shaft and live rear axle; wheels and tires, 34 by 3½ and 34 by 4 inches; wheel base, 115 inches; tread, 56 inches.

The motor has cylinders formed in paired castings with the valves all on one side. An unusual feature of its construction is the use of non-interchangeable valves, the inlets being of 2¼ inches, and the exhausts 1 13-16 inches diameter. The power rating in accordance with the usual formula is 29 horsepower, or a trifle under. The construction of the crankcase, which is here illustrated, has been modified in the latest patterns to permit the adoption of a support for the valve and megneto shafts outside the gears. This is accomplished by the use of annular ball bearings mounted in the forward section of the case—as shown in the illustration. The gears are now of the spiral type with faces of increased width, making for longer life, reduced wear and more silent operation.



COLUMBIA MARK "XLVIII-3" REAR AXLE

Ignition is of the low tension, make and break type, the Bosch instrument now being employed to generate the current. The igniter plates are of drop forged steel, ground to size.

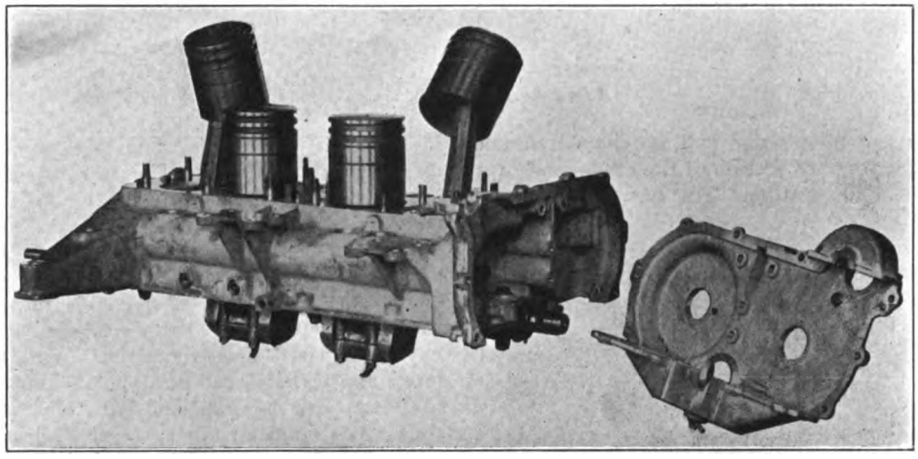
In the actuation of the three-speed gearset, is to be found the unique system which, in principle has been employed on this model from the first. The gear striking lever, instead of picking up the striking rods by direct connection within the gear box, is made to engage one or the other of two short rocker arms which are mounted on the extremities of a couple of telescoping actuating shafts. These arms have a squared jaw connection with the lever, and being placed on opposite sides of the lever can be engaged only one at a time. The chief advantage of the selective system is thus preserved, and it is impossible to slip over from one gearset into the other accidentally.

The propeller shaft, as shown in the accompanying illustration of the chassis, is equipped with universal joints of the yoke type, as is the driving shaft between the master clutch and gear box. The floating rear axle construction has been altered this year by the moving outward of the strut rods on the casing in such a way as to allow a greater amount of clearance. Another feature which is an innovation at this time is the standardization of the frame lengths and wheel bases for all models,

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whether of the touring, limousine or landaulette types. The standard equipment is that shown, but the two types of closed body also are produced, the interchangeable feature eliminating all differences except those of the tire sizes. These for the closed cars are the same, except in the rear, where 34 by 4½-inch tires are employed instead of 34 by 4-inch.

The electric vehicle which is now being produced, in a general way preserves the original design of the victoria-phaeton which was first offered to the public in 1905, and has since been continued with only such minor changes as have been required to bring it up to time. In the new lot but three significant alterations have been made over the previous series. The most striking of these is the installation of annular ball bearings on all of the wheels. In addition to the regular hub brake, an emergency brake has been added, which is applied to a drum on the countershaft of the motor transmission. The third important change is in the increase of the battery capacity by the addition of two more cells to the regular equipment. The complete battery is thus composed of 32 cells, divided into two groups so disposed as to apportion the weight equally between the front and rear wheels. They are of the Exide "9 PV" type. The rating for the radius of action is placed at the conservative figure of 40 miles. The controller is simple in design and easy to operate. It provides four forward speeds, affording approximately 4, 7½, 12½ and 16 miles per hour, respectively, and two speeds in the reverse. On the second reverse speed, which is obtained by a backward movement of the lever, the carriage develops its maximum power at a low speed, thus enabling the driver to back out of any unusual depression in the highway and to avoid difficulties in turning around in narrow quarters with steep gutters on each side. The wheel base of the vehicle is 70 inches, the tread 48 inches, and the wheels are 30 inches in diameter, shod with 3½-inch pneumatic tires, front and rear.



CRANKCASE WITH CRANKSHAFT AND PISTON ASSEMBLY

REFORMATION IN POWER RATING

Purdy Suggests Adoption of "Circular" and "Cylindrical Inches"—Typical Equations to Illustrate the Idea.

New possibilities are injected into the much-vexed question of the proper method of power rating for automobile motors by the suggested adoption of the units of "circular" and "cylindrical inches" in place of the complete values of square and cubic inches as at present used. The signification thus brought about would be merely in the mathematical sense, as the figures could be converted into the more familiar square and cubic measure by simple multiplication. At the same time, the method would permit of a close comparison of motor sizes as well as of powers, according to the complete plan, on a basis of simple figures. The originator of the idea is Frederick Purdy, engineer in charge of the testing laboratories of Thomas B. Jeffery & Co., who has developed it upon the analogy of the "circular mil" system employed in electrical calculations and in current use in that field.

"In all the hill climbing contests which have come under my notice, the engine ratings have been based on the piston displacement, and invariably the volume is expressed in cubic inches," remarks Mr. Purdy.

"This is one of the mathematical absurdities that have descended through generations and have produced mental habits hard to break. Always we think of volumes as having rectangular boundary lines and we must convert all forms, however regular and common they may be, to the cubic form before we can compare them. So also we think of surfaces and sections as squares, hence our units of area are always square and we go on converting the value of circles and cylinders and spheres into terms of squares and cubes, for each equation, requiring the use of a long decimal multiplier or divider, wearing out gray matter, better devoted to more useful service.

"When we get away from this worship of the rectangular god, we are free to set up a new and convenient rule for comparing volumes and areas. Or, in other words, when volumes or areas of like form are to be compared with each other, the unit of measurement should be of the same form.

"The electrical people have adopted the "circular mil" as the unit of sectional area for wire and other conductors, which is much more convenient that a square mil for it requires only that the diameter in .001 inch be multiplied by itself to give the sectional area, and the diameter in .001 inch of a wire of any desired area expressed in circular mils, is the square root of the area.

"Thus, D^2 = area is a much shorter equation that 0.7854 D^2 = area, or 3.1416 R^2 = area, and for purposes of comparison a much better one.

"Why should not the engine builders and users adopt the cylindrical inch as the unit of piston displacement and cylinder capacity? Then the equation for displacement would be D^2 L = volume: the proportion would remain the same as if reduced to cubic inches.

"Thus the displacement of a cylinder 4 inches in diameter with 6-inch stroke = 96 cylindrical inches or 75.3984 cubic inches. Or, the displacement of a 6-inch cylinder with 5-inch stroke = 144 cylindrical inches or 115.0976 cubic inches.

"Since 96 : 144 :: 75.3984 : 113.0976, it is just the same.

"It is as easy to convert the volume of irregular cavities such as the compression space into cylindrical units as cubic units, the ration between them being of course 1 to 0.7854. The sectional area and volume of intake and exhaust pipes, the area of any circular opening such as valve ports could best be expressed in circular and cylindrical inches. . . . .

"There should also be a standard of speed at which an engine is rated or rather there should be two points at which a variable speed engine such as used in an automobile should be rated.

"Various compressions and valve timing may give an engine a high power at high speeds at the sacrifice of power at low speed and vice versa, so it is hardly fair to compare two engines of the same bore and stroke at only one speed. Hence a rating should be given at a point between 400 and 600 r. p. m. (the normal running speed) and between 1,200 and 1,600 r. p. m. (the point of greatest output).

"The power curve in most engines rated at from 30 to 50 horsepower is a rising one up to from 1,200 to 1,600 r. p. m. At some point in this range, the inertia and other losses which are rapidly rising, compensate any increased power due to speed, the curve flattens out and shortly begins to drop. Why not establish these extreme points in some engineers' convention as a standard of speed for power rating?"

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GABRIEL WITH ADAPTABLE TONES

The 1909 Model to Emit Soft Musical Sound in Cities—More Penetrating Note for the Rural Roads.

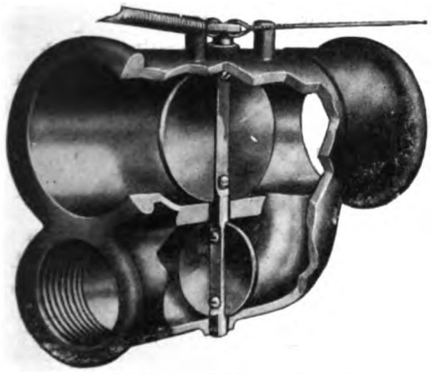
By the equipment of an ingenious device, the new Gabriel horn which has been produced for the season of 1909, may be confined to one soft musical tone for urban use or the three notes may be raised in unison as a penetrating herald on rural highways. As shown in the illustration, the 1909 Gabriel is of the single tube, three note type, resembling the 1908 model in exterior appearance. It will be supplied by the Ga-



NEW MODEL GABRIEL HORN

briel Horn Mfg. Co., of Cleveland, O., in four sizes, as different sizes are required for various motors according to their power. The gradations in size are calculated with a view to providing in each instance the proper capacity for disposing of the exhaust without causing back pressrue.

Back pressure is also provided against in the 1909 cut-out valve which is supplied for the control of the Gabriel. The picture shows that the valve disc in the main exhaust channel is at right angles to that in the channel which directs the exhaust gases to the horn. When the controlling lever on the top of the valve is turned to sound the horn, the disc in the auxiliary channel opens at the same rate that the main channel disc closes, as the two are mounted on the same



GABRIEL HORN CUT-OUT

spindle, the result being that there is no piling up of back pressure. The construction also provides for a cut-out which affords a direct opening to the air that is 1¼ inches across and is supplementary to the regular outlet through the muffler. When the cut-out is being employed, the exhaust has both the muffler and the direct opening through which to escape, giving a maximum of free discharge. In addition to considerations of correct theory and mechanical efficiency, the Gabriel valve is of a detail design which makes provision against the possibility of leakage when the valve is closed and precludes the rattle, whistling and noise which are the conspicuous fault of poorly constructed devices intended for the control and direction of the exhaust. Suitable valves to fit all standard sizes of iron pipe or steel tubing, ranging from 1 inch to 2½ inches outside diameter are available.

The most recent addition to the Gabriel family has been the Gabriel shock absorber, which is subject to several refinements and changes over past models for the 1909 season. In the new model, as is indicated by the illustration, there is no change in principle. To the body of the car is attached a friction pad which moves vertically between the spring side plates of the member attached to the axle. The two sides converge at their ends, so that the friction pad has a comparatively free movement while it is at the middle, but is increasingly compressed and restrained in its movement as it is forced toward either end. Thus an extreme upward or downward movement of the axle in relation to the body of the car is resisted and a normal relation soon re-



GABRIEL SHOCK ABSORBER

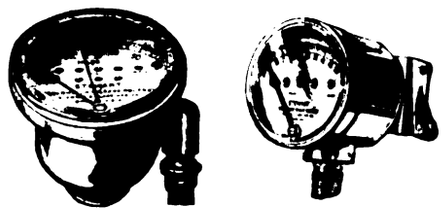
established. The 1909 model has a new method of fastening the friction pad to the body of the car, in order to provide for end motion. The fastening stud has a movable bearing to replace the former rigid connection. An increased bearing surface for attaching the channel member to the axle is also a feature. In this way all the various motions which the axle and the body suffer in relation to each other are provided for, and noise and rattle in the absorber are prevented. A new friction material is used for the sliding friction pad, whereby the effectiveness and durability of the absorber are greatly increased. Tests by the manufacturer are said to have demonstrated that the new material will permit a friction pad to be operated for from twelve to fifteen thousand miles riding without replacement, after which new friction surface may be put in at slight expense. Attachments and proper resistance plates are made for every size and weight of car.

"The A B C of Electricity." Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

VARIETY IN SPEED INDICATORS

Two New Stewart Speedometers for the Season of 1909—Noteworthy Improvements in Older Models.

Little complaint can now be offered by either the dealer or the owner as to limitations on the variety of speed indicating devices that are offered for choice, as the number of models presented and the great range of prices that are to prevail for the coming season afford a market that admits of wide selection. Most of the established



STEWART, MODELS "12" AND "13"

makers have brought out additions to their lines for 1909, together with variations in previous models. In accordance with this policy, the Stewart & Clark Mfg. Co., of Chicago, Ill., have added two new models of the Stewart speedometer, which are designated as models No. 11 and No. 12, and which are to sell at $25 and $15, respectively.

By mounting the indicator hand in the center of the dial, it has been made possible in the No. 11 model to use a scale about three times as long as that ordinarily employed on instruments of this kind, the graduations, as will be seen in the illustration, extending about three-quarters around the face, which is 4 inches across

In the No. 12 model, which sells at $15, the mechanism is similar to the $25 model of the past season. The dial is 3 inches in diameter and in addition to the speed indicating hand, the face bears a 10,000 mile,



STEWART SPEEDOMETER, MODEL "11"

season odometer. The speed scale gives a maximum of 50 miles per hour.

For high speed work the model No. 5 is offered, with a scale reading to 90 miles per hour maximum. The instrument which this model supplants listed at $75, but the new model retails at $50, and is equipped with a maximum speed hand. For those who are satisfied with a lower maximum on the speed scale, the No. 4, at $40, is suitable, being a duplicate of the No. 5 in all its features except the 90 mile reading.

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NEW PROBLEMS IN ROAD BUILDING

Commissioner Shanks Sees Changed Conditions—They Must be Met, He Tells Indiana Commissioners.

Taking the position that automobiles promise to be as much a part of the settled order of things as the highways themselves and that it is theferore useless to berate them for raising dust on ordinary roads, John G. Shanks, of Washington, Ind., told the county commissioners of Indiana that they must get over the idea that they "are living in the day of the saddle and the pack horse" and should build their roads to meet modern conditions. As Shanks is a county commissioner himself, representing Davies county, and knows considerable about highway construction, his speech at the convention which was held in Indianapolis, Ind., is calculated to have effect.

"There was a time," he declared, "when the wear and tear on the roads was not very great. But the time has come when any road built of anything but the best and most durable material, is going to show signs of wear in a very short time. This is true because of the increased use of automobiles and other similar vehicles, all of which ruin an ordinary road. It is a question of eliminating either automobiles or our present system of building roads.

"It has been shown time and again," he said, "that the ordinary road is not able to stand modern traffic. It becomes one of our greatest engineering studies to decide upon materials that will stand the strain. Before entering into a contract for the construction of public highways, it is up to every commisioner to consider the nature of the traffic in the particular vicinity and to select the roadbed material accordingly, having in mind the motor vehicle trafic, especially."

St. Paul Plans Thorough Road Marking.

Upon coming within a radius of 100 miles of St. Paul, Minn., it will be an easy thing for the motorist to find his way about, if the sign post plans of the St. Paul owners are carried out on the scale that has been projected. Not only the members of the St. Paul club, but non-members as well, are contributing to the fund. While strangers will be welcome to all the benefits of the thorough posting of the corners and byways, it is the St. Paul and Minneapolis contingents that will reap the most advantage, as drivers from those cities frequently get lost among the interlacings of the many roads leading to the various lakes and resorts, due to lack of proper finger posts.

Opening Paradise Valley to Motorists.

To make Paradise Valley and the beautiful Mount Rainier region in the State of Washington more accessible to motorists and tourists, an active effort is being made by commercial clubs, chambers of commerce and good roads associations thereabouts to have good roads in the district. An appropriation of $50,000 is to be asked from the Federal government, which amount when added to the sums raised locally, will permit the completion of several highways as yet unfinished, and the projection of new ones that will exploit the scenes of the mountains.

Chicago Begins an Anti-Smoke Crusade.

Following New York's lead, Chicago has decreed against smoking motor cars on the boulevards and in the parks. In fact, the Windy City is even more particular about the cars that may use its pleasure vehicle highways than is Manhattan, because no car that is not properly washed and groomed can pass the warning policemen who "shoo" away the undesirables. On a recent afternoon 100 park policemen were put at the park and boulevard entrances to enforce the new regulation, and over 800 cars were turned away, either because they were unwashed and dirty, because they dripped oil, or because they emitted offensive exhaust. "The automobile immaculate" is the standard that is being insisted upon by the authorities controlling Chicago's parks and boulevards.

Motor Cars Curing Equine Nervousness.

That motor cars have reduced horse runaway accidents on the city streets is the conclusion reached by several acute observers of metropolitan and urban phenomena. This reduction is not brought about by the supplanting of the horse, but as a result of the reduction of equine nervousness that has been brought about by getting accustomed to automobile traffic. After learning to regard calmly the swift passage of roaring, snorting, fire spitting, gear clatterng machines of all types, no trivial adventures are sufficient to make an experienced horse unruly.

Bucks County Motorists Organize a Club.

To fight speed persecution and to get good roads, the Bucks County Automobile County Automobile Club organized at the home of the Bucks County Country Club, Langhorne, Pa. The presidency was given to Dr. Harry Lovett, of Langhorne, while Ellwood Watson was chosen secretary and treasurer.

Raleigh Automobile Club Organizes.

Raleigh, N. C., is the home of the newly formed Raleigh Automobile Club. The officers elected at its first meeting are: R. D. Godwin, president; James L. Thomas, Jr., vice-president; John A. Park, secretary; and L. A. Mahler, treasurer.

Boys Form an Automobile Association.

High school boys in Alameda county, Cal., have formed the Amateur Automobile Association. Edward Chamberlain and George Ogden, of Berkeley, Cal., have been chosen president and secretary.

PREDICTS GREAT MOTOR HIGHWAYS

Capitalists Projecting Two Pioneer Interstate Roads, Says Hassam—New York to Boston Scheme Reviving.

Motor highways connecting Chicago Pittsburg, New York and Boston are not at all unlikely in the near future, because of the rapidity and economy with which special automobile roads can be built, according to Captain Walter E. Hassam, of Worcester, Mass. Capitalists are evincing a great interest in such projects, he says, and two pioneer roads are already projected. A group of Boston men, he declares, are considering reviving the scheme for a road between New York and Boston, while a Chicago to Pittsburg motor road is being actively projected in the Windy City.

As a result of his work in constructing the Motor Parkway on Long Island, Hassam comes into contact with nearly everybody that is nursing an enterprise of this kind, and because of the vigor with which the question is being taken up in various parts of the country, he foresees that it will not be a great while before many of the main highways between large cities will be paralleled with concrete roads exclusively for motor cars.

A particular feature of Hassam's method in motor road construction, is the use of wire netting between a lower and upper layer of stones. After the upper layer has been pressed down with a steam roller so that the bottom of the stones project through the wire netting, concrete is poured in, binding the stones, the netting and the concrete itself in a solid mass. One ordinary crew can construct a mile of such road in three and one-half days, it is claimed, and after it has been given a proper opportunity to set, the passage of time will make it harder the older it gets.

Motorphobia Delays Jury Trials.

Popular prejudice against automobiles and their owners is so general in Columbus, O., as to make it very difficult to fill out a jury in damage cases where automobilists are defendants. In a recent case of a $1,000 suit brought by a rural mail carrier against a motorist whose car, it was alleged, frightened the carrier's horse, the trying of the case was delayed for a long time by the fact that most of the men summoned to act as jurors openly expressed their enmity toward all operators of motor vehicles, as a class.

Forbids Use of Streets as Garages.

Automobile agents who make the street in front of their establishments a show room for the cars they handle have been called to account in Wichita, Kan. The police are taking active measures to break up the practice, and threaten arrest if it be continued.

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The Week's Patents.

893,502. Motor Vehicle. Russell Huff, Detroit, Mich., assignor to Packard Motor Car Company, Detroit, Mich., a Corporation of West Virginia. Filed Dec. 18, 1907. Serial No. 407,054.

1. In a motor vehicle, the combination with the frame, the steering column, the forward spring, and the bracket depending from the frame and connected with the spring, of a steering gear casing having two arms, one of which is attached directly to the frame and the other to the said bracket.

893,549. Axle. David E. Ross, Brookston, Ind., assignor to Ross Gear and Tool Company, La Fayette, Ind., a Corproation of Indiana. Filed Sept. 11, 1906. Serial No. 334,128.

1. As a new article of manufacture, an axle made in the form of an I-beam, said axle being formed of a single piece, and having a receptacle for the gears within the flanges of the I-beam.

893,655. Cushion Tire. Charles L. Rempes, Akron, Ohio. Filed Aug. 6, 1906. Eerial No. 329,418.

1. A cushion tire comprising a shell having outer members with reinforced annularly corrugated edges and a central, radially extending reinforced supporting rib formed integral with the central portion of said shell; said rib having a wedge shaped inner edge projecting between the inwardly turned edges of outer members; substantially as described.

893,656. Internal Combustion Engine. Sigurd I. S. Ringi, Stockholm, Sweden, assignor to Motoraktiebolaget Reversator, Stockholm, Sweden. Filed Dec. 12, 1906. Serial No. 347,471.

1. In devices for actuating a valve appertaining to a four-stroke internal combustion engine, the combination of a disc having cam-slots forming two paths therein, a sliding piece adapted to describe one or the other of the said paths according to the direction of rotation of the engine, means actuated by the said sliding piece for operating the said valve, and means for causing the sliding piece to pass in less than one revolution of the disc from the one path into the other, when the direction of movement of the engine is reversed, substantially as and for the purpose set forth.

893,672. Tire for Vehicle Wheels. Reuben Stutsman, Des Moines, Iowa, assignor to The Bartholomew Company, Des Moines, Iowa, a Corporation of Iowa. Filed July 16. 1897. Serial No. 644,799.

1. A rubber vehicle tire consisting of a piece of rubber having an aperture longitudinally through it and a wire inserted in said aperture, the wire having at one end a tubular portion, and its opposite end being passed through the said tubular portion, and having its free end coiled about the portion of the wire immediately back of the tubular portion, substantially as set forth.

893,675. Distributing Gear for Explosion Motors. Max Thier, Eufurt, Germany. Filed March 18, 1904. Serial No. 200,447.

1. In a distributing gear for explosion motors, the combination with a rotary cylinder having two grooves in its circumferential surface, of a crossing of said grooves, a shoe adapted to slide in said grooves and to be moved by the same, a lever connected with said shoe and adapted to be actuated by the same, and means for causing the shoe to pass through said crossing or to evade the same; another lever adapted to be oscillated in a plane located at right angles with respect to the first lever and carrying the same, means for oscillating the second lever so as to cause this lever to oscillate the first lever in the same direction, substantially and for the purpose as described.

893,677. Resilient Wheel. John C. Turnage, Richmond, Mo. Filed Oct. 7, 1907. Serial No. 396,284.

1. A wheel having a rim provided with transversely disposed perforations, a tire surrounding the rim and being spaced from the same, coil springs interposed between the rim and the tire, plates attached to the tire and having upon their inner sides recesses adapted to receive the coil springs when they are expanded laterally and bolts passing transversely through the side plates and the perforations o fhe rim.

893,680. Shock Absorber. Lewis S. Watres, Scranton, Pa. Filed June 26, 1907. Serial No. 380,863.

1. The combination with a spring, of a shock absorber comprising a pair of non-rotary members and a rotary member, said rotary member having threaded engagement with one of said non-rotary members and having frictional engagement with the other non-rotary member, and anti-friction bearing balls interposed between the said rotary member and the latter noted non-rotary member, and so arranged that under compression or cushioning movements of said spring the said rotary member will be rotated under but slight frictional resistance, while under recoil of said spring the said rotary member will be pressed into engagement with the said latter noted non-rotary member and will be rotated under frictional resistance, substantially as described.

893,712. Starting Device for Explosive Engines. Julian F. Denison, New Haven, Conn., assignor of one-half to John E. Mar, West Haven, Conn. Filed Dec. 13, 1904. Serial No. 236,654.

In an explosive engine, the combination of a plurality of cylinders, a source of fluid pressure supply; means for admitting fluid pressure into each of said cylinders in succession to start said engine, said means comprising a valve plug inserted in the side wall of each cylinder respectively, a common valve-controlled connection between the fluid pressure supply and each of said valve plugs, a passage in each plug opening into the cylinder, a valve controlling said passage normally spring-pressed to seated position, and adapted to be actuated in either direction by fluid pressure, a second passage connecting said valve plug with the pressure connection aforesaid, a valve controlling said passage and having a stem projecting outside of the plug, a spring between the outer end of said stem and the plug tending to seat the valve; a passage connecting the aforesaid two passages in the plug; a cap-plate for said plug providing a guide for the first mentioned valve in the plug; an eccentric and rod for each of said last named valve-stems operated from the crank shaft of the engine, said eccentrics being so relatively disposed upon the shaft that one of said valve stems will be actuated by its corresponding rod in every rotatable position of the shaft, and means for guiding said rods.

893,715. Vehicle Wheel. Ezra Fishburn, Overbrook, Kan. Filed Sept. 10, 1907. Serial No. 392,094.

1. In a vehicle wheel, the combination with the peripheral covering secured together with lacing to the felly of the wheel a cushion tire, cable wires passed through said tire, a felly, a metal band passed around

WANTS AND FOR SALE

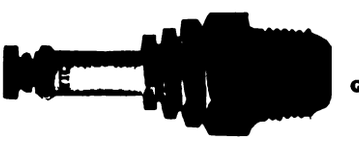
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said felly of angular lower stationary and upper movable T-shaped plates, thimbles secured to the inner surfaces of the upper T-shaped movable plates and the angular lower stationary plates and springs having their ends located in the thimbles.

893,779. Drive Chain. William M. Butler and Warren J. Belcher, Hartford, Conn., assignors to The Whitney Manufacturing Company, Hartford, Conn., a Corporation. Filed Jan. 15, 1908. Serial No. 411,007.

1. A drive chain consisting of blocks, and side plates to pivotally unite said blocks, said side plates extending beyond the lower edge of the blocks, a strip of pliable material to encircle each pair of side plates, there being teeth on the lodew edges of the plates to extend through the meeting adges of said strip, the ends of the teeth being bent over to secure the strip in position.

893,780. Drive Chain. William M. Butler and Warren J. Belcher, Hartford, Conn., assignors to The Whitney Manufacturing Company, Hartford, Conn., a Corporation. Filed Feb. 8, 1908. Serial No. 414,940.

1. A friction drive chain comprising pivotally connected elements, a flexible covering strip extending transversely around each alternate element, and a fastening device to engage the abutting ends of each strip to tightly secure the covering strip to the enclosed chain element to prevent the latter from slipping.

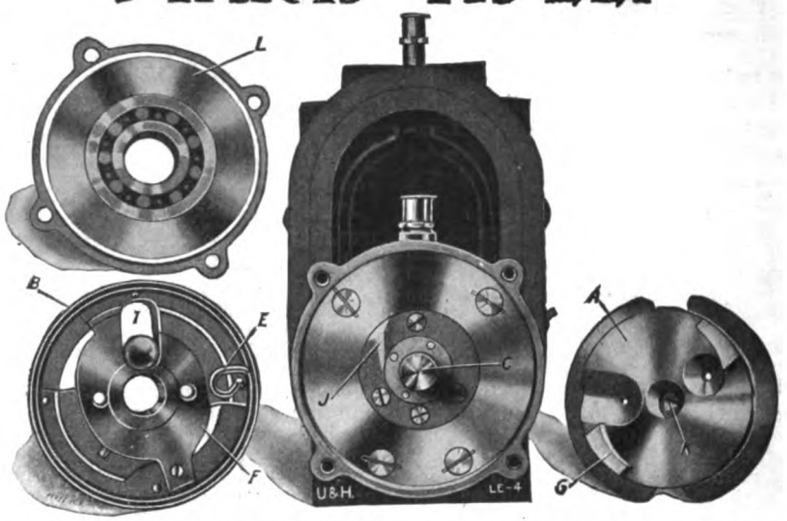
983,787. Friction Drive Chain. Edward J. Conklin, Walden, N. Y., assignor, by mesne assignments, to Whitney Manufacturing Company, Hartford, Conn., a Corporation. Filed June 28, 1907. Serial No. 381,187.

1. A drive chain comprising blocks and plates and a casing therefor comprising a series of pieces secured to the inner surface of the blocks and plates of said chain, and a second series of pieces secured to the outer surface of the same, the first series of pieces being bent inward against the sides of the chain and into contact with the second series of pieces, and means for securing said pieces to the blocks and plates of the chain, as described.

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A, reverse side of steel driving disc; B, special bronze disc which slips over end of armature shaft C, and drives armature; E, end of coil spring engaging steel disc A, by means of pin (not seen) in front face. The other end of E is attached to B. F, G, co-acting cam-shaped faces which act as stops; J, stationary steel face cam; K, hollow shaft projecting from front of A and carrying driving gear; L, cover plate (reversed).

A slips over C following B, and drives B counter-clockwise through the tension of spring E, which holds faces F G together. When cranking, the steel ball in slot I drops into engagement with cam J and is forced against the flat face of A, thereby holding B and the armature against rotation. A continues to turn until the radial depression meets the ball, which slips into the depression and releases B. The spring carries B quickly past the firing point until faces F G come together. This gives maximum spark with retarded timing.

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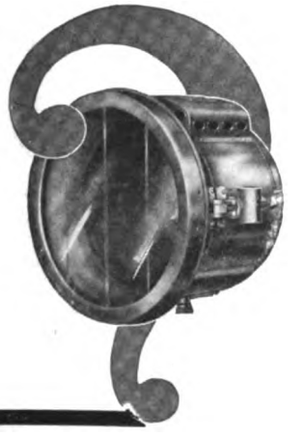
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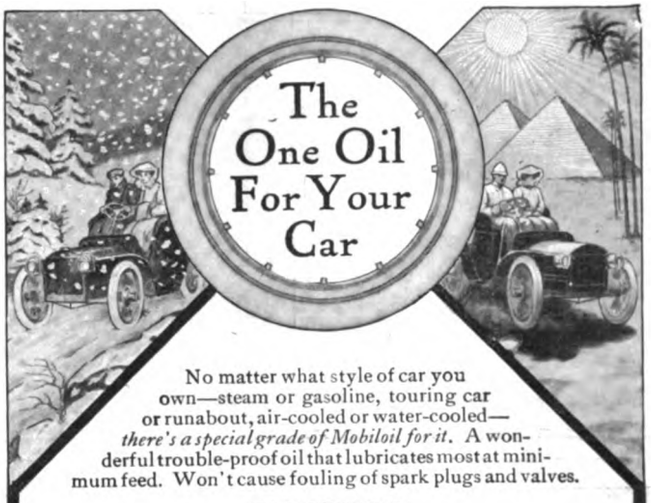
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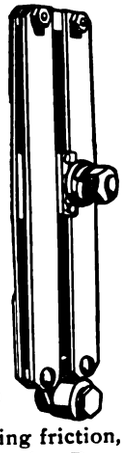
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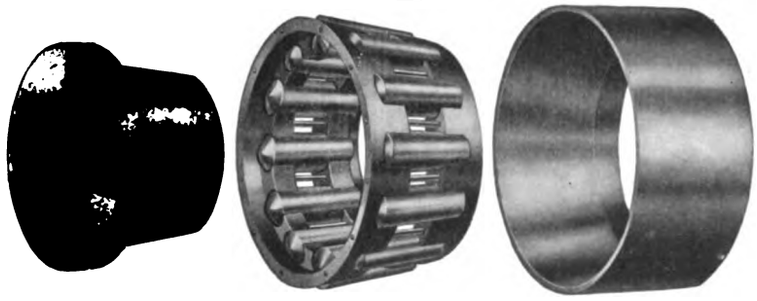
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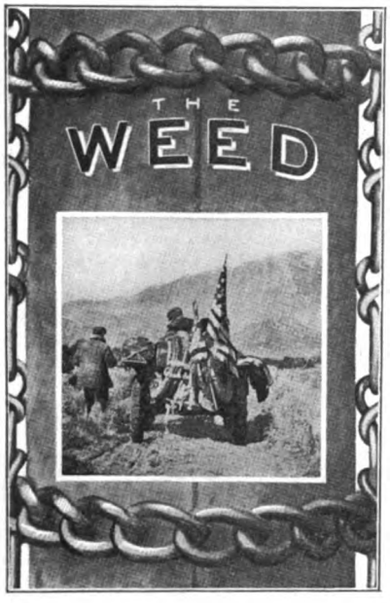


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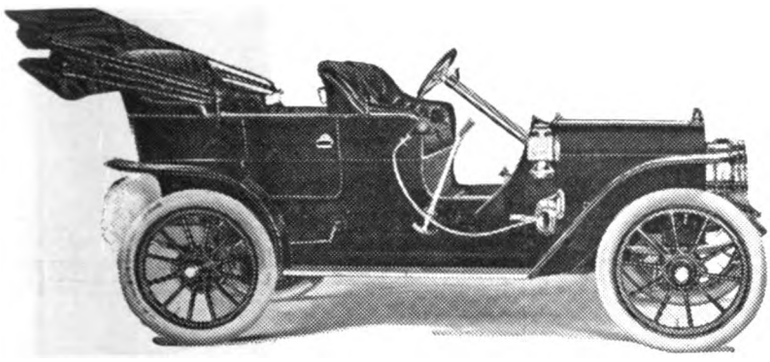
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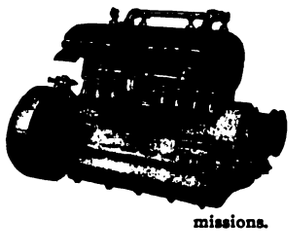
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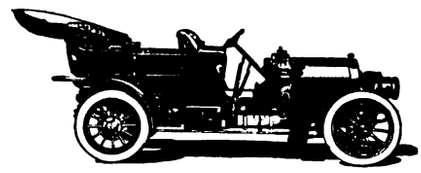
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Are the most economical. Do not deflate when punctured.
DOW TIRE COMPANY,
2000 Broadway, New York.
889 Boylston St., Boston, Mass.

Type C.
PENNSYLVANIA
"FIFTY"

We had the **best** car in America. We thought for a long while how to improve it and **left it alone.** You think that over.



Touring Car, Baby Tonneau or Roadster bodies, with double ignition, $3,000.

Pennsylvania Auto Motor Co.
BRYN MAWR, PENNSYLVANIA

THE 28-30 H. P. MITCHELL, $1,500

Includes genuine $150 Splitdorf Magneto (free) and ½ inch larger tires than you get with any other car at this price. To have other cars equipped with these tires you must pay $50 extra. Write for full information to-day.

MITCHELL MOTOR CAR CO.,
571 Mitchell St., Racine, Wis.
Standard Manufacturers A. M. C. M. A.

A DUPLICATION, NOT AN IMITATION OF LEATHER.

AUTOFOID is a peculiar name. Try to remember it when next you are ordering material for tops, cushions, etc.

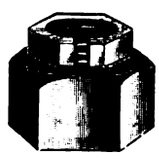
AMERICAN LEATHERETTE MFG. CO
Buffalo, New York.

Studdard-Day.
ONE Quality for ALL Models
ONE Price for ALL Buyers
Write for 1909 Catalog.
THE DAYTON MOTOR CAR CO.,
Dayton, O.



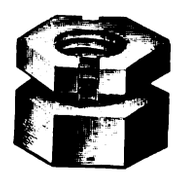
The Ball Transmission FOR Automobiles & Motor Boats
NEW YORK GEAR WORKS.
56 GREENPOINT AVE., BROOKLYN, N. Y.





A Necessity On Automobiles—WHAT?
COLUMBIA LOCK NUTS

CANNOT shake loose. They add an important factor of safety and give a feeling of security. Columbia Lock Nuts are the best kind of accident insurance. Used by most makers of the best cars and by leading railroads, etc. Send us a two-cent stamp, size and thread of the bolt, and we will forward a Columbia Lock Nut for it.



COLUMBIA NUT & BOLT CO., Inc., Bridgeport, Conn.

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How Are Your Batteries?

A CONNECTICUT VOLT AMMETER WILL TELL YOU

Guaranteed, and the price is right, send for catalogue and trade discounts.

CONNECTICUT TELEPHONE and ELECTRIC CO., Inc. Meriden, Conn.

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1620-22-24 Broadway, New York

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PALMER & SINGER MFG. CO.

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MAGNETOS

Are The Best—They have proved it

LAVALETTE & CO., 112 West 42nd Street, New York

THE MORE YOU THINK OF IT
THE MORE YOU THINK OF IT

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BRAKE LINING

TRENTON RUBBER MFG. CO.

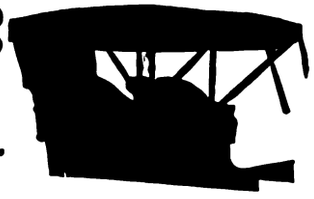
The Acme

JUSTIFIES ITS NAME

THE ACME MOTOR CAR CO.
Reading, Pa.

SPRINGFIELD TOP (Pat. 1895)
Aluminum Bodies

SPRINGFIELD METAL BODY CO.,
306 Birnie Ave.,
Springfield, Mass.





Steel Tires

Full of Air.

Tire expense cut in two.

Cannot Blow Out, Rim Cut or Puncture.

As Flexible as Rubber Anti-Skid.

That part of a tire with a blowout or a rim cut in it will last longer than any other part if encircled by a few sections of steel.

Thousands in use.

Kimball Tire Case Co.

172 Broadway

Council Bluffs, Iowa

Why pay high prices

FOR ALUMINUM

Axle Covers, Engine Crank Cases, Transmission Cases.

Have these made of Pressed Steel

JUST AS LIGHT

Stronger. Much Less in Price.

Send Prints for Estimates.

A. O. Smith Co.

243 Clinton Street, MILWAUKEE, WIS.

Studebaker

Gasoline and Electric—for Pleasure and Business

Studebaker Automobile Co., South Bend, Indiana



THE WATER WAY

BETWEEN

BUFFALO AND DETROIT

The D. & B. Line Steamers leave Buffalo daily at 5:30 p. m., (eastern time) and Detroit week days at 5:00 p. m., Sundays at 4:00 p. m. (central time) reaching their destination the next morning. Direct connections with early morning trains. Lowest fares and superior service to all points west.

Rail Tickets Available on Steamers

All classes of tickets sold reading via Michigan Central, Wabash and Grand Trunk Railways between Buffalo and Detroit, in either direction will be accepted for transportation on D. & B. Line Steamers.

Send two cent stamp for illustrated pamphlet and Great Lakes Map.

Address L. G. Lewis, G. P. A., Detroit.

Detroit & Buffalo Steamboat Co.

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Users of **INVADER OIL**

THE OIL THAT GRAPHITIZES

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YOU NAME THE CAR WE'LL NAME THE GRADE

MADE ONLY BY

HAS. F. KELLOM & CO

113 Arch St., Philadelphia

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Garford

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Eastern Inquiries Garford Motor Car Co. of New York, 1540 Broadway, New York City.

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WE WILL NOT

accept your contract unless we can give you the delivery you require. We will not accept more contracts than we can fill with proper attention to each. We make Pressed Steel Frames and Automobile Stampings.

THE HYDRAULIC PRESSED STEEL CO., Cleveland, Ohio.

The PULLMAN

4-40 Roadster. Price, $3,000.

that made the run from Philadelphia to Savannah, Ga., March 5th to 18th, through mud up to the radiator, beating all previous records.

YORK MOTOR CAR CO., York, Pa.

MICHELIN

ENGLAND. ITALY. AMERICA.

MICHELIN TIRE COMPANY
MILLTOWN, N. J.

THE GYROSCOPE CAR

The Simplest Automobile in the World.

$750—The Price—$750.

GYROSCOPE AUTOMOBILE CO. (INC.)
Gyroscope Bldg.,
231 West 54th St. New York City.

THE MOTOR WORLD PUBLISHING COMPANY
154 Nassau Street, New York

Enclosed find $2.00 for which enter my subscription to

The Motor World

for one year, commencing with the issue of_____

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IN CHICAGO over one hundred E-M-F. "30" cars were sold to individual buyers who had never seen the car—they bought on the specifications backed by the reputation of the men behind the car. Walter Githens writes, "At this rate a place in the line will be at a premium before we get our demonstrator—can't you make our allotment 500 instead of 200?"

We had to refuse him—50 extra was all we could grant, for 500 other dealers have all made the same request.

EVERITT-METZGER-FLANDERS CO.
DETROIT

ALUMINUM SHEETS

For Automobile Bodies, Dashes, Guards, Bonnets, Battery Boxes, Drip Pans, Mufflers, Etc.

STRONG—DURABLE
SCALELESS—RUSTLESS
SMOOTH—PAINT ADHERES FIRMLY

A Metal That's A Time and Money Saver

THE STARK ROLLING MILL COMPANY, CANTON, OHIO

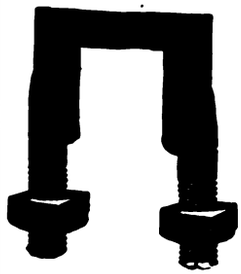


The Only Cure for Tire Troubles
The Only Genuine Spare Wheel
GET A
STEPNEY
AND KEEP GOING

Agencies in all the large cities.
Catalogue B tells all about it. Write NOW.

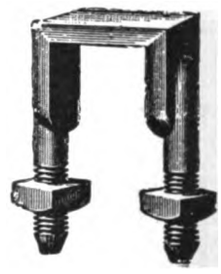
The Spare Motor Wheel of America, Ltd.
Main Office: 236 Michigan Ave., Chicago

FORGINGS for the AUTOMOBILE TRADE



Satisfaction Guaranteed

Thousands of our Spring Clips are now in use, having been supplied to the leading automobile manufacturers.



Have you secured our prices?

THE M. SEWARD SONS COMPANY, New Haven, Conn.

NEW ADJUSTABLE "S" PIPE

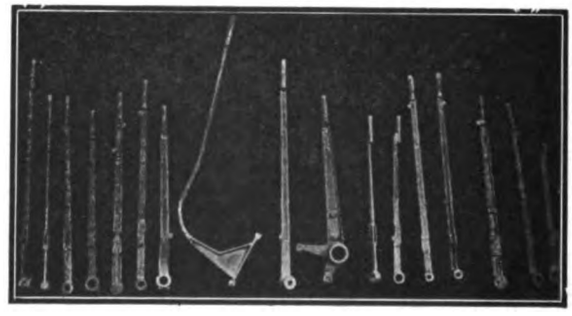


A very handy wrench for inconvenient places. Drop forged steel throughout, parts carefully hardened, and are interchangeable. Has patent nut locking device at side.

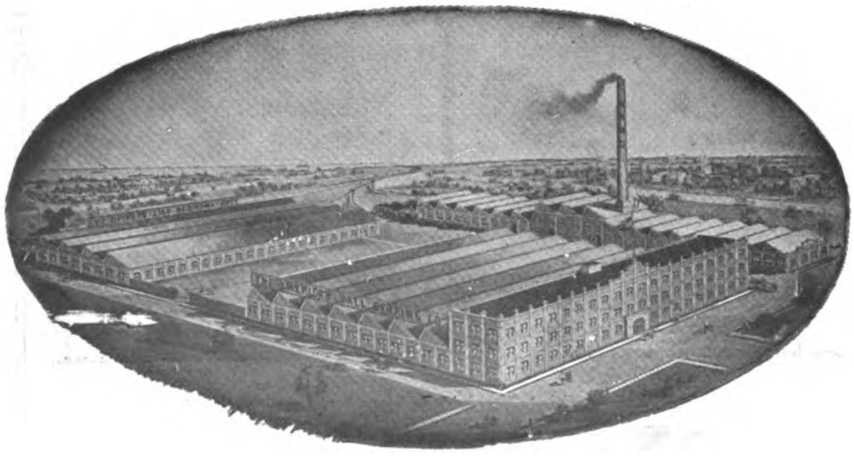
Write for new circular.

THE BILLINGS & SPENCER CO, Hartford, Conn.

PARSONS' MANGANESE BRONZE LEVER CASTINGS



Sole Makers
THE WILLIAM CRAMP & SONS SHIP & ENGINE BUILDING COMPANY, - Philadelphia, Penna.



The output of complete Front and Rear Automobile Axles of this plant exceeds the capacity of all competition combined.

THE American Ball-Bearing Co.

L. S. & M. S. Ry. & Edgewater Park

CLEVELAND, OHIO, U.S.A.

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"Firestone"

Tires WIN

FAIRMOUNT PARK 200-MILE RACE

There was but one winner in the Fairmount Park 200-mile race, despite the cleverly worded advertisements written to create an entirely different impression.

The winner was the Locomobile No. 10, equipped with FIRESTONE STANDARD CLINCHER TIRES ON FIRESTONE DEMOUNTABLE RIMS. This was also the equipment of the other Locomobile entry which made such a good showing.

The tires used were out of regular stock and both cars went through without any tire trouble. Of the sixteen starters only five cars finished and two of these were those with Firestone Tires.

Firestone Tire & Rubber Co., Akron, Ohio

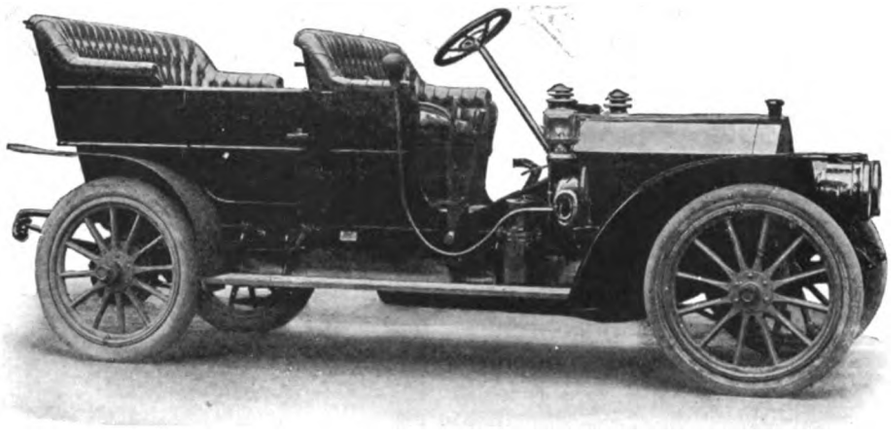
Branches and Agencies Almost Everywhere.

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Columbia

1909 Models of Gasoline Touring Cars (5 passengers), Runabouts (3 passengers), Roadsters (4 passengers), Limousines (7 passengers) and Landaulets (7 passengers); also Victoria Phaeton now ready for delivery

Advance Circulars Giving Detailed Descriptions Mailed on Application

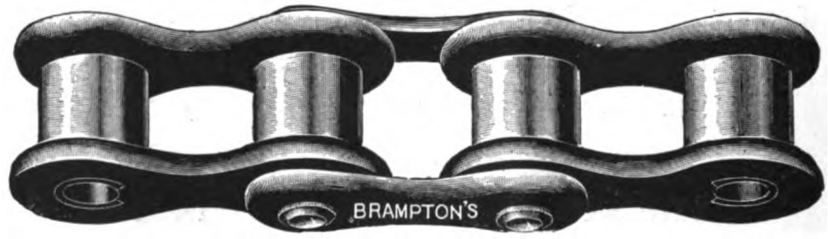


Agents Wanted in Unoccupied Territory

Mark XLVIII, 4 cylinder, 5 passenger, 29 H. P. Touring Car
Fully equipped as above. ready to run, $2,750.00

Manufactured by ELECTRIC VEHICLE COMPANY, Hartford, Conn.
Members A. L. A. M.

THE BRAMPTON MOTOR CHAIN



All side plates on both sides of the Brampton Chain are stamped "BRAMPTON."

LARGE SALES and SMALL PROFIT with thousands of satisfied customers is our best advertisement. THE BRAMPTON CHAIN is made of self-hardening Steel; the strongest Chain in the World. All parts polished; fits sprockets (that are properly cut) without friction.

Some of the other chains may look like THE CELEBRATED BRAMPTON CHAIN because some of the other chain makers began to copy the design and shape of the BRAMPTON CHAIN links in 1904. They have improved somewhat on their copied design from time to time until these chains now look more like the BRAMPTON CHAIN than ever before. These chains somewhat resemble the BRAMPTON in appearance, but the manufacturers of such chains have been unable to copy the material —self-hardening steel.

NO CHANGE IN THE BRAMPTON

There has been no change in the design, construction, material or finish of the BRAMPTON MOTOR CHAIN in the past ten years.—"ENUF SED."

PRICE

The price being equal, it's presumable you want the best, and full value for your money. In such cases, the BRAMPTON FILLS THE BILL, and the prices are the same to manufacturers, jobbers, dealers and consumers as any other chain of equal size. We have in stock chains to fit all American and foreign cars.

YOUR 1909 CAR

You can have the new car that you order fitted with the CELEBRATED BRAMPTON CHAIN if you order it that way. No extra cost to either you or the manufacturer. All standard sizes in stock to fit American and Foreign Cars at the same price as the other chains.

SPECIAL CHAINS TO FIT THE INDIAN MOTORCYCLE.
Agents wanted in unoccupied territory. Catalog on request.

CHAS. E. MILLER, Manufacturer, Jobber, Exporter and Importer
Main Office: 97-99-101 Reade Street, New York

BRANCHES: 54th St. and 8th Ave., New York. 318-320 N. Broad St., Philadelphia, Pa. 1829 Euclid Ave., Cleveland, O. 824 Main St., Buffalo.
202-204 Columbus Ave., Boston, Mass. 227½-229 Jefferson Ave., Detroit. 1392 Bedford Ave., Brooklyn, N. Y.

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The New Stewart

Model 11. Destined to be the most popular, most attractive, most accurate, most satisfying, and the quickest selling speedometer ever produced.



Model 11 **$25**

Full size 4-in. model. Scale, 0 to 0 miles. Enclosed Season Odometer. Enclosed Automatic Resetting Trip Odometer. Scale 7½ inches long. Equipped with famous Stewart Flexible Shaft and Swivel Joint.

NEW CONSTRUCTION

Multipolar Induction Principle

Operating on the induction principle, utilizing the current from a multipolar generator. This construction permits the use of an indicating member of low inertia, thus insuring the most sensitive and accurate reading from 0 to 60 miles.

The needle acts from the center of the dial, which arrangement permits the use of a scale three times as long as ordinarily used, making it the most easily read of all speedometers. It is equipped with a season odometer—capacity 10,000 miles and repeat, also our new trip odometer of three dials, registering miles and tenth, and which may be reset to zero automatically by means of a push button.

The construction is of the costliest kind, every part of the same high standard used in all Stewart Speedometers and includes jewel bearings. The equipment will be the regular Stewart link-type flexible shaft and patented swivel joint, furnished with our highest priced models.

We recommend this exceptional instrument to the motorist who desires the best speedometer that money can buy—the best irrespective of price—who wants a speedometer to indicate the exact speed and correct mileage of trip and season, and do it constantly day after day and year after year.

We stand back of Stewart Speedometers with a Five Year Absolute Guarantee

THE ONLY speedometer built to carry a long-term guarantee

Ready for delivery about November 15th. Send for catalog.

Stewart & Clark Mfg. Co., 509 Diversey Boulevard, Chicago, U.S.A.

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THE SELDEN CAR FOR 1909

Enters upon its second year with a clean record. No "first year" car has ever earned a better reputation or made a better showing.

THE CAR OF MODERATE PRICE

$2000

Touring Car **Roadster**
Limousine **Landaulet**

4 cylinder, 28-30 horsepower, shaft drive, selective transmission, metal body, pressed steel frame, excellent hill climber, fine finish and style, roomy tonneau, luxurious upholstery, easy riding, smooth running, economical in up-keep, in fact, a high grade car in every particular.

The "Silent Selden"

1909 MODELS READY IN SEPTEMBER

Agency propositions now ready. Send for catalog and specifications.

Selden Motor Vehicle Co.

ROCHESTER, N. Y.

Member A. L. A. M.

TIME WAS when tire worry spoiled much of the enjoyment of motoring and the motorist who footed the bills had no voice in the matter.

THEN CAME THE AJAX wrapped tread tire with its superior services.

AND NEXT THE AJAX 5,000 MILE GUARANTEE —If the user of Ajax tires fails to obtain 5,000 miles service from his tire, it is for us to worry—not him, and we make good.

WITH AJAX TIRES the tire problem resolves itself into a plain proposition. We know that they will do, and we offer you the best kind of an insurance for expressing your willingness to find out for yourself.

IS THERE ANYTHING MORE BUSINESS-LIKE THAN THIS?

Write for copy of Guarantee, stating what size tire you are using. Address Dept. A.

AJAX-GRIEB RUBBER COMPANY

GENERAL OFFICES: N. E. Cor. 57th St. and Broadway, New York
Factories: Trenton, N. J.

BRANCHES:
New York, 1776 Broadway — Denver, 1529 Cleveland Place
Boston, 819-a Boylston St. — Seattle, 1102 Broadway
Chicago, 1418 Michigan Ave. — San Francisco, 460 Golden Gate Ave.
Detroit, 743 Woodwood Ave. — Los Angeles, 1040 S. Main St.

Agents in all large cities.

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$1500 for a Car

Embodying $11,000,000 Worth of Experience

There are two kinds of cars:

One is made merely to sell at a low price. The other is made to give service; is mechanically correct; is constructed of the best material, and is sold at a modest percentage of profit over the cost. That is the Mitchell $1500 car.

The manufacturer's experience; his reputation, and a large plant can alone guarantee a good car at a low price.

We buy and make on a large scale. We can turn out a car at a figure wholly prohibitive to the small maker.

$11,000,000 worth of Mitchell cars have been giving complete satisfaction for eight years.

Our plant is now four times as large as it was when we started to make these cars.

Our $1500 car is perfect all the way through down to the smallest details. We couldn't use more care or better material in its construction if we asked twice as much for it. In it is crystallized all of our eight years' experience.

A big, roomy, luxurious 5-passenger touring car, with 4-cylinders, 28-30 horse power engine and capable of doing 50 miles an hour. This is our Model K which we offer you for $1500.

We even go further than this. We include $300 worth of actual automobile value which with any other $1500 car you would have to buy extra.

For instance, our price includes a $150 Splitdorf Magneto in addition to the regular battery ignition system.

It includes 32-inch wheels and 4 inch tires—all other $1500 cars use 3½ inch tires. Our tires cost us $50 more per set than the 3½ inch tires.

It includes a dozen other features which you would expect to find only in cars selling for $5000 or more. Our crank shaft has five bearings; one at each end and three in between. Others have two—one at each end. Imagine the play, the weakness.

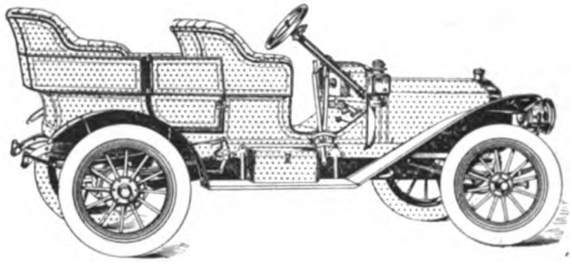
We have built 5000 crankshafts and not one has ever broken.

Our transmission is of the best selective, sliding gear type—the kind that is used in all of the well known high-priced cars.

Our cylinders are cast separately.

We use as much vanadium or nickel steel as the most expensive cars on the market.

We use aluminum castings wherever possible and we strengthen them with bronze.



Our tonneau is detachable, and you have your choice of three styles of body.

Two complete ignition systems—the Splitdorf $150 Magneto and the ordinary battery system.

The lubricating system is the best we have found in our eight years experience.

If we were not equipped to turn out ten cars to the other makers one this Model K Mitchell would certainly cost you $2000 to $2500.

Remember, that we do not buy parts from other makers. We build our cars, from the ground up, here in our own factory.

Many concerns buy their parts from separate makers and simply assemble them. Such cars are experiments—each individual car is an experiment.

But we are able to machine our parts to the accuracy of 1-10000 part of an inch. So our car is in harmony at every point. It is silent and smooth and reliable.

Don't take our word for these facts. Examine the car yourself, ride in it, give it the hardest try out you know. Then if it doesn't make good don't buy it.

Full particulars upon request.

Mitchell

Mitchell Motor Car Co. 571 Mitchell St. Racine, Wis.

Standard Manufacturers, A. M. C. M. A.

THE VOLTA MAGNETO

is so simple in construction that a novice can operate it as easily as an expert.

Witherbee for Ignition.



Wico Charging Device
Wico Ignition Wire
Wico Spark Plugs
Witherbee Batteries
Wico Inspection Lamp

Witherbee Igniter Co.

Makers of the famous Witherbee Battery

1876 BROADWAY, NEW YORK

CHICAGO
1429 Michigan Ave.

DETROIT
200 Jefferson Ave.

BUFFALO
720 Main St.

BALTIMORE OFFICE
604 Continental Bldg.

DENVER
1542 Broadway

Stevens-Duryea

LIMOUSINES AND TOURING CARS

THE STEVEN-DURYEA will stand more punishment on muddy, rutty, hilly, sandy, stony, bumpy, "thank-you-ma'am" roads without breaking, chafing, blowing up or wearing out tires, cutting out engine bearings, springing the frame or breaking the springs than any four cylinder or six cylinder car in existence. Such immunity is worth several hundred dollars to you during the life of the car. It is due entirely to our "Unit Power Plant" and its "Three Point Support."

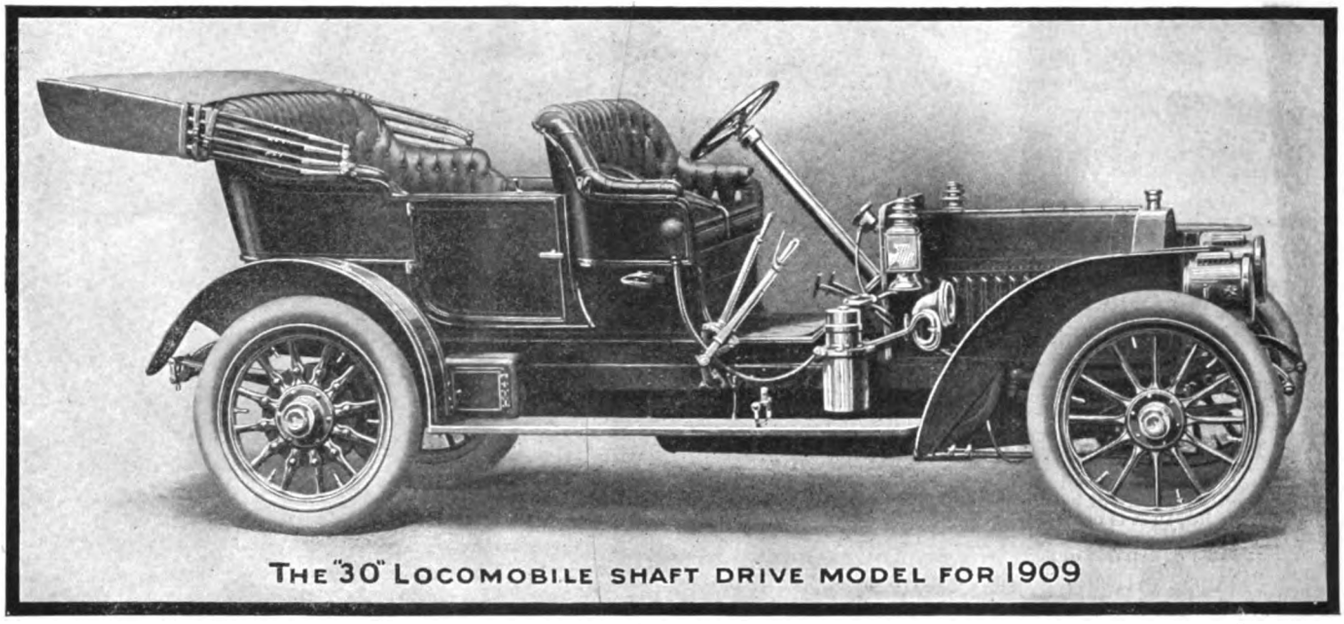
WRITE FOR LIMOUSINE AND TOURING CAR CATALOGS.

STEVENS-DURYEA CO.

CHICOPEE FALLS, MASS.

Member of Association of Licensed Automobile Manufacturers.

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THE "30" LOCOMOBILE SHAFT DRIVE MODEL FOR 1909

THE MOTORING PUBLIC WILL BE INTERESTED IN READING THE FOLLOWING CIRCULAR ANNOUNCING **1909** LOCOMOBILE MODELS WHICH THE **LOCOMOBILE** COMPANY OF BRIDGEPORT, CONN., HAS RECENTLY SENT TO THEIR DEALERS AND CUSTOMERS:

We signalize our tenth anniversary of the production of automobiles by the announcement of two splendid models—undoubtedly the best that we have ever offered to the public.

Ten years ago the Locomobile demonstrated for the first time the wonderful possibilities of the motor car, and gave the automobile business its first great impetus. To-day the Locomobile is held in the highest esteem. It is everywhere regarded as a car of the highest quality—a car of *composite* merit, satisfactory in every respect. It is specially noted for reliability, and experts agree in rating it the most durable car on the market.

The 1909 product will enhance the high reputation the Locomobile has gained.

We announce an entirely new model "30" *Locomobile,* a five-passenger touring car intermediate in power between our "20" and our "40." It will be equipped with shaft drive.

The "40" *Locomobile* should be the logical choice of those who desire a *high powered car.* The "40" will be produced as a seven-passenger touring car, a stylish roadster, and as a closed car with Pullman Limousine or Landaulet body.

This circular will furnish advance information about 1909 Models, until our preliminary catalog is ready.

ADVANCE INFORMATION CONCERNING 1909 MODELS

"40" LOCOMOBILE.

This car is thoroughly typical of Locombile construction and is the most powerful model we have ever built. It is equipped with a four-cylinder motor of 5-inch bore and 6-inch stroke, giving about 60 horse-power on the testing stand, thus affording high speed and fine hill climbing ability. The artillery wheels are 36 inches in diameter; the tires are 36 x 4 inches front and 36 x 5 inches rear. The wheelbase is 123 inches, and the length over all is 16 feet 1 inch.

The "40" *Locomobile* is a splendid touring car for seven passengers and is notable for it beauty of line, luxurious appointments, and delightfully easy riding qualities. It is a touring car par excellence and will meet any test of endurance to which it can be subjected. *Price, with lamps and equipment,* $4,500. *Top extra.*

The "40" *Runabout,* brought out near the close of the 1908 season, will be an attractive feature of the 1909 production. The body is very attractive and accommodates four passengers, all seats being very

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comfortable and easy riding and convenient of access The individual front seats are fixed; the rear seats may be removed or only one or both can be used, making the car available for two, three or four passengers as desired. The "40" Runabout can also be supplied with the type of body known as the "toy" or "baby" tonneau, and which enjoys considerable popularity. *Price, with standard body or "baby" tonneau, including lamps and equipment,* $4,500. *Top extra.*

The "40" Limousine and the "40" Landaulet are both beautiful high-powered closed cars. The bodies are roomy, beautiful in design, of the best possible workmanship and finish, and are equipped with extra Pullman chairs. *Prices of these closed cars announced later.*

"30" LOCOMOBILE.

This model is equipped with a four-cylinder motor of 4½-inch bore and 4½-inch stroke, giving about 38 horse-power on the testing stand. As the new model is intermediate in size between the "20" of former years and the "40" Locomobile, it is rated as a "30."

The car embodies all of the special features which have for years identified the Locomobile, such as low tension ignition; bronze engine base and gear box (much stronger than aluminum commonly used); alloy steel in the crankshaft, steering gears, transmission shafts, pressed steel frame, gears, and other important parts; heat-treated drop-forgings of our own manufacture; four-speed selective transmission; imported ball-bearings in wheels, gear box, and other important places. The wheelbase is 120 inches, yet the car can be turned in a 38-foot street. The length over all is 15 feet. The wheels are 34 inches in diameter, tires are 34 x 4 inches front and 34 x 4½ inches rear.

The body is graceful in design and very commodious, seating five adults with entire comfort. *Price of the "30" Locomobile touring car, as illustrated with lamps and equipment,* $3,500. *Top and speedometer extra.*

Another variation of the "30" Locomobile is the "30" *Runabout,* a roadster of the latest type with sharply inclined steering post and equipped with a body similar to that of the "40" Runabout, and which may be used for two, three or four passengers as desired. It will also be supplied with the "baby" tonneau. *Price, with lamps and equipment,* $3,500. *Top extra. Prices of closed cars announced later.*

A feature of the new "30" chassis is the use of shaft drive, the details of which are described in the following paragraphs:

LOCOMOBILE SHAFT DRIVE CONSTRUCTION.

We have long appreciated that shaft drive has some very desirable features when applied to a car of the size of the "30" Locomobile. Our new shaft-driven car is fully equal in reliability and lasting qualities to our famous chain-driven cars, and we believe that it combines more good features than any other car on the market, whether of foreign or American design. Some of these features are as follows:

1. *Complete removal of all torsional stresses from the car axle tubes.* Distance rods, similar to those on our chain-driven cars, transmit the driving stresses to the frame and maintain parallelism of the front and rear axles. These distance rods carry the brakes, and their rear ends are free to turn on the axle tubes. Consequently when the springs are depressed the distance rods turn on the axles and do not twist them. Also, when the brakes are applied the braking stresses are not communicated to the rear axle or driving mechanism. Also the power is not transmitted through the springs.

The spring chairs are also free to turn on the axle tubes, and thus the only duty of the springs is to carry the load. This arrangement makes the Locomobile shaft drive car a very easy riding one, in addition to removing all torsional stresses from the rear axle tubes.

All brakes are enclosed and protected.

2. *Exceptionally strong rear axle construction.* The axle tubes are of alloy steel with inner ends forced into the openings of the differential housings by hydraulic pressure and securely riveted in place. Unlike many or most cars, no brazing whatever is used. It will be noted that our form of construction would be the strongest possible in any case, but owing to the removal of all torsional stresses from the tubes it is really very much stronger than necessary. There is no tendency for the tubes to loosen in the housing.

3. *Straight line drive.* When the car is loaded the propeller shaft is almost exactly horizontal—thus the power of the motor is transmitted in a straight unbroken line to the rear axle, thus eliminating loss of power through the universal joints.

4. *Complete universal action.* The propeller shaft is not only horizontal, but is provided with a universal joint at the front end and a *slip universal joint* at the rear end. The latter compensates for any change in distance between the rear axle center and the gear box. The two universal joints compensate for all other stresses as well, so that the transmission of power from the motor to the rear axle is perfectly accomplished without any binding or straining under any road conditions. As the propeller shaft is horizontal, there is very little action on the part of the universal joints, and very little power absorbed by them—furthermore, as the joints are of the best construction, fully protected and lubricated, the *wear* is reduced to a minimum.

5. *Flexible drive.* A torsion rod is provided to overcome the torque reaction of the bevel driving gears. The rear end of this rod is made fast to the differential housing and the front end is connected to the cross member of the chassis frame by a spring suspension. When the car is started in either direction the springs are compressed and the torque reactions are absorbed, reducing the tendency to raise the body when the car is started. Thus the drive from the motor to the rear wheels is a flexible one—a most desirable feature.

6. *Truss rods.* Diagonal tension rods extend from the lower part of the differential housing to the outer extremities of the rear axle tubes. These truss rods transmit the stresses to the wheels instead of permitting them to be concentrated at the center of the axle. This form of construction produces an axle of moderate weight and maximum strength.

7. *Excellent design for driving axles.* The driving axles are of the floating type and rotate inside of the axle tubes. As the weight is all carried on the tubes, the axles only have to transmit the power. The inner ends have a square fit into the differential bevel gears and the outer ends are in the form of dogs or jaw clutches integral with the axles. These engage with the hubs of the wheels, affording an absolutely positive drive and at the same time making it possible to remove the driving axles at any time by simply removing the hub caps.

Summary. It will be seen that the Locomobile shaft drive construction runs very nearly parallel to the Locomobile chain drive construction, and that every weak spot in the shaft drive has been studied and overcome. The most exhaustive road tests have proven most conclusively the durability and lasting qualities of the new Locomobile shaft drive.

LOW TENSION IGNITION.

Locomobile low tension ignition adopted in 1905 will be continued. We have had four years' experience with high tension ignition and an equally long trial of low tension ignition, and the results indicate that the latter is far superior in reliability. The Locomobile low tension system differs from the ordinary make-and-break on account of the simplicity of the design and the use of iridium contacts, which does away with frequent and unnecessary timing of the igniters. Locomobile low tension ignition is superior to any form of jump spark on account of the fact that the electrical problem is infinitely more simple and enables the simplest type of magneto to be employed. Furthermore, our system is superior to the high tension ignition because there is no danger from short-circuiting and no complicated wiring—nothing but a few feet of low tension cable.

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Mongrel or Thoroughbred?

NOW IS THE TIME for you, Mr. Thoughtful Dealer, to decide what you will sell in 1909.

WILL IT BE A MONGREL? a car assembled from parts carried together from all over the country and hammered into shape as well as may be?

OR WILL YOU SELL THE THOROUGHBRED—a homogeneous mechanical masterpiece, every single part of which is the result of the same genius that devised the whole?

"ASTOUNDING," "MARVELOUS," "WONDERFUL," are the terms with which some assembled cars are now tagged, though they are astounding, marvelous and wonderful only to the assemblers, who like Rip Van Winkle, have been dozing in the growing woods of automobiledom and who now, bewildered by the progress that has been going on, seize upon time-tried and long-established practices and herald their adoption by the assemblers as brand-new discoveries.

LET'S REASON IT OUT: On the one hand you have the assembled car, with an engine bought from one manufacturer, a frame from another, and a transmission from a third, and so on down to the last rivet. The maker of the engine, the mill in which the frames are pressed, the transmission man, all derive their separate profits, leaving no other way to the assemblers to obtain their rewards than by skimping the quality of their "product."

AND THEY DO IT—THEY MUST! When you examine some of these astounding cars you will be truly astounded on finding that the four-cylinder engine is cast in one piece and has only two main bearings, whereas the Maxwell has four cylinders and five main bearings. You know well enough that making a motor with only two bearings is equal to leaving the engine to its own devices as far as alignment is concerned.

IT WILL BE A TOUGH JOB FOR THE DEALER to convince the purchaser who is wise that some four-cylinder engines of small dimensions will develop as high as 30 horsepower—because they can't.

MAXWELLS ARE A HOME-GROWN AMERICAN PRODUCT. The use of Maxwell features in Maxwell cars was neither a heaven-given inspiration nor the aping of foreign design, but the outcome of sound engineering sense.

WHEN 10,116 MAXWELL OWNERS testify to the excellence of their cars, all of which have been sold by Maxwell dealers, then the Maxwell proposition is one that you can't afford to pass by.

BEFORE HITCHING YOUR WAGON TO A STAR it will be wise for you to find out all about a dealership for Maxwells, the success of which is past and present, instead of lying in the dark and distant future that has swallowed so many wonderful cars that have been marvelous chiefly in their complete and rapid disappearance from the field of legitimate competition.

Benj. Briscoe
President.

MAXWELL-BRISCOE MOTOR CO.

Standard Manufacturers A. M. C. M. A.

P. O. Box 106, Tarrytown, N. Y.

Factories: TARRYTOWN, N. Y. NEWCASTLE, IND. PAWTUCKET, R. I.

Address communications to Tarrytown, N. Y.

Matheson

1909

Prices Reduced $1,000

And the Reasons Why

Heretofore the Matheson Car has been considered the highest priced as well as the highest grade American car on the market.

Millions of dollars worth of these cars have been delivered to customers who could afford to pay the higher price for **the best.**

Many other purchasers have been persuaded that some of the lower priced cars have been "just as good." Matheson owners who have used other makes of cars have answered that question satisfactorily. Send for their letters, which we have done up in a book.

In order, therefore, to still **maintain the unequalled quality** of the Matheson Car and at the same time give customers this magnificent car at the price of the cheaper cars, the makers have figured that by **doubling the factory output** and selling at a much closer margin of profit, the price of the Matheson Car equipped with Touring, Landaulet or Limousine bodies, could be cut $1,000, and the same chassis, equipped with Roadster or Tourabout bodies, cut $650.

Accordingly, the Company's working capital **has been increased by** $350,000, and after October 11, 1908, the purchaser can buy a genuine Matheson Car, the very finest of all motor cars of either European or American make, **at the makers' former prices to the agent or dealer;** namely:

	New Price	Former Price
50 H. P. 1909 Touring Car	$4,500	$5,500
50 H. P. 1909 Roadster	4,350	5,000
50 H. P. 1909 Tourabout	4,350	5,000
50 H. P. 1909 Limousine	5 500	6,500
50 H. P. 1909 Landaulet	5,500	6,500

VICTORIES

The great string of Matheson victories in the important speed, hill climbing and endurance contests of the past seasons, in competition with the greatest cars of Europe and America, can leave no room for doubt that the Matheson car has no peer on any market to-day.

GUARANTY

Every Matheson is guaranteed for 365 days. (Notice that most other cars are guaranteed for 60 to 90 days only.)

MATHESON AUTOMOBILE COMPANY

Main Sales Office, 1886-1888 Broadway, New York City

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NOTE THIS PERFECT SCORE!

Once Again the Auto-Meter Shows Its Supremacy—This Time in the Chicago Thousand Mile Endurance Run.



Five cars finished with perfect scores—4 of which were equipped with a Warner Auto-Meter —two Haynes—a Pierce and a Premier.

The miles registered for the two Haynes cars at the finish varied only 1-10 of a mile. Think of that for accuracy in a straight run of 1,000 miles. Significant was this fact, too, that no cars were penalized on account of Warner Auto-Meter falling down.

The drivers knew, to make a perfect score—to keep a certain speed maintained mile to mile—they could rely on the Auto-Meter as an accurate gauge.

These far sighted winners of perfect scores realized the Auto-Meter could be depended upon in any weather under any road condition—so it was selected because it was necessary.

The Warner Auto-Meter

The Warner Auto-Meter is the very utmost in a speed gauging instrument. Its supremacy is undisputed.

The Auto-Meter always has been used by the Glidden Pathfinders when they lay out the routes for the Glidden tour, because they know it's accurate to a fraction.

In the New York-to-Paris race the Thomas, the winner and only American contestant, was equipped with an Auto-Meter.

Equip your own car with a speed indicator that is infallible—any other kind is unnecessary. The Auto-Meter is the only kind that is.

Write for more details and arrange for a trial of the Auto-Meter. Address your requests for Free Trial to our nearest Branch House.

WARNER INSTRUMENT CO., Factory and Main office, 287 Wheeler Ave., Beloit, Wis.

PHILADELPHIA—Cor. Broad and Race.
SAN FRANCISCO—550 Golden Gate Ave.
INDIANAPOLIS—330½ N. Illinois St.
LOS ANGELES—1124 Main St.
NEW YORK—1902 Broadway.
CHICAGO—1305 Michigan Ave.
CLEVELAND—2062 Euclid Ave.
PITTSBURG—3432 Forbes St.
BOSTON—925 Boylston St.
BUFFALO—722Main St.
ST. LOUIS—3923 Olive St.
DETROIT—239 Jefferson Ave.

Morgan & Wright Tires

will give you considerably more and better service than you are accustomed to receiving from pneumatics

It's safe to say that the amount of service this man received was more than he bargained for.

He writes:

"Have driven four of your tires for two seasons, making over 14,000 miles, and am still using the same set."

Yours respectfully,
St. Louis, Mich., Oct. 2, 1908. D. R. ANDREWS, M.D.

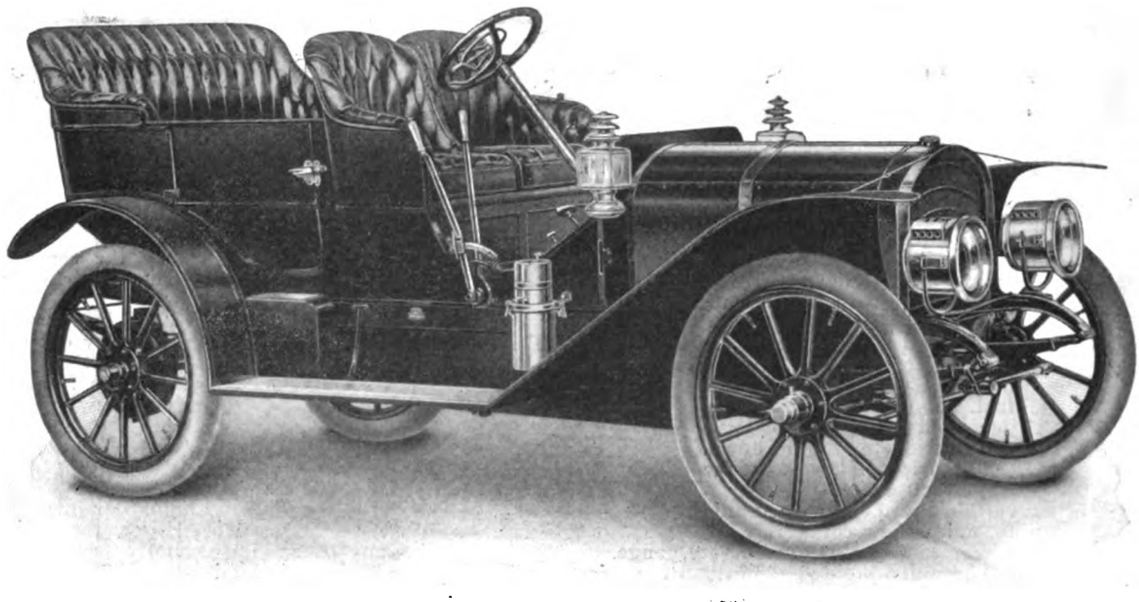
Don't put us on record as saying that every Morgan & Wright tire will give 14,000 miles service. The car weight, road conditions and Dr. Andrews' skill as a driver were possibly all in favor of his making such a record.

His experience does, however, show the service Morgan & Wright tires are capable of giving if treated properly.

Why not specify them on your car?

MORGAN & WRIGHT, DETROIT

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Model 34, Price $2,250

Two Vital Features of This Car.

THE offset crank shaft and straight line drive, more than any other features are responsible for the unusual efficiency, the high delivered power and the wonderful flexibility of control of this four cylinder, five passenger

Rambler

Most automobiles can develop sufficient power at high speed, but the owner's greatest need is for power at slow engine speeds—power on the hills—in stretches of sand and mud.

The offset crank shaft and stright line drive give flexibility, allow more high gear work without overtaxing the engine; that means less gear changing; less clutch manipulation—therefore ease and economy of operation.

This car can be throttled down to operate smoothly and steadily on high gear at three miles an hour. Or it can run forty-five miles an hour.

These features besides those big wheels, big tires, long wheel base, accessible engine, safety starting device, reinforced tubular axle, finished parts of genuine mahogany, perfect brake control, and large luxurious body, make this a car of highest quality.

Ready for immediate delivery. Please write for details now.

Thomas B. Jeffery & Company, Main Office and Factory: **Kenosha, Wis.**

Branches and Distributing Agencies: Chicago, Milwaukee, Boston, Philadelphia, San Francisco.

Representatives in all leading cities.

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THE MOTOR WORLD

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ELECTRIC VEHICLE SUES BUICK

Seeks to Enforce Payment of Alleged Overdue Selden Royalties—Papers Served in New York.

Suit has been brought by the receivers of the Electric Vehicle Co., of Hartford, Conn., against the Buick Motor Co., of Flint, Mich., for an accounting and back royalties for the past year, alleged to be due under the Selden patent agreement which the defendant company entered into with the plaintiff and with the Association of Licensed Automobile Manufacturers at the time of its admittance to membership in the latter organization. The action is the result of a resolution adopted September 3 by a three-fourths vote of the A. L. A. M. calling upon the Electric Vehicle Co. to institute legal proceedings against both the Buick Motor Co. and the Olds Motor Works for the collection of their unpaid Selden royalties. The Olds suit was begun promptly thereafter and the company's Selden license subsequently canceled.

Service has been made on the New York branch of the Buick company by Joline, Larkin & Rathbone, the attorneys for the Electric Vehicle Co., so that the proceedings are now actually under way. In selecting attorneys for its defense, the Buick company has chosen the firm of Ward, Hayden & Satterlee. The retaining of this firm by the Buick interests is regarded as having considerable trade significance.

Asserts Prior Lien on Baker Assets.

The affairs of the bankrupt Baker Motor Vehicle Co. of New York, have been found by the receiver, James N. Rosenberg, to be in a complicated state by reason of the fact that the Baker Motor Vehicle Co., of Cleveland, O., for whose products the New York company had the agency, claims a prior lien on the assets over all the other creditors. The Cleveland company is a creditor to the amount of $25,000. In asserting its precedence it says that when the creditors of the New York company granted an extension some time ago, they agreed to subordinate their debts to new debts incurred since the extension, and maintains that the $25,000 indebtedness in question comes within the terms of the agreement. Litigation is likely to be necessary in order to determine the rights of the various creditors.

Union Carriage to Make Automobiles.

After considerable experimentation, the Union Carriage Co., of St. Louis, Mo., has decided to build automobiles for the coming season, and plans to market at least 500 the first year. The company has made horse-drawn vehicles for the past 17 years, its annual output being about 15,000. The officers of the company are George E. Deeds, president; W. C. Ingram, vice-president; George A. Laws, secretary, and John B. Keough, treasurer.

Githens is Now G & J Sales Manager.

Herbert A. Githens, who for seven years has traveled in G & J interests, has been appointed sales manager of the G & J Tire Co., of Indianapolis, Ind. He will not push automobile tires alone, but will have charge of the sales of all the departments of the company.

Wilcox Resigns from the Gearless.

George Wilcox, general sales manager of the Gearless Transmission Co., of Rochester, N. Y., has severed his connection with that company. His future plans are not yet announced.

Buggy Builders Take to Motors.

The Borough & Blood Buggy Co., of Marshall, Mich., has commenced the manufacture of motor vehicles. The machines are to be of the high wheeled buggy type.

Jackson Leaves the Thomas.

R. B. Jackson, general manager of the E. R. Thomas Motor Co., of Buffalo, N. Y., has resigned. He will take a rest of several weeks before assuming any new duties.

PLAN TO PAY CLAIMS IN FULL

Pope Motor Car Receivers Take Steps to Liquidate Indebtedness—No Sale of the Toledo Plant.

Negotiations are at present under way looking to the completion of a plan by which the creditors of the Pope Motor Car Co., of Toledo, O., will receive 100 cents on the dollar for their claims, following which the court will be asked to discharge the receivers. Efforts in this direction have been progressing for some time, and now enjoy the prospect of complete success.

The company's indebtedness to the banks, and to creditors in the trade is between $300,00 and $400,000, and the recent sale of the Waverley plant at Indianapolis, Ind., for $200,000, together with the $101,000 balance which the Indianapolis plant had in the bank has added to the available cash sufficiently to make it not improbable that a total may be arranged for that will enable the receivers to pay all the outside obligations in full.

For some months there have been rumors of the sale of the company's plant at Toledo, to R. D. Apperson, of Lynchburg, Va., arising from the fact that the latter was given permission by the receivers to examine the plant and to have his own auditors investigate the books, with a view to his purchasing. No options were either given or asked, however, and the negotiations have since languished to a point where there is little likelihood of the deal going through.

Aurora Composition Accepted.

Upon a showing of the assets on hand, the creditors of the bankrupt Aurora Motor Works, of Aurora, Ill., at a recent meeting agreed to a composition of 10 per cent. in cash or notes for the full amounts, due in one year and signed by the company. The settlement suggested is subject to confirmation by the court.

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In the Retail World.

The Rambler Automobile Co., of Kansas City, Mo., has been formed, and, as the name indicates, will devote itself chiefly to the sale of Rambler cars. E. G. Anderson will be general manager.

Bankruptcy proceedings have been brought against the General Motor Car Co., of San Francisco, Cal. Some of the petitioners have claims amounting to over $2,000, and a preference of creditors is alleged.

J. O. Caldwell, Jr., formerly in the automobile business in Boston, Mass., has located in Nashville, Tenn., and will open a garage and jobbing supply house at 145 Third avenue, North. He will also handle the Regal car.

As treasurer of the Ohio Motor Car Co., No. 1938 Euclid avenue, Cleveland, O., May A. Post has made an assignment to William B. Woods, in the insolvency court. The company's assets are estimated at $2,000 and its liabilities at $24,000.

The American Stepney Spare Wheel Co. has moved from 341 Fifth avenue to 1773 Broadway, New York City. The larger space facilitates the Eastern distribution of Stepney spare wheels, made by the Spare Motor Wheel of America, Ltd.

The Boston branch of the Firestone Tire & Rubber Co., has been removed from 9 Park Square to 145 Columbus avenue. In the new quarters complete facilities for handling solid and pneumatic rubber tire work of all classes have been installed.

The Matheson Company, of Maryland, has been formed to handle the Matheson in Maryland, Virginia and the District of Columbia. J. J. Mason is president of the company, which has secured a salesroom and garage at 1002 Morton street, Baltimore, Md.

The aristocratic precincts of Massachusetts avenue are to contain the Boston branch of Thomas B. Jeffery & Co., as Manager Charles has taken a lease of the finely appointed establishment at 95 Massachusetts avenue heretofore occupied by the Morrison-Price Co.

The Levy & Hipple Motor Co., now at 390 Wabash avenue, Chicago., Ill.,, has acquired the property at 1467-69 Wabash avenue for a salesroom and garage building. The new building will be three stories high, costing $25,000, and will have a front of white tile and glass.

E. P. Weber succeeds W. P. Cronin as manager of the Boston branch of the Diamond Rubber Co. As a special traveling salesman, Cronin will have his headquarters at a factory in Akron, O. His successor at Boston was a salesman in the company's Philadelphia branch.

The William R. Ruess Automobile Co., a newly organized concern, has taken three stores at 1028-30-32 South Main street, Los Angeles, Cal., which are to be made into one large salesroom and garage, the latter having a sign reading: "We Never Close." The company will handle Pope cars.

The J. A. Orlando Auto Co., of Columbus, O., has been put into the hands of a receiver, Judge M. G. Evans having appointed Harry E. Price in that capacity. The petition was brought by Jesse M. Morrison, who has a one-third interest in the firm and who represents that James Orlando, his partner, is wasting the concern's resources.

Matheson Chooses Its New Officers.

At the annual meeting of the stockholders of the Matheson Motor Car Co., of Wilkes-Barre, Pa., the election of officers resulted in Colonel Asher Miner being chosen as president, to succeed Charles W. Matheson, who is taking charge of the Matheson Automobile Co., of New York, the selling organization for the Wilkes-Barre company. J. W. Hollenback was elected vice-president, while Frank Matheson was re-elected secretary and general manager, and R. Nelson Bennett, treasurer, with Daniel C. Mackay assistant treasurer. The board of directors now includes J. W. Hollenback, I. M. Thomas, John A. Turner, Asher Miner, W. C. Sheperd, R. Nelson Bennett, W. H. Son, Frank Matheson, Charles W. Matheson, John C. Bridgman and E. S. Fretz.

Ajax Lands a Record Tire Order.

What is declared to be the largest order for automobile tires ever given has been awarded to the Ajax-Grieb Rubber Co., of New York City. The order calls for a total of 29,000 tires to be delivered before July 1, 1909, to the Maxwell-Briscoe Motor Co., the sum involved being over a half-million dollars.

Coleman Comes for a Brief Visit.

Frederic Coleman, manager of the London branch of the White Company, arrived in this country last week for a short visit. He regards the outlook in England for the coming season as not unfavorable, especially for steamers, in which he finds no serious competition.

Will Manufacture Cars in Goshen.

The Goshen Motor Works, which has incorporated with $25,000 capital, is making preparations to manufacture automobiles and engines in Goshen, Ind. The directors of the company are Orlando D. Ihrig, Guy B. Kessler, Lewis E. Ihrig, et al.

Goodyear Adding to Its Plant.

Ground has been broken for a new factory building adjoining the present plant of the Goodyear Tire and Rubber Co., Akron, O. It will be five stories high, 80x300 feet. About 300 more men will be employed.

Firestone Factory is Enlarged.

A four story addition to the factory of the Firestone Tire and Rubber Co., of Akron, O., is being constructed. It will be used exclusively for tires and is planned to increase the output by 25 per cent.

The Week's Incorporations.

Newark, N J.—Non-Blow-Out Auto Tire Co., under New Jersey laws, with $600,000 capital. Corporators—Edward D. Birkholz, Frederick R. Tyrell and R. S. Terhune.

New York City, N. Y.—City Autocab Co., under New York laws, with $250,000 capital. Corporators—L. F. Braine and Harry H. Gardiner, 32 West Fortieth street; Lloyd Milnar, 452 Fifth avenue, New York City.

New York City, N. Y.—White Tire Co., under New York laws, with $250,000 capital; to manufacture tires for automobiles. Corporators—L. L. Stein, L. L. Doblin and N. Coleman, New York City; E. P. White, Chicago, Ill.

Jersey City, N. J.—Standard Universal Rim Co., The, under New Jersey laws, with $50,000 capital; to manufacture metal wheels and rims. Corporators—B. S. Mantz, J. R. Turner and S. A. Anderson, of Jersey City.

Homestead, Pa.—Triumph Automobile Tire Co., The, under West Virginia laws, with $1,000,000 capital; to manufacture solid automobile tires. Corporators—H. E. Hayes, C. O. Derr and W. O. Johnson, Homestead, Pa.

Buffalo, N. Y.—Preston Fabric Co., The, under New York laws, with $100,000 capital; to manufacturer automobile and cycle tires. Corporators—C. Wesp, M. R. Evans; J. F. Preston, P. Wesp, Jr., and A. S. Collins, Buffalo.

New York City, N. Y.—American Demountable Rim Sales Co., under New York laws, with $50,000 capital; to manufacture and deal in vehicle wheels, rims and tire fastenings. Corporators—J. F. Paine, D. E. Sullivan, M. T. Loebl.

New York City, N. Y.—Motor Transportation Co., under New York laws, with $20,000 capital. Corporators—George S. Hayes, 1876 Broadway; B. H. Hayes, 527 West 143d street; L. Vance-Phillips, 647 Madison avenue, New York City.

Troy, N. Y.—Hygrade Rubber, Bicycle and Automobile Supply Co., under New York laws, with $10,000 capital. Corporators—Arthur W. Rood, Burdett and Hudson streets, Troy, N. Y.; Percey B. Whitmore, 206 West 114th street, and George M. Post, 471 West Twenty-second street, New York City.

Receiver Continues Duerr Business.

At a meeting of the creditors of Charles A. Duerr & Co., Inc., of New York City, held in the office of Lindsay Russell, the receiver, on the 14th inst., it was decided to let the receiver continue the garage business of the bankrupt for a period of sixty days. Meanwhile a further meeting of the creditors will be held to elect a trustee to succeed the temporary receiver.

Youse Introduces Taximeter Cabs.

E. S. Youse, of Reading, Pa., has started the Reading Taximeter Cab and Baggage So. It will operate from his garage.

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PATENT WAR ON MIDGLEY'S RIM

Repeated Efforts to Have His Invention Declared Unpatentable—Mell Scored by the Court.

That a vigorous and sustained warfare against Thomas Midgley's efforts to secure full and adequate patents on his well-known "Midgley" detachable rim has for some time been maintained before the Patent Office, is disclosed by a decision which has been handed down by the Court of Appeals of the District of Columbia. The decision grows out of an effort by Tod J. Mell to have Midgley's invention declared unpatentable, and is the result of a long and bitter fight, in which, apparently, every available technical subterfuge has been employed to prevent Midgley's patent coming to issue. Starting as an interfernce case, in which Mell endeavored to disprove Midgley's priority over himself in the invention of this form of rim, the essence of Mell's attack has latterly changed to an endeavor to establish the non-patentability of the rim at all.

In this, however, he has been supported only by one primary examiner, who dissolved the interference on the ground that the invention was unpatentable, but who was subsequently overruled by the commissioner of patents. Mell appealed to the courts against the commissioner's decision, but the resulting judicial opinion gives him little comfort and takes pains to score him for "seeking to rob his adversary of the fruits of his victory."

In the written decision by the court, Judge Van Orsdel recites the history of the case in part as follows:

This is an appeal from a decision of the Commissioner of Patents in an interference proceeding. The issue is involved in the following counts:

1. In a vehicle wheel, the combination with a main rim member and a removable side flange, said main rim member having a bead of rib extending toward the center of the wheel and a removable side flange having a similar bead or rib, of an expanding locking ring engaging both of said ribs or beads.

2. The combination with a wheel-rim, of a ring having an outwardly-extending and inwardly-turned flange at one edge to engage the tire, and extending across and secured to the outer surface of the rim, a ring having an outwardly-extending and inwardly-turned flange to engage the tire at the other side, flanges on the adjacent edges of said rings extending inward therefrom parallel with one side of the rim, and a severed ring engaging said flanges to secure the rings together.

The appellant, Tod J. Mell, filed his application for letters patent on December 19, 1905, and the appellee, Thomas Midgley filed his application on April 29, 1905. The interference was declared October 23, 1906. In his preliminary statement, Mell alleged dates subsequent to the filing date of Midgley. On the face of the record, Midgley was entitled to a judgment of priority. Confronted with this embarrassing situation, Mell filed a motion to dissolve the interference on the ground of the non-patentability of the invention in view of certain prior patents. This motion was denied by the primary examiner. The interference came on for hearing before the examiner of interferences, and a judgment of priority was rendered in favor of Midgley. Mell appealed to the board of examiners-in-chief, where the decision of the examiner of interferences was affirmed. Mell then appealed to the commissioner of patents, where the case was set for hearing on October 1, 1907.

Continuing, Judge Van Orsdel shows that on August 30, 1907, before the final appeal could come before the commissioner, a successor of the first primary examiner to pass on the case, requested jurisdiction of the interference for the purpose of considering the patentability of the issue. On each appeal, Mell had insisted upon the non-patentability of the rim in view of a prior patent to one Harris, to which he referred specifically in his first motion before the primary examiner to have the interference dissolved. The request of the primary examiner having been granted, the latter took Mell's view and declared the invention unpatentable, basing his decision on the Harris patent, in spite of the fact that this patent had been considered not only by his predecessor but by the examiner of interferences and the examiners in chief, when Mell's motion and appeals had come to them.

Midgley then petitioned the commissioner of patents to set aside the primary examiner's decision and to restore the case to the condition it was before, ready for a final appeal before the commissioner as to priority. This petition was granted and the case on appeal came for a final hearing, which on December 6, 1907, resulted in the commissioner affirming the decision of the examiners in chief and indicating both the validity and priority of Midgley's patent claims. Mell filed a motion for a rehearing, urging that the commissioner had exceeded his authority in setting aside the decision of the primary examiner. This motion was denied, whereupon he took his appeal to the court.

We are not required to pass upon the regularity of the action of the commissioner in this proceeding, the court explains. That question is not before us for consideration. The patentability of an invention is a question to be determined by the Patent Office and not by this court upon appeal in an interference proceeding. There are two reasons why Mell cannot be heard to complain of the order of the commissioner; first, because it was his appeal that was reinstated, and the order reinstating the appeal must be presumed to have been for his benefit, and, second, because he is not in a position to raise the question here presented. At the time the Commissioner made the order complained of, Midgley had a judgment of priority in his favor. Mell, in the fact of that judgment, was in no better position to raise the question of patentability than that of a disinterested party. It is well settled that a disinterested party is never in a position to raise such a question. The commissioner is charged with the duty of representing the public interests in the issuance of a patent, and, when he has declared an invention patentable, a mere disinterested party cannot question his judgment. This being true, the reference of the question of patentability to the primary examiner, so far as Mell is concerned, amounted to nothing more than a discretionary move on the part of the commissioner, presumably for the purpose of gaining further information, and, when he again took up the matter of the appeal from the board of examiners-in-chief, whether regular or irregular, a question upon which we express no opinion, he simply resumed consideration of the only issue before him in which Mell was entitled to be heard, namely, the priority of invention. Upon that question alone he passed, and that is the only matter before us for consideration.

All the tribunals of the Patent Office found in favor of Midgley. Mell failed to establish any date prior to Midgley's filing date, and there is no hypothesis upon which a judgment in his favor could be based. We find no reason to disturb the decision of the commissioner of patents. The judgment is, therefore, affirmed.

Cartercar's Organization Changes.

With its removal from Detroit to Pontiac, Mich., the Cartercar Co. has chosen a new board of directors, so that the board now includes William H. Dawson, A. G. North and H. G. Hamilton, of Pontiac. The latter is secretary-treasurer and general manager of the Rapid Motor Vehicle Co., with which the Cartercar Co. will be closely allied. R. A. Palmer, in addition to being secretary, will continue as general manager under the new arrangement, having acted in that capacity when the concern was under its old name of the Motorcar Co. The president, Frank T. Caughey, indicates that the new plant was acquired through an amalgamation with the Pontiac Spring & Wagon Works which formerly occupied the factory and the principal stockholders of which were willing to abandon the horse vehicle business to engage in automobile manufacture. The old Motorcar plant at Detroit has been sold to the Constantine Motor Car Co., of Constantine, Mich.

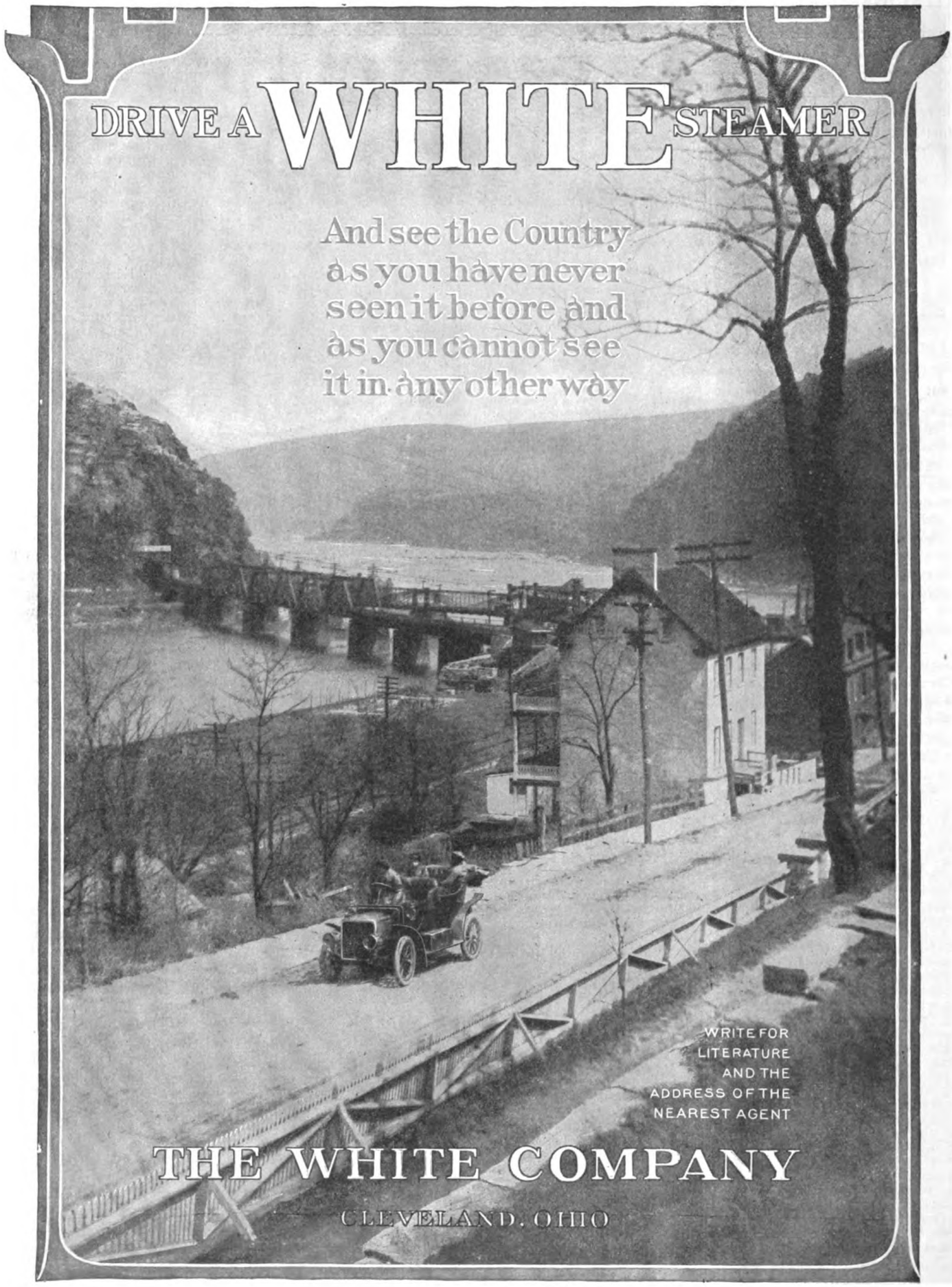
Hotel Man Heads a Cab Company.

After a legal fight, the Hotel Knickerbocker, of New York City, has succeeded in obtaining a cancelation of the permit of the New York Taxicab Co. to stand its cabs about the hotel, and wil hereafter be served by cabs provided by the Universal Taximeter Cab Co., a newly organized concern, of which James H. Stack, the manager of the hotel, is the president. Associated with Stack are John H. Naughton, treasurer, and John F. Mulgrew, secretary. Fifty cabs are being built for the new company in Boston, after which larger lots will be produced. The machines have 20 horse-power, four cylinder motors, and are of the laundaulet type.

St. Louis Selects Show Dates.

St. Louis has decided on February 15 to 20 for its automobile show dates. The local Automobile Dealers' and Manufacturers' Association has secured the Coliseum building for the purpose.

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Diversity in Automobile Design.

It is now at least two years since it was agreed by nearly all the self-styled critics of the industry that the point of almost-finality in design had been reached, and that from that time forward, little in the way of novelty or important "trend" was to be expected. This was a true forecast in respect to the adaptation of the basic principles involved, but little more. For though the typical car of given weight and power has undergone small alterations during the last couple of years, and stands to-day, as it did at that time except in the matter of the minor changes which are annually reported, still the changing conditions of the market which have altered the status of such a car—no matter whether it be small or large, have served to change the method of its design and construction not a little. Indeed, the deadly sameness which was foreboded appears even further off now than it did when the forebodings first were heard—that is to say, considering the broad purpose of the machine, as well as its technical details.

Of the changes in market status, perhaps none of recent recognition is of more significance than that which is now in progress, in which the medium powered and small car is being elevated from its secondary position to one of primary importance in the field. For just this is taking place, rating importance in terms of numerical output. Built with an eye to the price-inducement feature, in quantities, and for middle-class consumption, the original medium and small sized car was not given the attention, neither by the draughtsman or the production engineer, which its real worth demanded. This fact was not recognized at first, and perhaps the abrupt decline in the popularity of the small runabout of a year or two ago, may have been influenced quite as much by this cause as any other. The establishment of thoroughly accepted lines of good practice, however, and the development of well tried rules of construction in the better equipped factories, made possible the production of machines of reduced size in which practically no sacrifice of structural excellence existed. The possibility of stagnation was thus warded off by the demand for miniature reproductions of the better known types of car, and that demand is growing at a stupendous rate just now.

Another evidence of the natural opposition to the establishment of stereotyped designs is found in the present status of the six-cylinder car. Not lending itself readily to the purposes of the very small car, this type of machine is necessarily confined to machines of a rather limited power range, or that upwards of the thirty rating. Hence the maker of six cylinder machines who desires to engage in the swift competition for supremacy in the hitherto despised small car field, must perforce return to two or four cylinder practice. In one notable instance, this has been done by a foreign maker whose previous abandonment of twin and quadruple types was the occasion of considerable stir at the time. As if to ward off any possible suggestion of stagnation, this particular maker now is advertising a line composed of no less than eight chassis of different powers, prices and sizes.

Thus the oscillations of the market, which, though controlable to a degree are by no means entirely under the sway of the builder, tend to induce corresponding changes in the structural features of the product. In every case the structural changes which they induce are influenced by the effects of previous swings of the pendulum. In no case does an apparent return to former practice entail an absolute repetition of discarded designs. At the same time, instead of the promised concentration of types and models to one or two accepted styles, as had also been forecasted, the general purposes of the available products continues to manifest a wide degree of variety. Finality is still a very long way off.

Motor Buggies and Their Problems.

During the brief period of its existance as a distinct type of automobile construction the high wheeled motor buggy has developed to a point where its makers have discovered—much to their surprise—that far from being the simple proposition it appears from the structural point of view, it entails sundry problems which are of tremendous importance in their effect upon the success of the vehicle. Superficially, it would seem that the mere adaptation of mechanical propulsion to the practically unaltered buggy type of vehicle should carry no serious difficulties in its wake. Actually it has been found by the more successful and studious of its adherents, that it presents a number of characteristics which are not to be found in either the carriage or more conventional automobile fields. In a word, the hybrid type, has evolved into an entirely new entity which though it retains the outward semblance of its forebears, yet possesses a number of important eccentricities of its own.

One of the most important of the problems encountered has been, and still is acknowledged to be that of retaining the adjustments of nuts and bolts. The combined influences of the short wheel-base, high-wheels and solid tires which are characteristics of the motor buggy, produce a far greater amount of vibration than is encountered in the more ordinary types of automobile. This, coupled with the fact that the lighter bodies used, require lighter spring suspension—this also tending toward the same result unless special provision is made against it—causes even the most trustworthy forms of locking nut to give way at times, and results in a rattling loose of all sorts of fastenings which apparently have no cause to be disturbed. In consequence of this unfortunate trait, the products of the more careless and hasty builders have not invariably fared as well as might

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have been expected, and in the heated rivalry which exists it is freely charged by several of the better known makers, that their less cautious competitors are responsible for no small injury to the prospects of the trade. At all events they acknowledge that the problem of properly insuring against rattling, is one of their most serious difficulties.

Similarly, the spring suspension is entitled to a greater amount of consideration than is invariably accorded it by these makers, while the racking effects resulting from the tractional and torsional strains of the power plant upon the carriage gear are not always appreciated to the full extent which they merit. Furthermore, it is found that where all these points are taken seriously into account and as wisely provided for, the resulting construction is much more massive than that of the conventional type, so that the really cautious maker finds himself in the unfortunate position of having to combat the arguments of his competitors against the adoption of "needless weight."

Thus without in the least questioning the utility of the buggy type of vehicle, or its undoubted strength in its own peculiar field, it is beyond question that the makers of that restricted class are struggling with a very critical situation just now, and one which bodes no good to their own interests unless they act with proper wisdom in the construction of their product. It has been proved that the ordinary carriage gear is not sufficiently staunch to withstand the stresses of motor propulsion for a proper length of time. Further, it has been found that special provisions are necessary in suspending the body and securing the fastenings of all parts if adequate life and mileage service are to be obtained. Recognition of these facts and proper steps to safeguard the product must become general to the trade, or the market will become surcharged with vehicles which are practically unsalable, and the demand for them will fall as suddenly as it arose.

"Style" and Emotional Influence.

Wide differences exist in many cases between what men say they want and what they really want, and it is well for the manufacturer endeavoring to cater to any large public demand to recognize the phenomenon. The deception attempted in this direction by buyers is often unconscious, resulting from some pose or affectation of the mind adopted for purposes of conforming to recognized standards of "common sense" or business acumen. Perhaps the most cited example of the disparity between expressed preference and actual selection is the universal instance of the dissimilarity of the woman verbally pictured as the ideal and the girl who gets the wedding ring, but the daily affairs of commerce provide equally convincing proofs of the fact that the ordinary human being is not so absolutely and abstractly utilitarian as he would have one believe, and that simple emotional influences exert great power.

Automobile buyers as a class assume an air of critical inquiry into the respective mechanical merits of the machines that are presented to their consideration, suggesting the idea that their ultimate selection will be made strictly on that basis. In a large measure it is true that the design and constructional features are gone into very thoroughly by the present day purchaser, the growth of technical knowledge and understanding having brought about this result. But mechanical excellence in proportion to price is not alone the determining factor in their choice, though it may be the preponderating one.

For the majority of people there is a distinctly emotional background and aspect related to the purchase of a motor car, and while prudence may suggest a careful reckoning of the cost and a cautious effort to insure a full value for the money expended, yet the governing cause of the purchase is usually an emotional one, either purely selfish or of sentimental origin, as the buying of automobiles from purely practical and economical reasons is, as yet, rather limited. But although the buyer may be getting a car to gratify his own fancy or to make his family happy, he cannot reasonably be expected to confess, even to himself, that what he really is after is as much splendor and show as his pocketbook can afford and his good taste will tolerate. Feeling safe in shopping among makes of cars bearing good repute, his examination of the mechanical features often is superficial, and while he may have distinct predilictions for a given number of cylinders and certain specifications concerning the seating capacity he desires, the less obvious features of the construction do not greatly concern him nor affect him in his course.

What in boyhood was his pleasure in bright red paint on his wagon has probably been modified to a desire for "style," the elusive and transient nature of the latter giving it possibilities for wide interpretation. If he be seeking a runabout he may incline toward a racing machne effect in factory gray with unfinished woodwork, mutely hinting at a costly and powerful chassis beneath the pronouncedly modest exterior, or his early affection for brilliant hues may still remain with him, so that the appeal of a touring car chromatically graduated to his liking is practically irresistable. Then again, such subtle forms do conceptions of "style" take that the mere presence of a famous maker's name on the hub caps, together with the incidental features of appearance proclaiming the car's distinguished origin, may meet his secret views as to what is desirable, whether he be familiar with the character of its construction or not.

Conspicuous examples exist of motor cars of the highest mechanical excellence that could not be sold because the maker refused to make any compromise to style, through a mistaken idea that the public would soon learn to make its choice without regard to externals. The public itself, with its show of serious investigation and its patter about engine theory, chassis structure, and the like, lent intellectural support to the belief, but the financial support went drifting away to where buyers saw the glint of brass and color and still had reasonable ground for confidence in the mechanism. Protestations by buyers that it is solely a superiority in efficiency and economy that can win them should not lessen the manufacturer's keenness in selecting for his models those combinations of curves, colors and fittings which will appeal to the sense of style and be suggestive of opulence, pleasure and speed.

COMING EVENTS

October 24, Los Angeles, Cal.—24 hours race.

October 24, Long Island—Vanderbilt Cup contest.

October 31, Philadelphia, Pa.—Automobile Club of Philadelphia's sixth annual tour for the Brasier Cup.

November 3, New York City—New York Automobile Trade Association's postponed hill climb, Fort George hill.

November 23, Savannah, Ga.—Automobile Club of America's 200 miles light car race.

November 26, Savannah, Ga.—Automobile Club of America's (New York), 400 miles race.

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ALL READY FOR THE FOURTH VANDERBILT CUP RACE

Seventeen Entrants to Start—Two Withdraw at the Weighing-In—Danger Spots on the Course Made Safe—Practice Spins Promise Speed and Result in Only One Accident—Arrangements for Transportation and Accommodation of Spectators—Irish Volunteer Regiment to Assist Guarding Course.

In an array suggesting aptly the full panoply of war, the 17 contestants who are to dispute the fourth contest for the Vanderbilt Cup are encamped about the battle ground of next Saturday's tournament. During the past fortnight they have lived beside the course, trying out their cars in the early practice hours of the morning, adjusting and overhauling them by day. With their mechanics, assistants, supplies, parts, tools and accoutrements, they have been in arduous training for a race which takes on double significance because it is the first of its kind in two years, as well as the first in which the speed possibilities of the new Long Island Motor Parkway will be tested to the full by a large number of racing cars in unhampered flight.

The Long Island Sweepstakes race of September 10th furnished a promising introduction to this event, though the rates of speed then developed were not prodigious as racing speeds are rated. Later efforts in practice have proved that better times may be looked for in the Vanderbilt contest itself, while the number of cars in the race, together with the fact that they are all of high power, increases the probability of a good contest. From all that may be gathered of the cars, the drivers and the course, however, there is little basis for a prediction that excessively high running speeds will be attained, although ample prospects are held forth for stiff competition and a race full of incident.

Of the 17 cars which will start in the contest, nine are of American manufacture. Of the foreign contingent, three are German, three French, and one Italian. For the first time in its brief, but eventful career, the cup will become the subject of individual instead of team competition. This feature lends added zest to the affair. For with the disappearance of the team status, each entrant is thrown completely on his own resources, and no opportunity is offered for the schemes which have been worked to advantage in several of the great international races between representative teams where the competitors drove according to a preconcerted plan—some for speed, some for endurance only, and others with the object of taking advantage of their own particular skill in negotiating difficult spots in the course.

According to tradition, the race is scheduled to be started at daybreak. The cars will be dispatched at one-minute intervals and unless the first round proves an unfortunate one for Car No. 1, the Locomobile machine, with a clear road before it should pass the grandstand within three or four minutes after the departure of the last car from the starting line. As in the previous Vanderbilt contests, William K. Vanderbilt, Jr., will act as referee, despite the fact that this year he has a personal interest in the outcome of the race in the performance of his own car. Also, as in previous contests for the cup, Fred J. Wagner will slap each of the drivers on the back as he charges them with his energetic "Three-two-one-go!"

For those who desire to witness the race, ample provision has been made both by the Long Island railroad and the management of the Long Island Motor Parkway. On Friday night the grandstand will be illuminated by calcium lights, while the gates will be thrown open at midnight, when ticket selling will begin. Trains will be started from Long Island City and Brooklyn at all sorts of unearthly hours and will arrive in the same sequence in which they are scheduled to start—provided that the ever unreliable crowd furnishes the necessary



ROBERTSON, LOCOMOBILE



FLORIDA, LOCOMOBILE

Entrants and Order of Start.

No.	Driver and Entrant.	Car.
1	Florida, Locomobile Co.	Locomobile
2	Dennison, Knox Automobile Co.	Knox
3	Stricker, Robert Graves	Mercedes
4	Haupt, Chadwick Auto Co.	Chadwick
5	Luttgen, W. K. Vanderbilt.	Mercedes
6	Lytle, Clifford V. Brokaw.	Isotta
7	Ryall, James B. Ryall	Matheson
9	Kilpatrick, Hotchkiss Import Co.	Hotchkiss
10	Pouget, H. P. Whitney	Brasier
11	Patschke, Acme Motor Car Co.	Acme
12	Salzmann, E. R. Thomas Motor Co.	
15	Chevrolet, Matheson Motor Co.	Matheson
16	Robertson, Locomobile Co.	Locomobile
17	Strang, Paul Lacroix	Renault
18	Keene, Foxhall Keene	Mercedes
19	Gill, E. R. Thomas Motor Co.	Thomas
20	Bourque, Knox Automobile Co.	Knox

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CHEVROLET, MATHESON



RYALL, MATHESON

encouragement to the officials of the railroad.

For those who motor to the course ample parking arrangements have been made. Indeed, to assist in that stratification which is a necessity in all momentous gatherings of the sort three distinct grades of parking space have been provided by the thoughtful A. R. Pardington, general manager of the Parkway, and his assistants.

Class "A" spaces, are on the south side of the grandstand stretch, running down on that side of the stretch for more than a mile. Purchasers of these parking spaces may enter the course at any time of the day and leave at their pleasure. The privilege of this section is disposed of at the modest rate of $50 per car.

Class "B" visitors will be on the northern side of the grandstand stretch. Holders of parking spaces in Class B will be required to take their positions before the race starts and their cars cannot be moved until after the race is declared off by the referees. As being a less advantageous position in some respects, this section is let at only the modest price of $25 per space.

Purchasers of "general admission" tickets under the class "C" designation, however, which cost only $10, have the advantage of being able to select their own parking spaces, and may attain to the Class "B" privilege by the payment of an additional $15 if they so desire and are able to find spaces unoccupied. In order to reach either of the sections or the parking spaces beside the course and within the right of way, it will be necessary to go to one of the three toll lodges, which are located, respectively, at Bethpage, Massapequa and Meadow Brook.

In addition to these purchasable coigns of vantage, sundry private enterprises undertaken by the local residents along the highway sections of the course provide ample space at modest rental figures, while further opportunities to view the race are offered at the numerous intersections of the course with the many highways of that section.

The Automobile Club of Hartford, which will tour to the race in a caravan of 70 cars, more or less, has engaged a big parking space near the grandstand. The Long Island Automobile Club has a generous section in reserve for its members. The White, Stevens-Duryea, Peerless and Maxwell branches and agencies have all arranged for parking spaces for their customers.

For the safeguarding of the course provision has been made for the reinforcement of the Nassau County constabulary, the Pinkerton men and the special police of the Long Island railroad by a troop of the semi-military, 600 strong, in the Irish Volunteers. This doughty band goes into camp to-night (Thursday) at Hicksville, and on the morning of the race will be distributed over the course in generous numbers. It is noteworthy that this is the only body outside the State militia which is permitted to carry arms, though how freely they will be permitted to use their weapons in keeping miscreants from encroaching on the course has not as yet been announced.



SALZMANN, THOMAS



PATSCHKE, ACME

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DENNISON, KNOX



BOURQUE, KNOX

Of the course, considered as a source of possible danger to the contestants, it may be said that while no definite guarantee of satisfaction can be held out to them, those sensation seekers who are desirous of posting themselves at points which will be the scene of possible bloodshed may choose from a number of localities which the drivers and watchers who have been studying the course for several days or weeks have picked out as perilous.

Of the two most conspicuous trouble zones—that at Jericho where the Oyster Bay road joins the famous Jericho turnpike, and the Colyers Corner turn—the latter has received the attention of the Cup Commission's road makers and has been rebanked during the week, while similar attention has been paid to the only grade crossing on the course, which is at Locust Grove. The Jericho corner, however, remains somewhat a menace, and has already been the scene of at least two accidents—one during the Sweepstakes race, and the other during the practice hours of last Sunday. Early this week it was reported to be in a badly rutted condition, though there is small doubt that it will be repaired before the commencement of the race.

According to a driver in former Vanderbilt contests who is at present in charge of one of the camps along the course, the most dangerous point which the drivers will have to consider is the grade crossing just mentioned. Here, although the danger from trains has been practically eliminated by the establishment of a signal system, the difficulties arising from a combination of a down grade, an "S" turn, and an oblique crossing of the rails, are thought to be far from conducive to the safety of the drivers.

In the course of the practice try-outs, which have assumed important proportions during the week, the usual foggy weather conditions have prevailed to a disconcerting extent. The usual quota of "clockers" have sat religiously upon the fence rails along the course, however, and some truly remarkable results have been obtained, though in one or more instances cutting of the course by drivers anxious to make a reputation was reported—this being a well authenticated method of obtaining publicity on previous occasions of a similar nature.

According to the unofficial reports which emanate from this source, George Robertson, who is to pilot the second Locomobile entry in the race, is ambitious to do at least one circuit in 18½ minutes, which would mean a speed of 78 miles an hour on the average. His best round up to the present, however, is reported to have been 20 minutes flat, though taken from a standing start. Ryall, who will handle the smaller Matheson, was credited with a 20:30 lap on Tuesday of this week, and incidentally has earned a reputation for reckless handling of his machine. Haupt, of the big Chadwick entry, also has been set down as careless of his own safety in his desire to gain high speed. Times of 21:00 and 20:40 are reputed to have fallen to his lot.

Among the drivers of foreign cars, Strang



HAUPT, CHADWICK



BASLE, KNOX

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is being watched with interest. He appeared for the first time on Tuesday morning, but did little or no spectacular driving. Kilpatrick also appeared on Tuesday with the Hotchkiss car, but failed to develop any remarkable showing. An incident of the practice on the same day was an impromptu bout between Florida and Robertson in the Locomobiles, and Keene in his Mercedes. The latter had something like a half-mile start over the others, it was said, but was headed after a mile or so of running. Shortly afterward, he withdrew from the course.

Of the other two Mercedes drivers, as Grand Prix racer, which was known to be over the limit of 2,644 pounds, and the B. L. M., which failed to appear. As most of the cars were built prior of 1907, they had little difficulty in squeezing through. In the case of the Acme, it was necessary to remove some of the gasolene from the fuel tank, while the Isotta had to be stripped of its tire irons before it was admitted. The larger Matheson also had to be lightened somewhat, it was said, as did the Chadwick. In several other cases it was found necessary to remove part of the fuel supply. The Renault and Robert Graves' Mercedes were permitted to weigh in this morning, though

"Grandstand," with the intention of taking the eight o'clock train out.

The man at the gate, when asked if the train was ready, (it was then 7:55) replied: "Naw, it don't go at eight. The race is a frost and the company is plum disgusted. They're going to send out the specials when they get enough people here to pay for the cost."

There were not enough people for the "company," and by the same token, there were not enough for the crooks. So we had to wait until eight fifty-five, and then the proper number had collected to satisfy the economical scruples of the train despatcher,



KILPATRICK, HOTCHKISS



STRANG, RENAULT

Stricker suffered a setback on Sunday at Jericho when his car went wrong at the turn and crashed through the fence after being ditched. Murray, his mechanic, was seriously injured and the driver himself was so badly shaken up that he has not again appeared on the course, although it is said the car was not injured beyond the possibility of being repaired in season for the race. Luttgen in the third of the German delegation, was out on Monday, and on Tuesday was timed in 23 minutes for one lap.

Few changes have been made in the list of drivers since it was first announced a week or so ago. Basle, who had been nominated as the driver of the first Knox car, was replaced by Albert Dennison, who is a factory man. Florida, who had been nominated to drive the No. 1 Locomobile, was in question for a time, according to report, but apparently proved his ability to perform creditably, for his position in the race has since been confirmed. Some doubt which had existed as to who was to pilot the third of the Thomas entries, was, of course, removed, when the largest of the cars was withdrawn at the weighing-in.

Incidents connected with this formality, which occurred at the Garden City garage yesterday morning, resulted in the withdrawal of two of the candidates—the Thomno official statement was obtainable to the effect that either of the three would fail to compete.

Sidelights of a Big Contest,

Like the proverbial county fair, much of the interest of a popular event such as the Vanderbilt cup contest, hinges about the human element of the crowd. "Side shows" in the accepted sense may be lacking, but the spirit of the side show—the curiosity of the people on the one hand and the eagerness of persistent manipulators of the agile little pea and the elusive card to assuage it, on the other—is to be found in all its thrift and persuasiveness. Former Vanderbilt races have set a mark for enterprise of this sort, and the experiences of many at the recent Long Island Sweepstakes races go to bare out the probability that the forthcoming event will be in no way an exception to the rule. It is on this account that I issue solemn warning to all who intend to witness the race—particularly if they are to journey down to the Parkway by way of the Long Island Railroad—to be constantly on their guard. Otherwise they may fall heir to some such fate as was mine at the recent Sweepstakes. Which brings me to my tale.

Saturday morning I hastened to the Flatbush Station of the Long Island Railroad and bought a round-trip ticket for the and also to let the "gang" slip in and get busy.

By the time the conductor got to our car and the passengers felt for pocket books where tickets had been placed, the results of the first haul came to light, and no fewer than ten victims had been "touched." Several watches also went, and a few scarf pins changed hands. The train was supposed to be a through express, and indeed it passed Jamaica, but came to a dead stop at Floral Park, where we were ordered out for a change.

The order was well put, because it was there that several more wallets, watches and pins were changed from their rightful owners' pockets to those of the unrightful. By this time it might have been supposed that the little company that made up the train load would have been sufficiently "wise" to take care of what had not been lifted, but not so.

At the terminal streak of ashes, politely known as the station for the grandstand, the usual rush to get out of the cars occurred. There were less than two hundred on a train that would have accommodated a thousand, yet the two hundred pushed and pulled as they will when the big crowd goes on the 24th—and then what golden opportunities for the light-fingered gentry! For had the gang "lined out" the rush play

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they could not have done better than the people themselves. The thieves just worked them for another bunch of "leathers," "tickers" and "sticks."

The run to the Motor Parkway side is over grassy plains, go as you please. For no road or path has been made, and after covering a short half mile you haul up against a five-foot cattle wire fence, which bars further progress.

This wire is stretched along both sides of the track, separating you from it by several feet, which for the safety of the race drivers is the finest sort of thing imaginable, and it nearly served its purpose on that occasion. But it did even more than that, as my further experiences taught.

By way of carrying out the impressiveness of the occasion, the Long Island Railroad provided a squad of nicely uniformed men in brown and gilt, who were conspicuously labelled "Police;" and stationed them at Floral Park and at the grandstand station. Just why they were at either place—unless, indeed, for purposes of ornamentation—was not shown. For they did nothing but pose, could not answer a single question when asked, and actually played into the hands of the crooks. In fact, everything seemed to be favorable for the business of the bands who flocked to the race—even to the fencing arrangement.

One of the Sunday papers observed that "As usual, the gamblers were very much in evidence."

You bet they were in evidence. If the Sheriff of Nassau County and his band of comic opera police, with their pie plate badges, had been on to one-tenth part of the job, they would have known that the groups of shifty-eyed vultures who openly pursued their three card and shell games right under their noses, did so not for what they hoped to fleece from the public in the run of the game, but purely to get the crowd so interested that the pick-pockets could work.



LYTLE, ISOTTA

There was plenty and more for those "police" to do had they been out where the doings were, but they were not. The five-foot cattle wire fence heretofore mentioned, kept the crowd outside the grandstand, safely away from the cement motor way, and at the same time kept the "police" safely away from the crooks, so that even had one of the officers had a mind even to speak to one of them he could do so only through the meshes of wire. The police were all inside the fence, and as they probably had nothing to steal, the crooks remained on the outside. Thus you see the conditions in the neighborhood of the grandstand are ideal for the business of the underworld, and it will be prepared to take every advantage of the fact on the 24th.

The fake games of no fewer than fifteen bands were working all the time, within a radius of a city block, and right under the eyes of the police, who were so thick along the track that they almost held each other up. At one time when the hands of the clock neared noon a steady line of star badges glistened along a path trodden by the feet of the wearers from the track to the pie tent, and then the so-called Nassau police had to pass right through the "monte men" and "shellers" in order to reach their destination.

When one remembers the clam-like innocent faces of these arms of the rural law, it is difficult to think that "graft" could have reached them in the fastnesses of their happy, little Long Island homes. But a few remarks let fall by one lean and hungry wolf seemed to indicate that such might be the case.

A chap was walking away from a group that was trying in vain to pick "the red card," when another chap called to him:

"Hey, Beef, where you going?"

Beef said he had enough.

"Too many 'Bulls', he said.

"Bulls? Hell," said the other. "Get to work. Work when we have a bunch like this, and don't 'slough.' Don't you know we have protection?"

This word "protection" was heard several times thereafter. And whether there was anything of that kind or not, the place was overrun with all kinds of bad men, and they worked the comparative handful of people present to a finish.

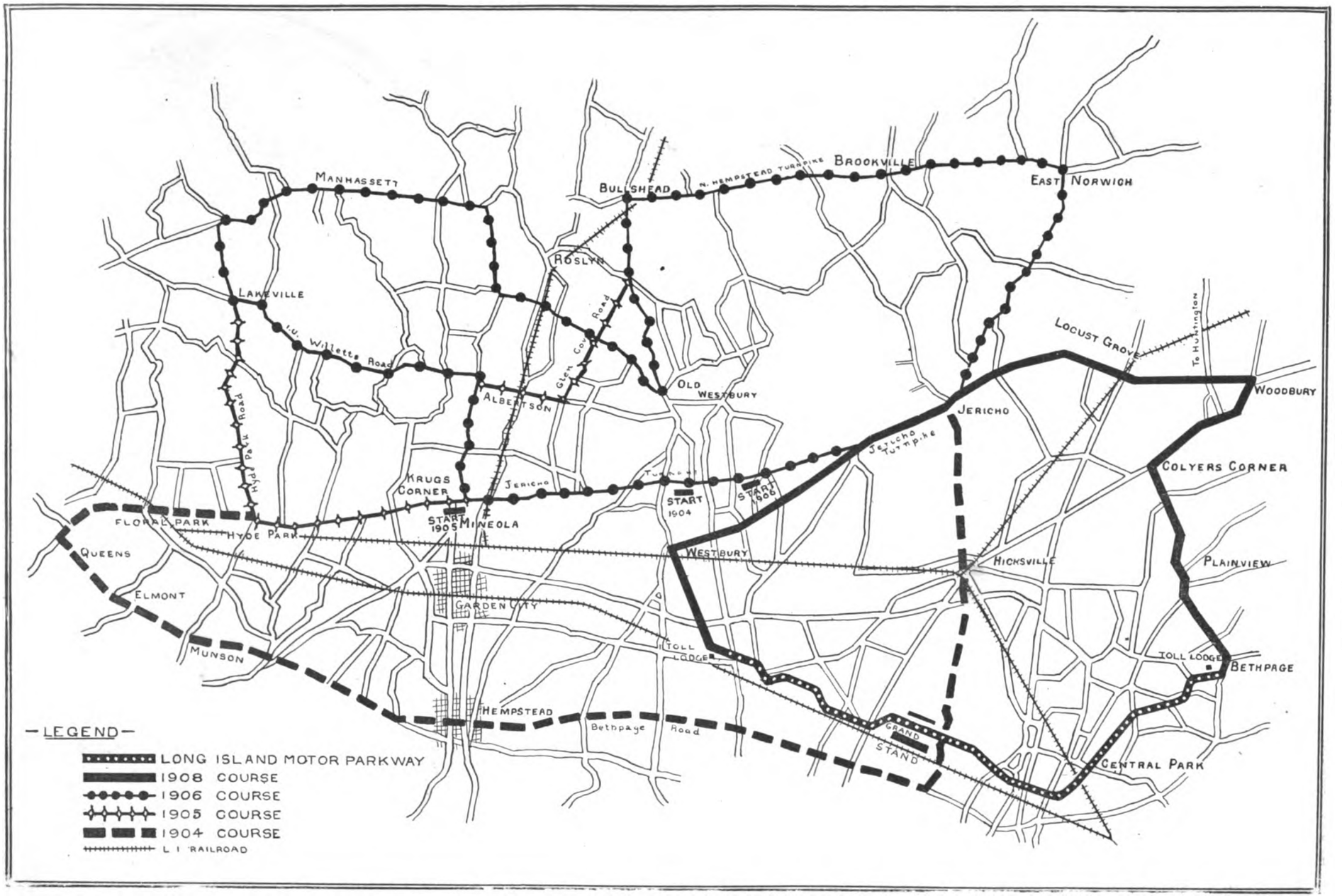
Further, they will be on hand bright and early on the 24th, and play every point from 34th street to the grandstand and return. For, mind you, this is a true story, and here is the secret of it.

The writer went through all he has recounted, and heard and saw a lot more, and on top of that the wolves "got him" at the last moment. At Jamaica, either a local hand, or part of the organized gang, was



KEENE, MERCEDES LUTTGEN, MERCEDES STRICKER, MERCEDES

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MAP SHOWING THE VANDERBILT CUP COURSE FOR 1908 AND THE COURSES OF THE THREE PREVIOUS CONTESTS.

The 1908 course, as shown in this map, traverses a section of Long Island lying largely outside and to the east of the sections traversed in either of the three previous years, when the race was held. It will be seen that it covers only a short stretch on the Jericho turnpike, as compared with the older courses, this stretch—extending westward from Jericho—being common to the four. The new course is touched at only one other point by any of the other courses, that of the year 1904 crossing at a point just east of the grandstand, which is located on the completed portion of the Long Island Motor Parkway. The length of the course is a trifle over 23.4 miles and the completed portion of the parkway is about 9 miles in extent.

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in waiting and got to work when the change of cars was being made by those passengers who were bound for Brooklyn instead of Manhattan. There was not much of a jam, but it was enough for the purposes of the talent, and when one after another in the Brooklyn bound train felt for their wallets, wail after wail went up, "I've been touched." And be it spoken in shame, my voice was one of the first to be upraised.—B. M.

The Cup and Its History.

The inauguration of the Vanderbilt Cup contest occurred in June, 1904, when William K. Vanderbilt, Jr., pioneer motorist and one time holder of the world's mile record, donated the trophy to the American Automobile Association. By the terms of gift it was to be competed for annually under the auspices of the American Automobile Association, or its successor, at a distance of not less than 250 miles nor more than 300 miles, and over the highway—it being provided that no part of the course was to be upon a track. Those eligible to compete were to be all clubs recognized by or affiliated with the A. A. A., or similarly recognized by the Automobile Club of France. During 1904 and 1905 it was specified that the race must be run within the United States. Subsequently it was provided that it might be contested in the country whose officially constituted representative then held it, practically at the option of the holding club.

By the terms of the "Treaty of Peace," signed September 17th, whereby the A. A. A. relegated all claim upon racing events of an international character to the Automobile Club of America, provision was made for an alteration in the status of the famous Cup from that of international to national significance. Although the exact terms of the "revised" deed of gift by which the donor confirms the arrangement have not been made public, it was stated that after this year, the two cups (the Vanderbilt and the Grand Prize of the A. C. A.) "are to be deeded to an independent racing association and are to be contested for annually, the Grand Prize Cup as the international trophy and the Vanderbilt Cup as the national trophy."

The Vanderbilt trophy itself is a magnificent piece, standing about two and one-half feet high, and measuring eighteen inches across the brim. On one side of the bold relief is shown the figure of a racing car in full flight upon a beach course, the figure bearing a suggestive likeness to the donor himself seated in the car with which he captured the old world's record of 39 seconds for the mile, on the Ormond sands. Upon the other side is a legend of presentation mentioning the American Automobile Association as recipient and stating that the trophy is to be competed for annually "by cars under 1,000 kilos." Save for a heavy laurel wreath surrounding the upper part of the bowl and a little fine beading around the base, the cup is bare of ornamentation and elegant in its simplicity. Three times contested, it has been won as many times by representatives of France.

The 1904 race, which was run on October 8th, saw 16 starters composed of four teams representing the United States, Italy, France and Germany. Thre were five American cars, one Italian, six French and four German cars. No elimination trials for an American team were necessary. George Heath, an American, driving a 90 horsepower Panhard, as a member of the French team, won the cup for France, after covering the 284.4 miles course in 5:26:45, at an average speed of 52.22 miles per hour. Albert Clement, of the French team, piloting a Clement-Bayard, was second and Herbert H. Lytle secured a place for America by winning third place.

This initial contest for the cup was run in 10 laps over a 28.4 miles circuit, starting at Westbury and running in an approximate triangle with Jericho, Plain Edge and Queens as corners, the turns of which were all taken "right handed." Heading eastward from the grandstand along the Jericho Turnpike to Jericho, the cars switched southward to the Bethpage Road, turning in a westerly direction towards Hempstead, where was located a control. From Hempstead the route was northwest to Floral Park, and back into the Jericho turnpike. In this event, Tart, in a Panhard, made the fastest lap in 24:04, at a rate of 70.9 miles per hour.

The second contest for the cup brought a sufficient number of entries to necessitate an elimination race to select the American candidates. This was held September 23, 1905. Bert F. Dingley, with a 60 horsepower Pope-Toledo was the winner of the trial, with Joseph Tracy, in a 90 horsepower Locomobile, second. Robert Jardine, in a 40 horsepower Royal, Frank Nutt, in a 50 horsepower Haynes, and Montague Roberts, with the 60 horsepower Thomas, also finished creditably. For these, however, the racing board, by virtue of its self-constituted right, substituted Lytle, with a 75 horsepower Pope-Toledo, Walter White, with a 40 horsepower White Steamer, and Walter Christie, with his 120 horsepower front driven racer. All of these had broken down in the elimination, but the board's decision was unalterable and they were placed in the contest proper which occurred on October 14th.

America, France and Italy were represented in that event with five cars each, while Germany had but four. France again triumphed, when Hemery, in an 80 horsepower Darracq, went around the 10 laps or 283 miles of the course in 4:36:08, his time being nearly an hour better than that of Heath of the previous year. Hemery's average speed was 61.43 miles per hour.

It was on this occasion that Lancia gave Hemery a great race, the former driving a 100 horsepower Fiat, doing the sensational work of the day, when he covered the 28.3 miles course on one lap in 23:18, the fastest round of the contest.

Heath, in his Panhard, running as a member of the French team, again scored second place, and Tracy, again driving the Locomobile, was third.

The race started at Mineola and ran "left handed" along the Jericho Turnpike, bearing northwest at Jericho to East Norwich, then westward to Bull's Head; down the Glen Cove road to Albertson and along the Willetts road to Lakeville; thence back to the Turnpike.

Like the 1905 contest, that which took place in 1906 was preceeded by an elimination to determine the American candidates, which was held September 22. This event was won by Joseph Tracy, driving the 90 horsepower Locomobile, in 5:27:45, with Le Blon, driving a 115 horsepower Thomas, second, and Walter Christie, with his 50 horsepower front wheel drive car, third. These, with Harding, who drove a 60 horsepower Haynes into fourth place, and Lawell, who was fifth, with a 110 horsepower Frayer-Miller, comprised the American team.

The Darracq was victorious a second time in the final event, when in a hotly fought battle, Wagner drove to another triumph for France in 4:50⅖, at an average speed of 65.13 miles an hour. Lancia, the Italian, in the 120 horsepower Fiat, gained second place; with Duray, at the wheel of a 120 horsepower DeDietrich, third. Joseph Tracy, in the Locomobile, made the fastest lap of the day when he covered one circuit of 29.7 miles in 26:20⅘—America's only solace.

The course, which totalled 297.1 miles, covered much the same ground as that used in 1905. Starting at Westbury, it retraced the route of the previous contest around to Bull's Head turn, at which point it ran south to Old Westbury, turning at a forbidding "hairpin" corner. Thence it threaded northeastward to Manhassett and around to Albertson; then back to the turnpike at Krug's Corner.

The winners of the three previous events, their net times and average mileages per hour, are shown in the following table:

TABLE SHOWING RESULTS OF PREVIOUS VANDERBILT CUP CONTESTS

Year.	Winner.	H.P.	Car.	Length of course.	Winner's net time.	Winner's Av. m.h.p.	Fastest lap of race m.h.p.
1904	Heath	90	Panhard	284.4	5:26:45	52.22	70.9
1905	Hemery	80	Darracq	283.0	4:36:08	61:43	66.9
1906	Wagner	100	Darracq	297.1	4:50:10⅖	65.13	67.3
†1908	Lytle	70	Isotta	234.6	3:39:10	64.25	66.4

† Long Island Sweepstakes race over 1908 Cup course.

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SEALED HOODS AND SHORT TALKS

Cleveland's Novel Three Days Reliability Contest—Open Air Oratory for the Benefit of Rural Audiences.

Eating some of the finest quality dust, bumping many hundred of the most prominent Ohio bumps in the vicinity of Cleveland, nine contestants started out on Wednesday, October 14, on the Cleveland Automobile Club's 470 miles, three days' sealed bonnet reliability run. The contest was held over three different circuits, starting each morning at the Forest City and returning there each evening after having covered between 145 and 170 miles. Of the doughty nine that embarked upon the three-lapped expedition, only four completed the run with perfect scores. These were: C. G. Bleasdale, driving a Maxwell; C. S. Carris, at the wheel of a Franklin, the only air-cooled car in the run; George Sperry, with a Thomas, and E. E. Ernest, Garford. This quartet acquitted itself with honor, for the run was strenuous indeed and the rules very strict. At the finish, every one of the cars, especially those claiming clean scores were put through the usual minute examination by the technical committee, every nut and bolt receiving the marked attention of the committee, nothing being slighted.

In one respect, this test was quite different from all others of the sort, for at the various towns encountered the cars were halted for ten minute intervals, while eloquent speakers, who were carried along, delivered orations on various pertinent subjects to the gathered population. All of the silver-voiced speakers received "perfect scores." The final report of the committee was as follows:

Perfect Scores.

	Per cent.
C. G. Bleasdale, Maxwell	1,000
C. S. Carris, Franklin	1,000
George Sperry, Thomas	1,000
E. E. Ernest, Garford	1,000

Cars Penalized.

C. R. Wedler, Garford Roadster	972
H. S. Moore, Stoddard-Dayton	943
J. H. Stickney, Chalmers "30"	721
S. Emerson, Chalmers "40"	†
Grant Johnson, Jackson Roadster	‡

†Withdrawn third day.
‡Withdrawn second day.

Figures in the gasolene consumption test were arrived at by a process of higher mathematics to show the pound miles per ounce of gasolene used, considering the weight of the car, the distance traveled and total gasolene used. The showing was as follows:

	Pound miles.
C. S. Carris, Franklin	338.2
H. S. Moore, Stoddard-Dayton	319.5
George Sperry, Thomas "6-40"	299.5
C. R. Wedler, Garford Roadster	286.7
E. E. Ernest, Garford Touring	281.5
J. H. Stickney, Chalmers "30"	257.7
C. G. Bleasdale, Maxwell Roadster	249.2

The cars checked out from the Hollenden early Wednesday morning and started to thread their way on a 162 miles round trip through Elyria, Ashland, Norwalk, Huron and Vermilion, at which towns the caravan paused to allow Hon. H. S. Vail to give the assembled multitude an interesting and educational disquisition on the marvelous progress of the automobile industry during the past ten years and the wonderful possibilities that the future held in store for it. He predicted an early arrival of the day when the automobile would be found desirable and useful by the great masses of American farmers. The efforts of automobile clubs to bring about fair play between motorists and farmers, and the endeavors to make the State build good roads that would be of benefit to all were explained.

This feature added to the interest of the tour in many ways, although some of the drivers grew restless when forced to wait at each control town while the lecture was being delivered. Between stops a fast schedule was maintained, forcing the cars to go as high as forty miles an hour in some stretches to make up for the time lost on rough roads. In fact, contestants complained that the time schedule calling for a 20 miles speed was entirely too severe.

Only one car was penalized on the initial journey. This was the Stoddard-Dayton, driven by H. S. Moore, who also laid the confetti. He was penalized 53 points for breaking several seals while trying to locate ignition trouble, which he later found was caused by a loose terminal screw in the coil box. A slight twist was all that was required to set the car in commission again. The intrepid Barney Oldfield's six cylinder Stearns car carried the officials.

During the second day's run, covering a triangle with Akron and Youngstown as corners, four more cars lost their perfect scores, leaving only a quartet of contestants with unblemished slates. C. R. Wedler's Garford, the only amateur entry, lost 14 points for breaking hood seals to ascertain why the engine stalled. The trouble was located in the radiator, which had gone dry. It was necessary to give it a drink twice between controls, which caused two points penalty each time. C. S. Carris, the Franklin driver who has been distinguishing himself by making perfect scores in various endurance runs, was penalized 12 points for taking on extra oil. Later, however, this was disallowed. Grant Johnson's Jackson was obliged to hoist the signal of distress when a roller bearing went wrong at Youngstown and was unable to get back to Cleveland that night. Next to Johnson, J. H. Stickney, driving the Chalmers "30," was hardest hit, when faulty spark plugs caused him a loss of 209 points.

Sam Emerson's Chalmers-Detroit "40," E. E. Ernest's Garford, the Thomas, driven by George Sperry, and the Maxwell, with C. G. Bleasdale at the wheel, came through with their tallies of 1,000 points intact.

Harry S. Moore, whose confetti car lost points on the initial trip, distinguished himself by falling into the clutches of the law at Akron. He was arraigned on two counts—throwing confetti upon the public highways and "driving at the rate of sixty miles per hour." Moore disputed the local chief of police and declared he was going considerably less than thiry-five miles an hour. He was allowed to continue in the contest when a citizen of Akron vouched for his subsequent apearance in court.

Senator P. W. Ward, W. F. and Harry Bonnell took up the prophet's mantle at each hamlet in which the tourists paused, in accordance with the grand educational campaign that the Cleveland club is promoting. At Youngstown the local automobile club gave the dusty ones a dinner, for which no little appetite had been created.

The third and last day of the 470 miles run saw four contestants finish with perfect scores. Only seven cars started on this last leg through Chardon, Painesville and Ashtabula and back to Cleveland, and three of these lost points. The Garford roadster, amateur entry, driven by C. R. Wedler, was penalized again for filling its leaky radiator; H. S. Moore's Stoddard-Dayton lost four more points for one minute's work on the accelerator mechanism, while Sam Emerson's Chalmers "40," which had hitherto had an unbroken tally, was put out of the running by its fan ripping off and punching a hole in the radiator. When the contest committee held its final meeting, it was decided to remove 12 points penalty against Carris's Franklin for taking on oil between controls, for the simple reason that it had been ascertained that other contestants had done the same thing at various times through a misunderstanding of the rules. Sundry oil and brake tests, which were to have been the wind-up of the contest, were eliminated.

New Orleans Gets the Racing Fever.

The motor racing microbe has gone as far south as New Orleans, La., and on November 7-8 a race meet is to be held at the local horse track. Lewis Strang is promised as an attraction for the event, but whether he will choose to grace the city before his appearance at Savannah some days later, remains to be seen. Strang's name, by the way, is being used to boom numerous meets just at present. Atlanta, Ga., had him booked to appear at a track event there on the eve of the Long Island Sweepstakes date.

Park Roads Uninjured by Race.

After the Philadelphia automobile race in Fairmount Park, on the 10th inst., Chief Engineer Vodges was surprised to find that the park roads had suffered very little damage from the high speed, even at the turns. A few men and a steam roller were able to put the surface in good shape again in short order. The bond of $2,500 filed by the Quaker City Motor Club to cover the cost of the repairs was more than ample.

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RIVAL CLUBS IN TEAM CONTEST

Chicago Athletic Association Defeats Chicago Automobile Club in Reliability Run—Only Amateurs Compete.

In what was heralded as the first competition of its kind ever held in this country—an inter-club contest—the Chicago Athletic Association met and defeated the Chicago Automobile Club by a score of 79 to 732 on Thursday last, 15th inst. Added distinction was gained by the contest from the fact that it was purely an amateur affair and was carried through without regard to trade interests of any sort. Long standing rivalry gave rise to the challenge to a team match which was issued by the Athletic Association. Upon its acceptance it was agreed that the representation should be made up of ten cars on each side. In the eleventh hour, however, four of the challenging team's entrants withdrew, leaving but six champions in the field. It was decided on this account to arrange the penalties on a pro rata basis. This served to enliven the task of the technical committee and also to obscure to a certain extent the full effect of the happenings on the 100-miles Elgin-Aurora circuit, pending their digestion by that august body.

When the final report appeared it was learned that three of the six starters in the "Cherry Circle" team of the athletic club had been penalized in small amounts, while six of the automobile club's representation had been mulcted in larger amounts. The statistical outcome of the calculations was as follows:

Chicago Athletic Association	Penalizations.
S. W. Ham, Locomobile	Perfect
C. T. Knisely, Premier	Perfect
C. C. Ireland, Stevens-Duryea	Perfect
F. W. Wentworth, Rambler	1 point
W. K. Cochrane, Stod-Dayton	25 points
W. K. Young, Thomas	53 points
Total points lost	79

Chicago Automobile Club.	
Bert Nash, White	Perfect
F. W. Gethro, Stevens-Duryer	Perfect
R. Tarrant, Jr., Stod-Dayton	Perfect
N. H. Van Sicklen, Apperson	Perfect
Carroll Schaffer, Stevens-Duryea	Perfect
T. P. Henderson, Studebaker	115.2 points
W. A. Egemann, Rambler	600 points
J. H. O'Hare, Thomas	1.8 points
C. E. Gregory, Thomas Forty	15 points
R. H. Colby, White	Perfect
Total points lost	732

The management of the contest was rather lax, inasmuch as the rules set down were none too closely followed, while their enforcement was not carried out in strict accordance with the prearranged plan. Thus, several of the drivers departed from the regular confetti-laid roads, and others replenished fuel and water supplies without regard to the restrictions imposed upon them. Such infractions, however, were excused in some instances, owing to the recognition of a "misapprehension" on the parts of drivers or observers as to the proper course to pursue. The inevitable outcome was dissatisfaction, loudly expressed by those whose lack of understanding of the rules was not accepted at full value by the referee.

Scarcely had the caravan started on its way, when misfortune clipped the wings of W. A. Egemann's Rambler, running under the Automobile Club's colors. While skimming along Michigan avenue, the car skidded on the wet asphalt into a curb and smashed a rear axle and wheel. The driver cheerfully telephoned for another car, a Rambler roadster, and when he received it, set out in pursuit of the rest of the pack. This caused a loss of 600 points to the score of the Chicago Automobile Club. It was a severe shock to the other members of the team, and, coupled with the smash-up of T. P. Henderson's Studebaker, almost caused despair. The second accident occurred on the out-going trip on Milwaukee avenue, when the driver attempted to swing around a loaded truck, skidded on the car tracks and broke a wheel. Like Egemann, he refused to withdraw, and telephoned for a new wheel, replaced the broken one, and started out to catch the others. This cost the automobile organization no less than 115.2 points. The other penalizations imposed upon this club were not so severe. J. H. O'Hare, driving his Thomas Flyer, lost 3 points for needlesly stopping for water between controls, "under a misapprehension," and C. E. Gregory's Thomas "40" was assessed similarly 15 points.

The opposing team suffered less keenly. Witt Cochran, driving a Stoddard-Dayton, dropped 25 points for stopping his motor while checking in; W. K. Young, handling a Thomas "Six," lost 53 points for syphoning gasoline from one tank to another, and F. W. Wentworth's Rambler had its perfect score chipped by one tiny point for adjusting a spark coil. Cochrane protested his penalization, claiming that he had already checked in to the best of his knowledge before he shut down his motor.

There was very little tire trouble on the run, although the bad stretches in certain parts were enough to worry any tubes. A large staff of speed sleuths were lying in wait for "picking" in the vicinity of Melrose Park, but the course was so arranged as to avoid these paths and fool those who had looked for a profitable day.

The route followed was through Itasca, Roselle, Dunning, Wooddale and Bensonville to Elgin. After checking in the teams set out for Aurora, where dinner was taken during a control of one hour.

In consequence of the success of this first venture the members of the association are now anxious for a longer and more strenuous run. It is planned to make the contest an annual affair, which another time, may take the form of a sealed bonnet run.

TREE CLIMBING STUNT AT LENOX

Not on the Card, but Knight's Car Does It—Bourque the Kingpin at Church Hill Climbfest.

In the course of a hill climbing contest held at Lenox, Mass., on Wednesday, 14th, inst., Floyd Knight, in a six cylinder Stillson car, not only mounted the hill at a goodly rate of speed but also climbed a stately white birch tree, stripping it of much of its daintily tinted autumn foliage. Knight did this not from choice, nor to damage property, but in order to avoid a collision with William Tolhursts's car. Happily no one was hurt. Shortly after this occurred, William Bourque, in taking the hill with a Knox, tried to take a few more things with him. He ripped up a four-inch iron guide post with its concrete foundation, roots and all, and kept right on without stopping. Upon a second trial with the same car, having eliminated all obstructions, he shot up the hill and won the event, a free-for-all.

The climb was held by the Lenox Protective Automobile Association and the nine-tenths mile course up Church hill and Aspinwall Park, with the finish line at the Aspinwall Hotel, had a grade that varied from 9.15 to 12.5 per cent., with three sharp turns. The event was well attended by local enthusiasts who numbered about 4,000. Three motorcycle events preceeded the automobile program.

Irving D. Sisson won the event for cars of 20 horsepower and under in 1:59, with Fred M. Smith and Edward C. Knight in Fords, second and third. Bourque took the 20-40 class with his Knox in 1:34; O. R. Hutchinson and Lester Phillips in second and third places.

In the class for big stock cars of from 40 to 60 horsepower, William Swan shot up the course in 1:38⅗, beating the time of Knight's Stillson by 9 seconds. Swan ran second to Bourque in the free-for-all.

The summaries:

Cars of 20 horsepower and under—Won by Irving D. Sisson, 18 horsepower Buick; second, Fred M. Smith, 15 horsepower Ford; third, Edward C. Knight, 15 horsepower Ford. Time, 1:59.

Cars from 20 to 40 horsepower—Won by William Bourque, 38 horsepower Knox; second, O. R. Hutchinson, 26 horsepower Pope-Hartford; third, Lester Phillips, 30 horsepower Pope-Hartford; fourth, F. A. Knight, Buick; fifth, James E. Crabe, Berkshire. Time, 1:34.

Cars from 40 to 60 horsepower.—Won by William Swan, Stearns; second, F. A. Knight, Stillson. Time, 1:38⅗.

Free-for-all.—Won by William Bourque, 38 horsepower Knox; second, William Swan, 30-60 horsepower Stearns; third, Stuart H. Clapp, Berkshire. Time, 1:19.

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CUDAHY'S MISPLACED CONFIDENCE

Millionaire Packer's Big Car Beaten in Match at Kansas City—Burman Captures Sensational Free-For-All.

Out in Kansas City, where the name of Cudahy is a mighty power, 10,000 persons or more, turned out on Saturday last, 17th inst., to watch the automobile races on Elm Ridge track, held under the auspices of the Kansas City Automobile Club, and more particularly to witness the J. P. Cudahy challenge race. The millionaire beef packer offered to pit his 50 horse-power Welch against any privately owned car in Kansas City, at any distance, "for money, marbles or chalk." Two owners picked up the gauntlet—James B. Porter, with a Chalmers-Detroit "Bluebird," and Frank J. Dean, who banked on his Packard. If some Missouri "showing" was wanted by Cudahy, this pair was ready to give demonstrations, as they affirmed.

Cudahy was enlightened shortly after the three cars started on the ten miles whirl. The Packard, with John Clancy at the wheel, took the lead in the first mile, with G. W. Morgan in Cudahy's Welch following, and the "Bluebird," driven by Karl Schnarr, last. In the second mile, the Bird chirped as it flew past Morgan in front of the packed grandstand, and took second place, holding it until the fourth mile. Then, when Schnarr opened up the throttle and the Bird began to sing louder and flap its wings with more vigor, it darted into first position, leaving Morgan at the tail end of the line. Soon the latter pressed his Welch past Clancy into second place, however, and the cars finished the race in that order, Schnarr winning by a fair margin in 11:22 4-5. At no time during the sprint were the cars more than 100 yards apart.

Mile after mile was reeled off at a 60-mile-an-hour rate in the 50 miles, free-for-all, an event that was captured by Robert Burman in a 40 h. p. Buick, in 59:59. The cars spun around in a heavy cloud of dust and all but one of the ten contestants, a Buick, driven by Glen Breed, had trouble of some sort. One of the cars tore off a good-sized piece of fence while skidding a trifle on a turn, but kept on its way. Dr. C. H. Carson was second, with a 40 h. p. Locomobile, with R. H. Collins's Buick third.

A novelty was introduced in the form of a half-mile obstacle race, open to electrics driven by women. Six contestants faced the starter, and the race soon became a real comedy affair. Two of the drivers did not heed the instructions to stop at the half-mile post and await further advice about taking the obstacles, but kept right on, with the result that they tried to pass through the narrow maze of barrels simultaneously, much to the delight of the shouting crowd. The cars were then re-started and the ladies at once encountered further difficulties before they finished the course. Mrs. Joseph H. Wittman, in a Pope-Waverly, won the first prize, which was "the dearest, sweetest hat," valued at $150. She negotiated the tantalizing labyrinth without touching any of the barrels in 3:08 1-2, disproving the assertion that women cannot aim straight. The best time of the event was made by Mrs. F. E. Gloyd, with a Woods, in 3:08, but she tipped over a barrel, which spoiled her chances for the fascinating trophy.

Gus Seyfried, in a White Steamer surprised the people by winning the 10 miles race for the Board of Trade cup, in 10:47, the popular opinion having been that one of the higher-powered cars would bag the trophy, as in the preliminary heat the White only got second place. Seyfried, however, managed to show the field his dust in the final—the nearest to approach him being A. O. Brooks's Stoddard-Dayton, which scored second, while Burman took third with his Buick. There were nine competitors in this event, and the heats were warmly contested.

Guy Morgan drove a lone race with Cudahy's Welch, in a five miles stock car event, the only other contender being George McEntire, who dropped out with his Chalmers-Detroit, in the first mile.

Charles Levendoski, guiding a Maxwell, won a five miles event for stock cars costing $2,000 and under, in 7:24, over R. C. Greenlease (Cadillac), who was second. Robert Burman, in an 18 h. p. Knox, distanced George McEntire (Chalmers), for third place.

Two heats of a five miles free-for-all were run, each of which gave first place to White cars, driven by Ralph Baker and Gus Seyfried. A Buick, driven by Burman, and a Pilain, handled by V. C. Snyder, also qualified, but darkness fell so quickly that the final heat could not be run.

Governors to Discuss Uniform Laws.

Lobsters, automobiles and trees are to engage the governors of all the New England states in a conference which is to be held in Boston right after the election. A whole day has been set aside for discussing the possibilities of uniform automoble laws for Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut, together with a consideration of plans for improved highways and the establishment of interstate trunk lines or thoroughfares running along logically and carefully prepared routes from one large New England center to another. All the meetings will be open to the public, while the participants will consist of the governors themselves together with their lieutenants, the attorneys general, the presidents of the New England senates and the speakers of the house of representatives, the congressmen and United States senators of the states, and various invited citizens.

TWENTY ENTRIES FOR SAVANNAH

America, Italy, France and Germany to Compete in Grand Prize—Try-out to be Held on the Motor Parkway.

Following almost uncomfortably close upon the heels of the Vanderbilt Cup contest for its own advantage, the inauguration by the Automobile Club of America of the Grand Prize race which it is planned to develop into the great international event of the future gives promise of as good an assemblage of racing material as ever has been seen in this country. Although entries do not close until Nov. 1, the extended date, 20 cars have already been enrolled, of which five constitute the American representation. Three other countries also are represented, in the teams of Italy, France and Germany, each of which at present numbers five cars.

Grand preparations are being made by the A. C. A. and its local ally, the Savannah Automobile Club for the Thanksgiving Day event and its curtain raiser—the International Light Car race—which is scheduled for November 25th, the day previous. Aside from the elaborate arrangements which are being made for the entertainment of the expected hosts of visitors, the highways comprising the 25 miles Chatham County circuit are being graded and banked, and in one instance an entirely new road is being constructed for the "circuit within a circuit" for the small car race, which is to occur on November 25—the day preceeding the Grand Prize itself.

A number of the foreign drivers who are to participate in the race are either on their way to this country, or will start within a few days. Prior to their adjournment to Georgia, it is planned to give them an opportunity to test their machines on the Long Island Motor Parkway. Saturday, October 31, has been set as a tentative date for this try-out, which doubtless will serve as a good advertisement of the race itself. The list of entries for the Grand Prize, as at present constituted, is as follows:

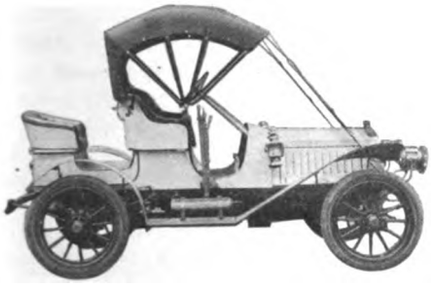
Locomotive	L. T. Bergdoll
Matheson	Louis Chevrolet
Acme	Cyrus Patchke
Lozier	Harry Michenor
B. L. M.	Thomas Williams
Fiat	Louis Wagner
Fiat	Felice Nazzarro
Fiat	Ralph De Palma
Itala	Henri Fournier
Itala	Alexandre Cagno
Benz	Victor Hemery
Benz	Reve Hanriot
Benz	Fritz Erle
Mercedes	Poegge
Mercedes	Salzer
Bayard Clement	Hautvast
Bayard Clement	Rigal
De Dietrich	Duray
Renault	Francois Szisz
Renault	Lewis Strang

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THE MITCHELL MODELS FOR 1909

Additional Particulars of the Offerings for the Coming Season—Some of the Noteworthy Improvements.

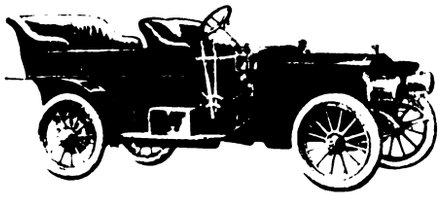
Early announcement was made of the features which are to characterize the 1909 product of the Mitchell Motor Car Co., but at that time no illustrations of the finished cars nor even their complete specifications were available. Present activities at the Racine, Wis., factory of the company, however, where the cars are rapidly passing through the various stages of production, have made possible the publication of these fuller particulars. As already told in these



MITCHELL ROADSTER

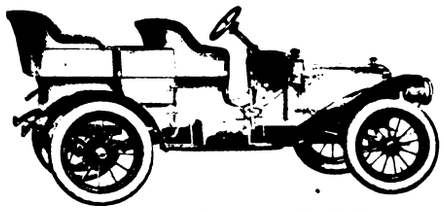
columns, the line for the coming season is to consist essentially of four vehicles, that is to say, two touring cars, seating five and seven passengers, respectively, and two lighter models, one a runabout, and the other a roadster. Of these the seven passenger touring car and the runabout are already familiar, though they have undergone some slight modification since first introduced. The "star" member of the group is the Model "K" touring car, which is considered an unusually attractive offering of "the-most-for-the-money" order.

As already described, the motor of this machine, which is rated at 28-30 horsepower, is of 4¼ by 4½ inches, cylinder dimensions, with a combination arrangement of the valves, consisting of overhead inlet and side exhaust, the latter comprising di-



MODEL "L" TOURING CAR

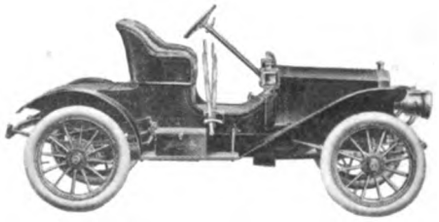
rect acting gearing, while the former employs the walking beam and long tappet rod arrangement, which is so much in use at the present time. Both sets of valves are actuated from the same side of the motor, and by a single cam shaft. The two-to-one gears are fully enclosed in a housing formed integrally with the crank case, but closed with a cover which is readily removable. The magneto, which is a regular feature of the equipment, together with the carburetter, is carried on the cam shaft side of the motor, making the principle moving parts and accessories easily accessible without necessitating the lifting of more than one side of the bonnet when making ordinary running adjustments. The crank case supports are cast integrally with the upper sec-



MODEL "K" TOURING CAR

tion of the case, leaving the lower section free for removal without disturbing the motor in the car. The radiator fan is carried well to the front of the forward cylinder, and is mounted on a bracket rising directly from the crank case, and is thus made entirely independent of any possible wearing among the cylinders.

As will be seen from the accompanying illustration, the change speed gearing employed, which is of the selective pattern, is mounted entirely on roller bearings of the Hyatt type. There are two sliding sets, that affording the high gear, developing the direct drive by means of a massive jaw clutch. The lay shaft is arranged to run at all times, though entirely disengaged while the high gear is in use, and the reverse is obtained by means of an idler which



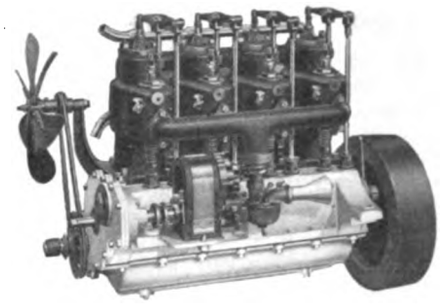
MODEL "J" RUNABOUT

also is in constant motion, though disengaged except when used for driving the car. The provision of a double set of universal joints—one between the master clutch and the gearset and the other at the forward end of the propeller shaft, ensures long life for the entire group, since the shafts and their mountings are relieved of any possible disaligning strains due to the racking of the frame out of its proper relationship.

The propeller shaft is equipped with double universal joints, and the live rear axle is held from rotation by means of the conventional single torque rod, suitably suspended at its forward end in the waist of the chassis. Like the entire mechanism of this and the other models, the rear axle is of original design and construction throughout.

The overall chassis specifications are: Wheelbase, 10¾ inches; wheels 32 inches diameter, shod with 4-inch tires. An unusual option is offered in the matter of body mounting in that the chassis may be had with either the detachable tonneau, surrey, runabout deck or single rumble arrangements, though, of course, extra charges are made where the purchaser desires more than one style of body.

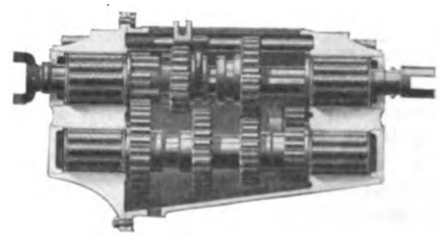
These particulars apply to the model "L" touring car: Engine dimensions, 4¼ by 5 inches, rating 35-40 horse-power; change gear selective; ignition, magneto; wheel base, 117 inches; wheels, 34 inches, shod with 4-inch tires. What are designated as extras are the use of the rear springs of the platform type, steel running boards, a full floating axle, ebonite-finished steering wheel, instead of merely a stained wood finish; improved upholstering. These characteristics, together with a distinguishing



MITCHELL MOTOR

mark in the improved design of the radiator, which also applies to the model previously mentioned, go to make up the more significant changes in this model as compared with the corresponding one of the current season.

Unlike the other two models described, Model "J," the runabout, is not equipped with magneto, though it is specified by the makers that the motor has been so designed that a magneto can be added to the regular jump spark equipment, or substituted for it, if required by the purchaser. The cylinder dimension of this motor are 4 by 4, and its output is listed at 20 horsepower. The selective method of gear-change is here employed, as is the shaft drive, as well as the other typical features of the line. Al-



CHANGE SPEED GEARING

though practically a continuation of the present runabout model, sundry minor improvements have been made in its construction, as in the arrangement of the spring suspension, for example, all of which go to improve its riding and wearing qualities. The wheel base is 92 inches, and the wheels are 32 inches in diameter, shod with 3½-inch tires.

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LOCOMOBILE MODELS FOR 1909

Entirely New Car to be Included in Forthcoming Product—Marked by Radical Departure in Two Features.

Among the announcements of new products which have appeared during the week, perhaps none is calculated to create greater remark than that of the Locomobile Co., Bridgeport, Conn., in which is forecasted in addition to the 40 horsepower model which is the most powerful machine made in stock form under that name, an entirely new car of 30 horsepower rating and bearing what is, in this instance, a radical departure from former practice in the use of the shaft drive and floating rear axle construction. The new Model "30," as it is to be known, is in other respects, practically uniform with both of the types in present use, and forms an intermediate type between the "40" and the little "20," which is so well known.

The largest car of the trio has the standard type of four-cylinder motor, the dimensions of which are 5 by 6 inches, and which is said to develop no less than 60 horsepower "on the bench." It has 123-inch wheel base and 36-inch wheel shod with 4 and 5-inch tires, front and rear. Landaulet and limousine body equipments also are provided for this chassis, in addition to the regular touring equipment, while it is further produced in the form of a runabout model, which was brought out during the latter part of the present season. Practically the same arrangement also is obtainable in the form of a "toy" tonneau.

The new model has a "square" motor, of 4½-inch cylinder dimensions and develops no less than 38 horsepower under test conditions. The machine as a whole displays such of the Locomobile characteristics as low tension, make and break ignition, bronze engine base and gearbox, four-speed, selective change gear, ball bearing mountings wherever required, and is made with special alloy steels, and heat-treated drop forgings produced at the Bridgeport shops. Its wheel base is 120 inches, its overall length 15 feet, and its wheels 34 inches diameter, shod with 4 and 4½-inch tires, front and rear. Despite its length, it is designed with sufficient steering lock to permit a complete turn within a 38-foot circle, which makes it possible to swing the vehicle in any ordinary street. Runabout variations are presented also in the two and four seated—"toy" tonneau—types, the inclined steering column, low driving position and other runabout characteristics being secured in a peculiarly effective manner.

Particular interest centers about the rear axle construction, which is the distinctly novel feature of the machine, though in no way a radical departure from the precedents of accepted practice. The parallelism of the front and rear axles is preserved by means of distance rods, corresponding in form to those employed on the chain driven models. These rods carry the brakes, and their rear ends are swiveled to the axle tubes. This arrangement serves the three-fold purpose of removing the bending stresses from the struts when the springs are depressed, removing the braking stresses from the rear axle, and relieving the springs from disastrous torque and driving strains. The latter purpose also is served by swiveling the spring seats about the axle tubes. The tubes themselves, also are relieved from all torsional stresses.

The axle proper is trussed by means of tension rods which extend from the differential housing to the ends of the tubes, while particular structural advantage is claimed from the fact that no brazing is used in the process of assemblage—the tubes and housing being secured by means of pressed fits and rivets. The torque stresses of the group are resisted by the usual single bar, which is affixed to the differential housing at its rear end, while in front it is suspended from a cross member of the frame by means of cushioning springs. The layout is such that practically a straight line drive is obtained when the chassis is carrying its normal load. The propeller shaft is equipped with a universal joint at either end as well as a slip joint at the rear. The driving portions of the rear axle are of the full floating type with what is usually known as the "hub cap" drive.

Caution in Refilling Fuel Tanks.

When refilling fuel tanks from which the carburetter feed is taken by means of the compression system, great care should be taken to provide against the danger of igniting the fumes which are liberated as the pressure is let off. In every case the exhaust gas or air which has been imprisoned in the tank will be charged with a certain amount of fuel vapor, and in some cases it may contain sufficient air to form an explosive mixture. In any case it is liable to become so soon after being liberated. On this account, open flame lights, matches, even the supposedly innocent tail light, must be scrupulously extinguished as a necessary precaution.

Tensioning Springs of Automatic Valves.

No such delicate adjustment is required in the tensioning of the retaining springs employed with the valves of the mechanical type as is necessary where the action is entirely automatic. At the same time either excessively high or low spring tension tends to a certain extent to interfere with the proper action of the part. Thus too strong a spring is apt to shove the valve into its seat with such force as to destroy its accuracy, if not actually cracking the valve head by the severe impact. Insufficient tension, on the contrary, makes the valve sluggish in closing, and is apt to have an effect upon the action of the motor accordingly.

INNOVATIONS IN NAPIER PRODUCT

Edge's Announcements Include a Two and a Four Cylinder Model—Characteristics of the Twin Motor.

One of the most significant and at the same time interesting innovations of the season in British motoring circles is embodied in the new product of Messrs. S. F. Edge, Ltd., who have announced for the coming year three new members of the Napier line. One of these—a 30 horsepower, six-cylinder car, is a continuation of the former policy of the company in the production of sextuple-engined cars. The other two are to be machines of 15 and 10 horsepower, respectively, and equipped with four and two-cylinder motors. In addition to these machines, the six-cylinder cars already introduced will be continued in the several sizes and with but slight modification.

The two, three and six-cylinder models, which are new, possess a common feature in their engine dimensions, which are 3¼ by 5 inches, bore and stroke. The specifications of the twin motor, just announced, show it to possess several features new to this make of car, such as completely enclosed valve gear, unit mounting for the power plant, and also magneto ignition, without the jump spark duplication. The cylinders are cast in pairs, the units being common to the three models, the design of the motors being uniform in other respects except for the number of cylinders employed. The full importance of the announcement is not appreciated until it is remembered that it is only a couple of years since Edge renounced all but four-cylinder models with great blare of trumpets, since which time he has devoted himself exclusively to the production of high-priced cars of that stamp. The new small cars are intended for cab as well as light car service, while the unit power plant also is designed to be utilized in the equipment of motor boats.

Improper Placing of Non-Skid Bands.

It has frequently been pointed out that it is improper to use non-skid bands on opposite front and rear wheels, only, or on only one of the rear wheels for the reason that this provision involves an undue amount of differential action, thereby tending to overwork that device. A further and perhaps more important argument against this practice is on the ground that the non-slipping of one of the wheels, which is thus assured, by no means prevents rthe other from sliding. The result is that on slippery roads the wheel carrying the non-skid does practically all of the work of propulsion, while the other merely slips in practical idleness and at a relatively high rate of speed.

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REFINEMENTS IN LIVE REAR AXLE

Radical Treatment of Interior Parts in Timken Construction—Provisions for Accessibility and Adjustment.

Increased use of the live axle method of transmission has given rise to a number of significant improvements in that critical device. Further details concerning the new "one piece" pressed steel tubular axle, which the Timken Roller Bearing Axle Co., of Canton, O., is producing for cars weighing under 3,000 pounds and not exceeding 45 horsepower, and which has already been reviewed in these columns, disclose a number of features in design and construction which are calculated to improve its endurance and increase its serviceability. The boldness of method employed in the design of the axle and differential housing itself, where the entire load bearing and gear encasing member is a single unit, is matched by the way in which the disposition of the



GEAR CARRYING UNIT VIEWED FROM LEFT

interior parts is effected, and provision made for retaining the integrity of their relations.

As will be seen by the accompanying illustration, the differential housing is of spherical form, having but one bolted-on plate, the latter being on the forward side where the rear end of the propeller shaft is admitted. The sides taper into tubular extensions out to the hubs of the wheels, forming the outer axle, the thickness of the metal increasing from the center to the axle ends. The blending of globular and tubular forms results in doing away with the angles and joints which are common to many types of built-up axles and which are thought to increase the strains and shocks at various points by leverage, as well as providing points of structural weakness. Spring seat bases are swiveled in generous loose mountings on the axle, to lessen shocks from the latter being communicated to the body. The strut rod braces, when required, are placed on separate brackets, immediately underneath the frame, to give a straight thrust from axle to the car sides. The bosses are extra large and are fitted with bushings having hardened steel bearing surfaces.

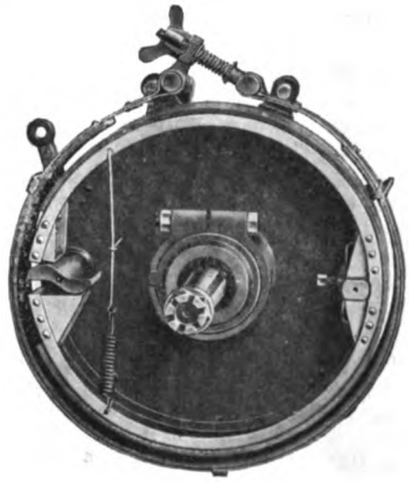
In addition to the improvement in the form and strength of the axle proper, the parts comprising the shaft pinion and differential mounting have had radical treatment. The differential gear is contained in a carrier, which, as shown in the accompanying illustrations, is one unit, comprising the plate which closes the housing, the bearing



FRONT VIEW OF REAR AXLE, SHOWING GEAR CARRIER, SPRING BASES AND BRAKES

for the pinion end of the power shaft and the two bearings for the gear itself. The outer face of the differential carrier has a vertical bearing set in its cheek for the cross-end of the Y shaped torque bar, the latter being permitted a hinged relation with the rear axle. A feature which reveals to what degree of refinement the construction has been carried consists of the provision of worm screws by which the bearings of the differential gear may be adjusted from the outside without the removal of anything more than the cotter pins in the screw heads. The whole gear carrier with the gear itself may be removed from the housing without taking down the axle or disturbing brake equipment, springs, hubs or bearings. The live axle is furnished in both clutch and fixed type hubs.

Both internal and external brakes are supplied in a form which makes efficiency



SIDE VIEW OF BRAKE

certain. They are approximately 14 inches in diameter and 2½ inches in width. The levers for the internal brakes are placed within the limits marked by the sides of the chassis to prevent complication or interference with the leads to the external brake levers. The band of the internal brake is of pressed steel and fills the entire inside diameter of the drum, a double acting cam at the anchorage point spreading it with even force all around against the friction surface of the drum. A strong spring release tension makes it float clear of the friction surface when not in use. The brake box and friction surfaces are kept dry and free from lubrication by double felt washers between the shaft and the axle casing.

The wrap of the contracting band on the external brake is designed to be equally absolute whether the direction be forward or back. The result is obtained by means of double anchor and fulcrum points, which change with the direction in which the wheel rotates instead of being positively



GEAR CARRYING UNIT VIEWED FROM RIGHT

fixed. The brake band floats with the drum for a short distance around to the anchor points, which serve as fulcrums for pulling tight when pressure is applied.

Adjustment of the Air Brake Linkage.

While the average driver is enough of a mechanic to so adjust his brakes that the lever or pedal will not reach the limit of its travel before the bands are fully applied, it does not always occur to him to observe whether all of the brake linkage is clear of the frame and other mechanism at that time. Even a very slight amount of interference in an out of the way spot may cause the brakes to slip.

To Avoid Leaks in Cooling System.

To avoid leaks in the cooling system it is absolutely necessary that the water overflow and steam outlets be kept clear at all times. The constant presence of dust and more or less oil tends to clog them, and when this occurs the increased pressure in the system which always follows the warming up of the engine, causes the contents to seek outlet at the weakest point.

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FUEL CONSUMPTION AS AN INDEX

Excess Rate Denotes the Existence of Trouble—Some of the Most Fruitful Causes of Waste.

It is important that the owner should keep close watch over the fuel consumption of his car, checking it up by the mileage totals of the speedometer, because it not only enables him to observe the rate of expenditure for operating the machine but also furnishes a valuable indication of running conditions in the machine. It is a simple matter to arrange a systematic log wherein the rate of consumption per car mile is readily calculated. This being done, any abrupt increase in fuel cost, must be taken as an indication of something gone wrong, unless of course, it is caused by unfavorable running conditions—in which case the increase will be only temporary.

Four possible causes may contribute to a high rate of fuel expenditure. Thus unfavorable highway conditions in the matter of mud, an unusual amount of hill climbing or the haulage of a heavier load than is customary must be sought for as soon as an unforeseen rise develops Failing either of these, the increase possibly may be chargeable to a faulty adjustment of the carburetter, whereby an over-rich mixture is being used constantly. If this happens to be the case the foulness of the exhaust as well as the sluggish action of the motor furnishes supplementary clues.

The other sources of possible excess may not be so apparent. A fruitful cause of waste, of course, is leakage in the feed piping to the carburetter, as well as a poor float adjustment which may cause the mixing chamber to overflow, even when the motor is in action. In some instances though this may not be sufficient to cause an appreciable amount of drip, sufficient gasolene will be carried away and evaporated in the bottom of the mixing chamber and in the pan directly under it, to cause a very noticeable loss of fuel. Indeed, one authority states that in the case of a machine standing over night on the floor as much as a quart of fuel may be evaporated without any noticeable drip occuring. This difficulty must be eliminated at once when discovered, as it contributes very largely to the fire risk, in addition to increasing the gross consumption.

In the event of any stiffness in the transmission of the vehicle, or even in the motor itself, the resulting increase in load will, to a certain extent, manifest itself in a rise in the rate of fuel consumption per car mile. Thus a dragging brake band, a stiff crank shaft bearing, even a disaligned steering gear which causes the front wheels to run out of line, may be the cause of an indication sufficiently noticeable to flag the difficulty. The rate of consumption thus may be used as an accurate indication of running efficiency when considered on a mileage basis, even though it cannot be construed into an absolute guide to the actual source of trouble where such exists.

Spark Plugs that are Soot Proof.

In the excitement of a big race, when victory hovers uncertainly over the contestants, the driver and mechanic who have no worries about ignition trouble or missing cylinders have much to be thankful for, as the service required in racing conditions is particularly severe. The high speed of the engine necessitates a great use of lubricating oil, no small part of which deposits as carbon in the cylinders. As showing how heavily this deposit occurs, the ac-



companying illustration of the Soot Proof plugs taken from the winning car in the Jericho sweepstakes right after the race, is ample evidence. The constant and heavy lubrication of the motor during the race resulted in the charring of the surplus oil and the formation of a thick coating of black soot in the explosion chamber. While lubricating oil as poured into the tank has insulating qualities rather than conductivity, yet when it has burned to a carbon residue the latter is only too ready to short circuit the ignition current. In fact many cases of ignition trouble are directly attributable to the spark plugs failing to give the spark at their points because the high tension current has been "shorted" from the central pole to the return of the outer shell by means of a soot coating on the insulation. The appearance of the plugs in the picture, however, makes it plain that their construction has obviated this possibility, as they gave uninterrupted sparking throughout the race, in spite of their heavy carbon deposit.

Against Overstraining the Nuts.

When bolting separate parts together it is advisable to bring as little strain upon the nut as possible. If the bolt sticks in the hole it should be driven down by hammering the head, and if the parts do not come together easily it is better to clamp them temporarily than to overwork the nut. The danger lies in the tendancy to stripping the thread.

EARMARKS OF REFURBISHED CARS

One Sure Way to Recognize the Renovated Vehicle—Parts that the Painter is Apt to Neglect.

Ordinarily a sure way of distinguishing a used car which has been refurbished up to look as good as new, from one which has never been used at all, is to examine the paint on the runing gear and the underneath parts of the chassis. It is observable that however successful the average automobile painter may be in his treatment of the body portion of the "job," when it comes to the chassis he is apt to fall below his best standard. The reason for this is not far to seek. "The carriage painter"—from whose ranks most automobile painters are drawn—"is practically at home with any work to be applied to the body of the automobile, because, primarily, he has been specially trained along this line," says a well-known exponent of the craft. "But coming to the chassis, and particularly to the under parts of the gearing etc., the work takes on a different aspect.

"These parts, with most machines, are very much neglected during service, so that when the car visits the paint shop it is more often than not in a sorry condition. The precisely well painted or well touched-up and varnished job is that which has thorough work applied to it throughout—that is uniformly well taken care of over all its parts, in fact.

"These under parts, then, should be thoroughly cleaned, using some form of petroleum substances to loosen up the grease and caked accumulations, finishing off with a wash of turpentine, the parts then being wiped dry. Then coat up with a black flat color, with a binder of raw linseed oil in it, finishing in proper time with a coat of black japan, or black color and varnish."

Caution in Rebabbiting Bearings.

A recent accident in a Michigan garage points to the need of special caution when rebabbiting bearings under the extemporized conditions which prevail in the average establishment of that sort. A mechanic was pouring the metal into the bearings of a motor car when in some way the fluid came in contact with a small quantity of water. In the resulting explosion painful if not serious injuries were caused.

Importance of Keeping Hub Caps Clean.

That old admonition about the importance of keeping the hub caps, as well as the wheel and knuckle bearings, clean and free from verdigris such as may accumulate in the brass attachments loses none of its importance with frequent repetition. Because the bearings involved usually require little or no attention there is a great tendency to neglect them altogether.

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WORLD'S HIGHWAY EXPERTS MEET

International Roads Congress at Paris Deals with the Automobile Problem—What the Ideal Road Must be.

No neglect of the motor can be charged against the International Roads Congress which began its sessions in Paris on the 12th inst., and which is attended by delegates not only from the United States but from practically all the European countries and from the Orient, as well. As a matter of fact the motor car may be credited with having brought about the congress, the main reason for its convocation being given as a desire to solve the problem that automobile traffic presents. Fortunately there is no hostile spirit to the automobile manifested in the gathering, the delegates apparently seeking to learn the best ways of combating the evils which it is accused of creating by its operation on public highways.

The congress was opened by M. Barthou, the minister of public works, who in a felicitous speech welcomed the delegates of the many nations represented. Graceful responses were given by the presidents of the delegations from the United States, Great Britain, Belgium, Germany and Russia, the American sentiments being voiced by L. W. Page, from Washington, director of the United States Office of Public Roads. In the afternoon the serious business of the congress commenced at the Tuileries.

Because of their more or less limited knowledge of French, the English speaking delegates soon organized themselves into an Anglo-American conference, holding meetings in advance of and separate from the general conferences. They were careful to make it clear, however, that this action did not mean any divergence from the regular sessions of the congress but was solely for the purpose of getting a better understanding of the progress of the congress, the proceedings of which were translated into English and discussed at the Anglo-American meetings. Conversely the speeches and recommendations of the English speaking delegates at their conferences were translated into French for the benefit of the whole congress, and the tabulated information and the specifications which they employed were converted into metric as well as British units.

The new conditions created by the automobile are recognized as the governing influence to be considered in future road building, although there is a wide diversity of opinion as to how they are best to be met. Not only pleasure cars of high speed but commercial vehicles for heavy transport enter into the considerations for the future.

The ideas of the members of the congress as to what shall constitute the ideal road of the future approximately agree—namely, a road with a well drained solid foundation, built of some hard aggregate bound together by tough, elastic binder, waterproof and free from dust or mud, hard enough for automobiles, yet soft enough to be adapted to horses' feet.

Whatever the material from which the road is built there is a general agreement upon the following points: Main highways must in the future, wherever possible, be airlines between important centres, with branch roads connecting up to the main lines for local traffic.

There should be no curves on the main roads of smaller radii than 300 feet in the open country and less than 150 feet in the hills. Reverse curves should be avoided, also steep grades with curves, and level railway crossings, and the outer edge of curves should be raised. Opinions as to width vary greatly, but the average is a minimum of about thirty feet.

In a paper on the subject, Col. Bromwell, superintendent of Public Buildings and Grounds at Washington, points out that if park roads cannot be modified to meet the new conditions they will rapidly deteriorate and become useless. Col. Bromwell's idea is that park roads should be so constructed as to meet the somewhat contradictory requirements of being smooth and elastic in surface for horses, and hard in surface, and not too slippery, in order to be suitable for the motor traffic. The road of the future, he thought, should be composed of some tough elastic material, bound together by another material possessing similar qualities. Such roads would cost more originally, but the maintenance would be less.

To obtain an ideal road Col. Bromwell suggested the interposing between the base course of the macadam and the top course of a layer of asphaltic or tar compound, carried for convenience in a sand base. If the top course was then rolled and compacted the compound would be forced up into the interstices of the upper course, thus thoroughly binding the stones together and forming a top course of asphaltic or tar concrete. Just enough top dressing should be applied to fill up the larger interstices of the top course, and this top dressing should contain little or no dust or very fine ma the surface of roads already built with material.

L. W. Page, director of the United States Office of Public Roads, submitted a paper in which he contended that the main factor of injury is the great tractive force, or sheer, exerted by the driving wheels of motor cars. He admitted that he can offer no satisfactory solution of the problem of road deterioration by automobiles. However, he thinks the question could be met by following one of two general methods; first, by constructing roads in such a manner and of such materials as to reduce to a minimum the formation of dust, and, second, to treat the surface of roads already built with materials that will give the same result.

MUST KEEP THEIR ROADS IN ORDER

Lancaster Automobile Club Warns Pennsylvania's Negligent Officials—Further Neglect to Cause Prosecutions.

Upon opening their mail, the supervisors and constables of the small towns in Lancaster county, Pennsylvania, may prepare themselves for a jolt. Modern business system magistrates having taught the members of the Lancaster Automobile Club the possibilities of the mail order plan in speed fine commerce, the club has decided to adopt similar tactics in dealing with the people responsible for the condition of the roads. Rural officials who have heretofore regarded their jobs as positions of honor and emolument, without serious responsibility, are to find that the club is right after them with the State law, which places upon them certain obligations concerning the care of roads.

For the opening gun in its letter campaign, the club has prepared a communication, the main text of which is as follows:

"In any township in Lancaster county in which during the month of October the supervisors do not remove and take away the loose stones they will be prosecuted according to the terms of the act of 1901. Inspectors will be sent over the roads on and after November 2 with instructions to report every case of default; and in all such cases actions will be instituted for the recovery of the fine or penalty.

"Supervisors will be expected to erect at all intersections of public roads, handboards legibly inscribed as provided by the act of 1836. On or after October 20th, any supervisors do not remove and take away will be given ten days or more notice; and on or after November 2, suits will be brought to recover the penalty for neglect of duty.

"At the November court of quarter sessions any constable who fails to report any neglect of the above duties by any supervisors or who reports sign boards erected when they are not erected, will have his return challenged and excepted to; objections will be filed against the allowance to him, of any costs or mileage, and due measures will be taken against him for a false return and neglect of duty."

Railroad Man Projects Automobile Line.

Having no street car service, Huntington, Ind., is inclining a favorable ear to the proposition of an automobile transit system for which J. C. Curtis, general manager of the C. B. & Q. Railroad, is asking a franchise from the council. He says that with Chicago capitalists he stands ready to operate four large machines, and that if his company can get the franchise it asks for, it will pay for all improvements and repairs of the pavements on which it runs.

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MUNICIPAL AUTOMOBILE EXPENSES

What Maintenance of Cars Costs the City of New York—Engineer Reed Furnishes Some Figures.

That the City of New York is spending an average of $250 a month in the maintenance of each of its motor cars, or about what it would cost as many private owners to maintain cars for their own personal use, was the statement of James W. Reed, an engineer of the Finance Department, who brought up the subject in connection with the Budget Exhibition, which is being held in New York. For some little time Reed has interested himself in the problem of the ownership and handling of the city's cars, and as a result of a very thorough investigation of their use and abuse, he is probably better qualified to give an opinion on the legitimacy of their service than anyone else who is connected with the municipal government.

"That means," he continued, referring to the figures quoted, "$25,000 a month, or $300,000 a year for automobile maintenance. There is a big depreciation, for the average life of these cars is only about two years."

After ennumerating various city departments which have cars and which use them legitimately, he explained that one motor truck in the Board of Education had paid for itself in a year.

"Who buys these automobiles?" he exclaimed. "They are ordered purchased for the most part by the Board of Aldermen without public letting. The reason that there has been, except in three or four instances, no public letting, is that it is particularly hard to draw specifications so as to shut out the bad automobiles. We have been loaded up with some thirty-five kinds of automobiles, of which a great number are the greatest lot of junk imaginable.

"It is true that there are a great many improper uses to which these cars are put, but not necessarily by the city officials themselves. The machines are often used to bring the department head downtown in the morning and to take him and his secretary out to luncheon. Other persons outside have no hesitancy in asking the head of a department to lend his departmental machine. Its use is asked for all sorts of purposes, even for the personal use of the borrowers.

"I have heard of one city car which never turned a wheel all winter in the city service. It was used by a banker, who ought to have been ashamed of himself for asking for it.

"I believe that much of the service to which these automobiles is put is 'joy riding.' But a very small percentage of it is done by city officials, and the city is not being mulct in the purchase of the cars."

In substantiation of the speaker's estimate of the present cost of maintaining the city's cars, figures were shown upon the wall among various other exhibits of a similar nature, giving the cost of operating the cars, which were used by the city officials during the year 1907. These gave a total for the year of $88,433, and revealed the fact that whereas the Board of Assessors had required but $116 for the entire year, the Borough President of Brooklyn, with the several machines under his care, had required $19,433, these being the two extremes of the list. The figures in detail appear below:

Borough Presidents.	
Manhattan	$7,982
Bronx	1,139
Brooklyn	19,433
Queens	2,396
Richmond	5,091
Departments.	
Finance	8,099
Bridges	2,393
Water	5,560
Parks	2,770
Corrections	2,128
Health	9,198
Police	7,633
Street Cleaning	8,166
Fire	4,853
Board of Education	982
Board of Assessors	116
Coroners	165
Sheriff of New York County	178
Total	$88,433

Frelinghuysen Incubating More Law.

Looking with critical eye on the results of his famous New Jersey automobile law, State Senator Frelinghuysen after due deliberation pronounces it good, although he plans an amendment to it which he thinks will help both motorists and farmers by providing the counties with money for giving the highways dustless surfaces. His proposed amendment, announced at a recent political meeting, will provide that 50 per cent. of the revenue derived from automobiles be divided among the counties for the purpose of putting Tarvia or other preparation on the roads. That the amendment is not born of any consuming desire to make things more pleasant for the automobilists Frelinghuysen hastened to make plain by stating that the dust causes immense damage to growing crops and that it was to help the farmers that he wishes the dust-laying applications. As to the plan to expend $10,000,000 for a shore road from Cape May to Atlantic Highlands, the senator is absolutely opposed, on the ground that the roads in rural districts should be improved first.

Few American Cars in Shanghai.

Although the first automobile to make its appearance in Shanghai was of American manufacture, the advantage has not been followed out and at present most of the cars in use are of foreign production. The pioneer vehicle was imported in 1902. Today there are 140 machines owned in the city although only five of them are the property of natives.

PARIS MAY LOSE ITS BIG SHOW

Future of the Salon de l'Automobile Said to be in Doubt—Indifferent Attitude of the French Trade.

"It is freely stated that all is not well with the Paris-Salon de l'Automobile," asserts a British motoring publication editorially, "and that so unsettled are its prospects that its abandonment is possible. Hitherto all space has been allotted before the end of August, and later applicants have had to be squeezed into odd corners or deal through other exhibitors. At the moment, it is said that not merely is plenty of space still unallotted and unapplied for, but extreme pressure is being brought to bear on even well known firms to compel them to take up space under an agreement signed in the early days of the exhibition, to show annually. And it is freely stated that those concerns whose presence is vital to the success of the affair have insisted upon obtaining their floor spaces free of rent. If true, and there is no reason to doubt the very explicit statements made, it is evident that the glory of the Paris show has departed, and that its struggle for a mere existance has begun.

"The French trade, treating and developing their show as a huge retail advertisement and mart, have discovered that that phase has passed, and, in the condition of financial exhaustion which prevails over a considerable section, participation under any other circumstances is not possible or advisable. The French trade cannot afford to spend tens of thousands of pounds on a peep-show for the good people of Paris, and, having come to that decision with a revulsion very characteristic of their country, now take the other extreme, and will not, if they can avoid it, hold a show at all."

Average Life of the Automobile.

With that impressive show of exactitude which the statistician is so fond of, it recently has been figured out that the average life of an automobile is 4.99 years. This interesting result is arrived at by computations based on the public automobile statistics of France, taken from the government registration records, and therefore differs in method of obtaining from estimates derived from purely empiric data. It is shown that in January, 1903, there were 12,984 recorded machines in France and that during the year 6,900 new French cars were sold and 350 cars imported. At the end of the year there were only 17,107 automobiles, however, against the 20,234 that there would have been had all of them remained in service. By taking similar comparisons for the following years, the estimate of 4.99 years as the average period of usefulness for an automobile was evolved, a period that will probably lengthen as the industry advances.

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The Week's Patents.

893,738. Two-Cycle Motor. Gotthold L. Langer, Stockton, Cal., assignor to Joseph Geiger, Stockton, Cal. Filed Sept. 19, 1906. Serial No. 335,253.

1. In a motor, a hollow base, a pair of spaced cylinders mounted upon said base and connected at one end therewith, the upper portion of each cylinder being smaller in diameter than the lower portion, said upper portion of each cylinder constituting an explosion chamber, the said lower portion adapted to serve as a pump, passages in the walls of said upper portions, ports through the walls of the cylinders at the ends of said passages whereby communication is established between the enlarged portion of one cylinder and the smaller portion of the other cylinder, the port at the upper end of each passage constituting an inlet for the explosion chamber, an oil intake port and an air intake port for each cylinder, said ports being spaced apart and leading into the aforesaid passages, an exhaust port in the wall of each cylinder, closures at the outer ends of said cylinders and provided with hollow re-entrant heads depending within the cylinders and spaced from their inner surfaces, transverse ports in said heads opposite the air intake ports of the cylinders, pistons operating within said cylinders and provided with guide members operating between said re-entrant heads and said cylinders, and spaced ports in said guide members adapted to be aligned with the explosion chamber inlet ports and the exhaust ports respectively, and enlarged portions carried by said pistons operating in the enlarged portions of the cylinders.

893,794. Flexible and Elastic Shaft Coupling. Leonce Girardot, Puteaux, France. Filed Nov. 20, 1905. Serial No. 288,284.

A flexible and elastic shaft coupling comprising in combination two plates adapted to be fixed respectively to the adjacent ends of the shafts to be coupled, there being two sets of teeth of triangular section made respectively integral with said plates at their circumference and meshing with each other without making contact, each of said teeth being recessed in its outer edge, springs arranged between the side faces of successive teeth, washers located between the ends of the springs and the said faces of the teeth, a movable ring on which are threaded all the springs and washers, said ring lying in the recesses in the teeth, there being spherical bosses formed respectively in the plates and a spherical headed screw screwed into one of the plates and adapted to connect both plates together though admitting their slight inclination one with regard to the other, substantially as described and for the purpose set forth.

893,832. Tire. Herman B. Baruch, New York, N. Y. Filed April 24, 1907. Serial No. 369,904.

1. A tire having an outer tube or shoe, an inner tube comprising a plurality of expansible tube-sections, and flexible parts within said shoe extending between said sections and being loose under normal conditions, said parts permitting said sections to expand to fill space adjacent thereto formerly occupied by a section which has collapsed, but precluding more than a predetermined amount of expansion of said sections, substantially as set forth.

893,858. Brake. Frederick C. Miller, Cincinnati, Ohio. Filed Jan. 28, 1907. Serial No. 354,545.

1. The combination of the stationary and rotary members, one of which is provided with an internal annular braking surface and the other of which carries a pair of intermeshing sectors constructed with eccentrically located and oppositely presented grooves, a split ring surrounded by the internal braking surface and having its extreme ends engaged with and confined by the grooves in the sectors, and means for operating the sectors.

893,867. Automobile. Eugene S. H. Pereyra, Brooklyn, N. Y. Filed Dec. 28, 1907. Serial No. 408,446.

1. In a convertible automobile, a detachable sub-structure, yieldingly connected to said automobile; which substructure may be attached by passing transverse cross rods through holes in the main frame of said automobile and fastening said rods to the frame by nuts substantially as described.

893,955. Spark Plug. Clarence T. Van Woert, New York, N. Y. Filed Aug. 1, 1907. Serial No. 386,639.

1. A spark plug adapted to be used in a substantially upright position, including a core of insulating material having a recess in its lower or inner end, an electrode extending through said core and terminating within said recess substantially flush with the innermost portion thereof, and a second electrode extending into said recess from below and terminating adjacent the end of the first-mentioned electrode to leave a spark gap therebetween, adjacent the innermost portion of the recess, whereby all oils or other liquids are automatically drained away from the spark gap by the walls of the recess and the second electrode, and whereby the first portion of the explosion sweeps said liquids from the recess.

894,014. Rubber Tread or Tire for Wheels. Edward B. Killen, London, England. Filed Oct. 27, 1906. Serial No. 340,867.

1. In a tread or tire, the combination of a floated unbroken boltless inwardly flanged binding circular rim provided with holes at suitable distances apart, a rubber tire having its outside trending circumference molded into studs adapted to fit through and to have their necks surrounded, supported and protected by the walls of the said holes and having its inside circumference molded with inverted dish-shaped recessed air spaces opposite the said studs, and washers adapted to fit and lie fixed in the said air spaces; said washers having screw threaded holes to take the ends of bolts passing through the felly and rim of the wheel proper, all substantially as and for the purpose specified.

894,052. Safety Device for Occupants of Vehicles. Richard Radtke, Suhl, Germany. Filed March 16, 1908. Serial No. 421,526.

A safety device for the occupants of vehicles comprising in combination a plurality of rubber straps forming a closed belt, held on the shoulders in an easily detachable manner by loops and back straps provided with a buckle, as well as of a breast band attached at one side and connected at the other side by means of hooks and chain in an easily detachable manner, two vertical helicai springs being arranged on the seat, to the upper eyes of which the rubber straps are attached by means of easily opened spring hooks so that the springs and the rubber straps exercise an elastic vertical pull on the body of the wearer when it is thrown upwards and forwards by the vehicle striking an obstacle, in such manner that the said wearer is pulled back to the seat.

894,055. Automobile. Cowan Rodgers, Knoxville, Tenn. Filed Dec. 2, 1907. Serial No. 404,773.

1. In an automobile, an extensible frame, and a body horizontally movably mounted upon said frame.

894,060. Motor Vehicle. Richard Ruemelin, Huntingdon, Pa. Filed July 1, 1907. Serial No. 381,608.

1. In a motor vehicle, the combination of a rigid under frame flexibly connected at the front with a horizontally pivoted front axle and its wheels, bearings at the rear portion of the under frame having readily separable portions, axle inclosing shells pivotally mounted in said bearings, rear axle sections rotatably mounted in said shells, driving mechanism therefor removably and resiliently supported on the under frame, and a motor and gearing incorporated with said mechanism and with the axle, said portions comprising a readily removable power equipment for the vehicle, substantially as set forth.

894,079. Tire Holder for Automobiles. Frederic S. Suthergreen, Osterville, Mass. Filed May 16, 1907. Serial No. 374,001.

1. In a tire supporting device, a rod supported for oscilation, tire supporting members connected therewith, a tire clamp, and

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means for connecting said tire clamp with a fixed supporting point.

894,084. Tire Tread Chain for Automobile Wheels, etc. James C. Thomas, Corsicana, Tex., assignor of one-half to Frederick W. Barth, Corsicana, Tex. Filed March 22, 1907. Serial No. 363,885.

1. A device of the class described comprising side rings, a flexible band having side seams in which the rings are incased, said side seams being provided at intervals with recesses or openings to expose the rings, and cross chains connected with the rings at the exposed portions thereof and extending across the outside of the band.

894,271. Folding Shield for Automobiles and Other Vehicles. Frank Jackson, Denver, Colo. Filed Aug. 28, 1907. Serial No. 390,468.

1. A folding shield for motor cars and the like, comprising upper and lower members having registering hinge plates at the corners of their adjoining edges and bolts and nuts for connecting and clamping the plates of each hinge in frictional engagement, said hinges permitting said shields to be folded to lie parallel; resilient buffers on said shields which engage when the shields lie parallel; hooks for holding said upper shield against the lower shield; a support adapted to be rigidly secured to the dash board of the car; hinge connections between said support and the lower shield; longitudinally adjustable brace rods, and clamps therefor, pivotally connected to the hinge plates of the lower shield and to the car for supporting said folded sections in either a vertical or a horizontal position; and brackets on the shield support upon which the end of the upper shield rests, when the folded members are in a horizontal position.

894,276. Vehicle Wheel. Harry M. Martin, Columbus, Ohio. Filed June 10, 1907. Serial No. 378,054.

1. The combination with a vehicle wheel having a pneumatic tire, of a supplemental rim, and a plurality of spaced saddles engaging the pneumatic tire and supporting said supplemental rim.

894,286. Air Intake Regulator for Carburetters. Frederick C. Reineking, New York, N. Y. Filed April 10, 1908. Serial No. 426,180.

In air intake regulators for carburetters, in combination a cylindrical air intake chamber, air ports in the sides of said chamber, one continuous spring inside of said chamber closing said air ports, said spring at all points being free to move back away from said air ports.

894,290. Vehicle Wheel Rim. Edwin C. Shaw, Akron, Ohio, assignor to B. F. Goodrich Company, Akron, Ohio, a Corporation of Ohio. Filed Feb. 20, 1907. Serial No. 358,459.

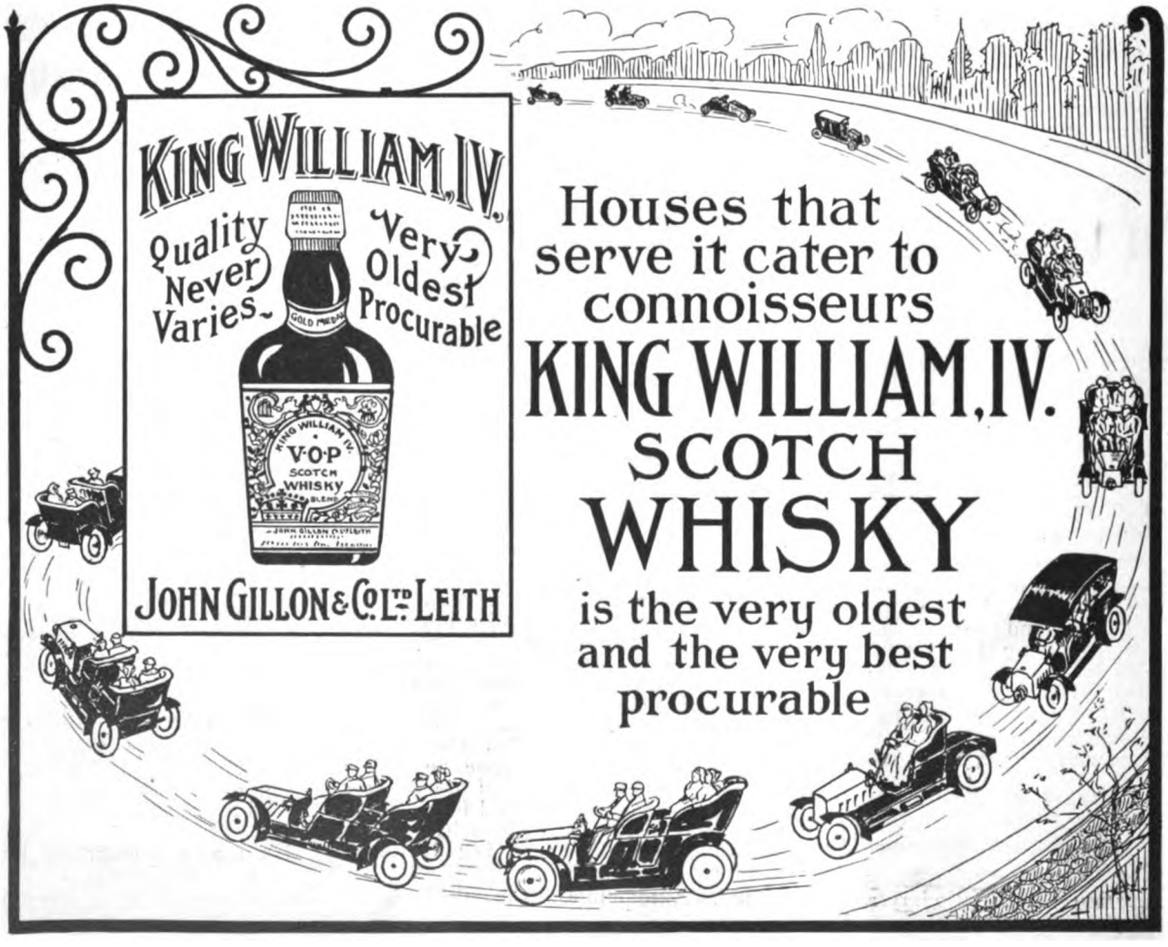
1. In a vehicle wheel rim the combination of a channel iron, a slot in said channel iron, a removable flange mounted upon a transversely split ring carrying lugs adapted to fit within said slot in normal tension resisting engagement with the end walls thereof, and a locking clamp adapted to engage said lugs and to hold them within said slot.

894,377. Tire Armor or Protector. Charles Filler, St. Johnsville, N. Y. Filed Nov. 20, 1907. Serial No. 403,056.

In combination with a vehicle wheel and a pneumatic tire arranged thereon, an armor, comprising a plurality of shoes, adapted to fit the felly and tire, of said wheel, and having their inner and opposite edges turned up, forming flanges or troughs; yieldable circular wires fitting in said troughs, or flanges, and yieldably connected at their ends by means of bolts, nuts and springs, said yieldable wires adapted to hold said shoes on said felly and tire; extensions or lugs, each provided with a vertical slot, stricken up or rigidly secured near the ends and on the outer face of said shoes; bolts passing through the slots of said extensions; nuts screwed on the threaded ends of said bolts; spiral springs, working between said extensions and said nuts, and straps having one end secured to the lug, formed on said shoes passing thence under the felly and tire of said wheel, with their opposite ends secured to the opposite lugs, said shoes provided with anti-skidding elevations stricken up or secured to the outer faces of said shoes, substantially as shown and described and for the purposes set forth.

894,426. Clutch. David E. Dolson and Elbert R. Pease, Charlotte, Mich. Filed Nov. 25, 1907. Serial No. 403,697.

1. In a clutch, the combination with a shaft, of a rotary member loosely sleeved thereon, a friction drum fixed upon the shaft, a friction band encircling the drum having one end free and the other fixed to the rotary member, a sleeve upon the shaft, a cam associated with the sleeve, a pivoted member in operative relation to the cam, a radially movable member carried by the rotary member extending in operative relation to the pivoted member, and a bell crank lever forming an operative connection between the radially movable member and the free end of the friction band.



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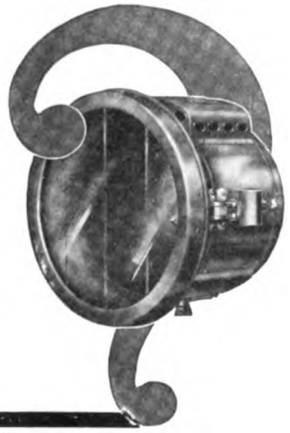
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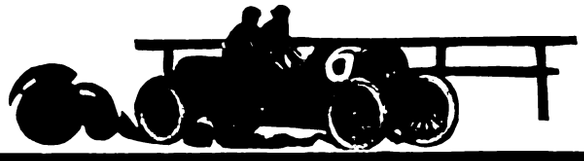
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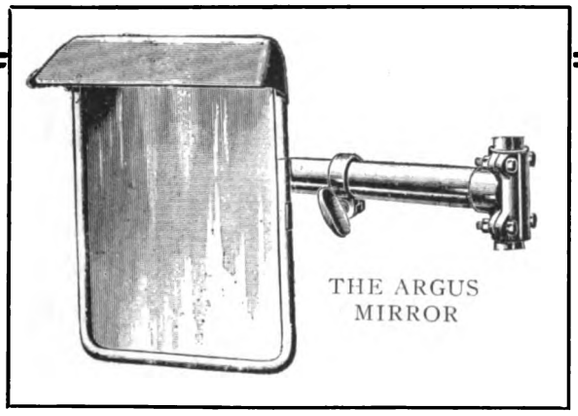
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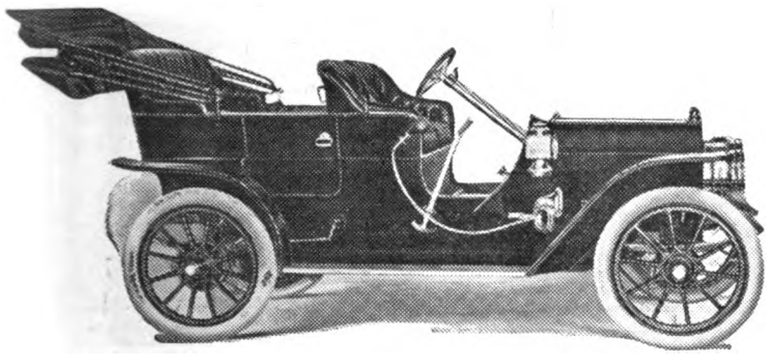
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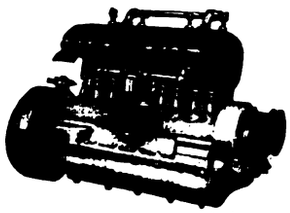
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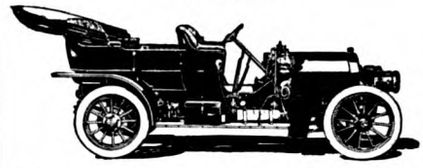
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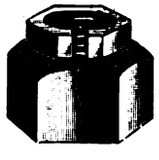
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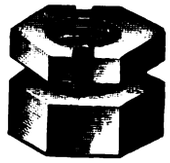
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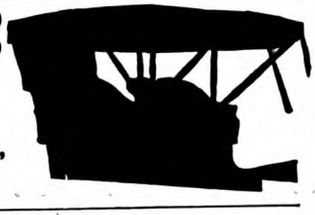
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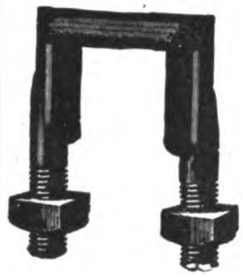
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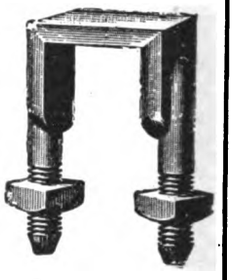
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The construction is of the costliest kind, every part of the same high standard used in all Stewart Speedometers and includes jewel bearings. The equipment will be the regular Stewart link-type flexible shaft and patented swivel joint, furnished with our highest priced models.

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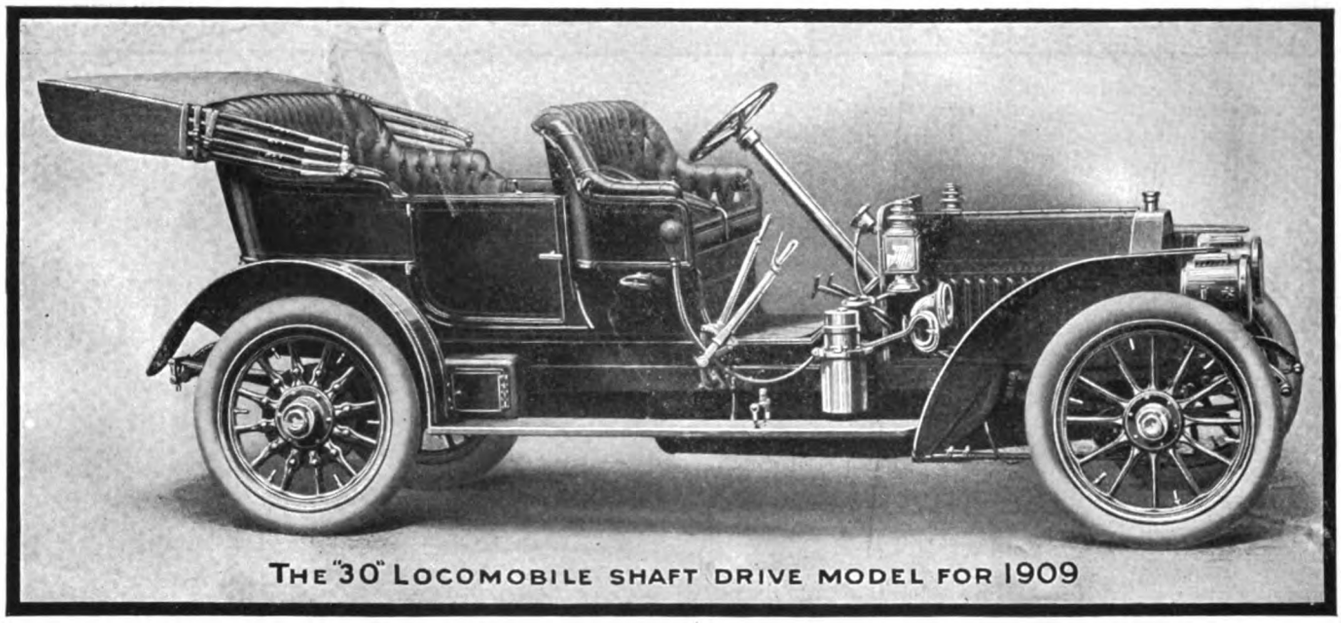
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THE "30" LOCOMOBILE SHAFT DRIVE MODEL FOR 1909

THE MOTORING PUBLIC WILL BE INTERESTED IN READING THE FOLLOWING CIRCULAR ANNOUNCING **1909** LOCOMOBILE MODELS WHICH THE **LOCOMOBILE** COMPANY OF BRIDGEPORT, CONN., HAS RECENTLY SENT TO THEIR DEALERS AND CUSTOMERS:

We signalize our tenth anniversary of the production of automobiles by the announcement of two splendid models—undoubtedly the best that we have ever offered to the public.

Ten years ago the Locomobile demonstrated for the first time the wonderful possibilities of the motor car, and gave the automobile business its first great impetus. To-day the Locomobile is held in the highest esteem. It is everywhere regarded as a car of the highest quality—a car of *composite* merit, satisfactory in every respect. It is specially noted for reliability, and experts agree in rating it the most durable car on the market.

The 1909 product will enhance the high reputation the Locomobile has gained.

We announce an entirely new model "30" *Locomobile,* a five-passenger touring car intermediate in power between our "20" and our "40." It will be equipped with shaft drive.

The "40" *Locomobile* should be the logical choice of those who desire a *high powered car.* The "40" will be produced as a seven-passenger touring car, a stylish roadster, and as a closed car with Pullman Limousine or Landaulet body.

This circular will furnish advance information about 1909 Models, until our preliminary catalog is ready.

ADVANCE INFORMATION CONCERNING 1909 MODELS

"40" LOCOMOBILE.

This car is thoroughly typical of Locombile construction and is the most powerful model we have ever built. It is equipped with a four-cylinder motor of 5-inch bore and 6-inch stroke, giving about 60 horse-power on the testing stand, thus affording high speed and fine hill climbing ability. The artillery wheels are 36 inches in diameter; the tires are 36 x 4 inches front and 36 x 5 inches rear. The wheelbase is 123 inches, and the length over all is 16 feet 1 inch.

The "40" *Locomobile* is a splendid touring car for seven passengers and is notable for it beauty of line, luxurious appointments, and delightfully easy riding qualities. It is a touring car par excellence and will meet any test of endurance to which it can be subjected. *Price, with lamps and equipment,* $4,500. *Top extra.*

The "40" *Runabout,* brought out near the close of the 1908 season, will be an attractive feature of the 1909 production. The body is very attractive and accommodates four passengers, all seats being very

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comfortable and easy riding and convenient of access. The individual front seats are fixed; the rear seats may be removed or only one or both can be used, making the car available for two, three or four passengers as desired. The "40" Runabout can also be supplied with the type of body known as the "toy" or "baby" tonneau, and which enjoys considerable popularity. *Price, with standard body or "baby" tonneau, including lamps and equipment,* $4,500. *Top extra.*

The "40" Limousine and the "40" Landaulet are both beautiful high-powered closed cars. The bodies are roomy, beautiful in design, of the best possible workmanship and finish, and are equipped with extra Pullman chairs. *Prices of these closed cars announced later.*

"30" LOCOMOBILE.

This model is equipped with a four-cylinder motor of 4½-inch bore and 4½-inch stroke, giving about 38 horse-power on the testing stand. As the new model is intermediate in size between the "20" of former years and the "40" Locomobile, it is rated as a "30."

The car embodies all of the special features which have for years identified the Locomobile, such as low tension ignition; bronze engine base and gear box (much stronger than aluminum commonly used); alloy steel in the crankshaft, steering gears, transmission shafts, pressed steel frame, gears, and other important parts; heat-treated drop-forgings of our own manufacture; four-speed selective transmission; imported ball-bearings in wheels, gear box, and other important places. The wheelbase is 120 inches, yet the car can be turned in a 38-foot street. The length over all is 15 feet. The wheels are 34 inches in diameter, tires are 34 x 4 inches front and 34 x 4½ inches rear.

The body is graceful in design and very commodious, seating five adults with entire comfort. *Price of the "30" Locomobile touring car, as illustrated with lamps and equipment,* $3,500. *Top and speedometer extra.*

Another variation of the "30" Locomobile is the "30" *Runabout,* a roadster of the latest type with sharply inclined steering post and equipped with a body similar to that of the "40" Runabout, and which may be used for two, three or four passengers as desired. It will also be supplied with the "baby" tonneau. *Price, with lamps and equipment,* $3,500. *Top extra. Prices of closed cars announced later.*

A feature of the new "30" chassis is the use of shaft drive, the details of which are described in the following paragraphs:

LOCOMOBILE SHAFT DRIVE CONSTRUCTION

We have long appreciated that shaft drive has some very desirable features when applied to a car of the size of the "30" Locomobile. Our new shaft-driven car is fully equal in reliability and lasting qualities to our famous chain-driven cars, and we believe that it combines more good features than any other car on the market, whether of foreign or American design. Some of these features are as follows:

1. *Complete removal of all torsional stresses from the car axle tubes.* Distance rods, similar to those on our chain-driven cars, transmit the driving stresses to the frame and maintain parallelism of the front and rear axles. These distance rods carry the brakes, and their rear ends are free to turn on the axle tubes. Consequently when the springs are depressed the distance rods turn on the axles and do not twist them. Also, when the brakes are applied the braking stresses are not communicated to the rear axle or driving mechanism. Also the power is not transmitted through the springs.

The spring chairs are also free to turn on the axle tubes, and thus the only duty of the springs is to carry the load. This arrangement makes the Locomobile shaft drive car a very easy riding one, in addition to removing all torsional stresses from the rear axle tubes.

All brakes are enclosed and protected.

2. *Exceptionally strong rear axle construction.* The axle tubes are of alloy steel with inner ends forced into the openings of the differential housings by hydraulic pressure and securely riveted in place. Unlike many or most cars, no brazing whatever is used. It will be noted that our form of construction would be the strongest possible in any case, but owing to the removal of all torsional stresses from the tubes it is really very much stronger than necessary. There is no tendency for the tubes to loosen in the housing.

3. *Straight line drive.* When the car is loaded the propeller shaft is almost exactly horizontal—thus the power of the motor is transmitted in a straight unbroken line to the rear axle, thus eliminating loss of power through the universal joints.

4. *Complete universal action.* The propeller shaft is not only horizontal, but is provided with a universal joint at the front end and a *slip universal joint* at the rear end. The latter compensates for any change in distance between the rear axle center and the gear box. The two universal joints compensate for all other stresses as well, so that the transmission of power from the motor to the rear axle is perfectly accomplished without any binding or straining under any road conditions. As the propeller shaft is horizontal, there is very little action on the part of the universal joints, and very little power absorbed by them—furthermore, as the joints are of the best construction, fully protected and lubricated, the *wear* is reduced to a minimum.

5. *Flexible drive.* A torsion rod is provided to overcome the torque reaction of the bevel driving gears. The rear end of this rod is made fast to the differential housing and the front end is connected to the cross member of the chassis frame by a spring suspension. When the car is started in either direction the springs are compressed and the torque reactions are absorbed, reducing the tendency to raise the body when the car is started. Thus the drive from the motor to the rear wheels is a flexible one—a most desirable feature.

6. *Truss rods.* Diagonal tension rods extend from the lower part of the differential housing to the outer extremities of the rear axle tubes. These truss rods transmit the stresses to the wheels instead of permitting them to be concentrated at the center of the axle. This form of construction produces an axle of moderate weight and maximum strength.

7. *Excellent design for driving axles.* The driving axles are of the floating type and rotate inside of the axle tubes. As the weight is all carried on the tubes, the axles only have to transmit the power. The inner ends have a square fit into the differential bevel gears and the outer ends are in the form of dogs or jaw clutches integral with the axles. These engage with the hubs of the wheels, affording an absolutely positive drive and at the same time making it possible to remove the driving axles at any time by simply removing the hub caps.

Summary. It will be seen that the Locomobile shaft drive construction runs very nearly parallel to the Locomobile chain drive construction, and that every weak spot in the shaft drive has been studied and overcome. The most exhaustive road tests have proven most conclusively the durability and lasting qualities of the new Locomobile shaft drive.

LOW TENSION IGNITION

Locomobile low tension ignition adopted in 1905 will be continued. We have had four years' experience with high tension ignition and an equally long trial of low tension ignition, and the results indicate that the latter is far superior in reliability. The Locomobile low tension system differs from the ordinary make-and-break on account of the simplicity of the design and the use of iridium contacts, which does away with frequent and unnecessary timing of the igniters. Locomobile low tension ignition is superior to any form of jump spark on account of the fact that the electrical problem is infinitely more simple and enables the simplest type of magneto to be employed. Furthermore, our system is superior to the high tension ignition because there is no danger from short-circuiting and no complicated wiring—nothing but a few feet of low tension cable.

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THE SELDEN CAR FOR 1909

Enters upon its second year with a clean record. No "first year" car has ever earned a better reputation or made a better showing.

THE OAR OF MCDERATE PRICE

$ 2 0 0 0

Touring Oar **Roadster**
Limousine **Landaulet**

4 cylinder, 28-30 horsepower, shaft drive, selective transmission, metal body, pressed steel frame, excellent hill climber, fine finish and style, roomy tonneau, luxurious upholstery, easy riding, smooth running, economical in up-keep, in fact, a high grade car in every particular.

The "Silent Selden"

1909 MODELS READY IN SEPTEMBER

Agency propositions now ready. Send for catalog and specifications.

Selden Motor Vehicle Co.

ROCHESTER, N. Y.

Member A. L. A. M.

Matheson

1909

Prices Reduced $1,000

And the Reasons Why

Heretofore the Matheson Car has been considered the highest priced as well as the highest grade American car on the market.

Millions of dollars worth of these cars have been delivered to customers who could afford to pay the higher price for **the best.**

Many other purchasers have been persuaded that some of the lower priced cars have been "just as good." Matheson owners who have used other makes of cars have answered that question satisfactorily. Send for their letters, which we have done up in a book.

In order, therefore, to still **maintain the unequalled quality** of the Matheson Car and at the same time give customers this magnificent car at the price of the cheaper cars, the makers have figured that by **doubling the factory output** and selling at a much closer margin of profit, the price of the Matheson Car equipped with Touring, Landaulet or Limousine bodies, could be cut $1,000, and the same chassis, equipped with Roadster or Tourabout bodies, cut $650.

Accordingly, the Company's working capital **has been increased by** $350,000, and after October 11, 1908, the purchaser can buy a genuine Matheson Car, the very finest of all motor cars of either European or American make, **at the makers' former prices to the agent or dealer;** namely:

	New Price	Former Price
50 H. P. 1909 Touring Car	$4,500	$5,500
50 H. P. 1909 Roadster	4,350	5,000
50 H. P. 1909 Tourabout	4,350	5,000
50 H. P. 1909 Limousine	5,500	6,500
50 H. P. 1909 Landaulet	5,500	6,500

VICTORIES

The great string of Matheson victories in the important speed, hill climbing and endurance contests of the past seasons, in competition with the greatest cars of Europe and America, can leave no room for doubt that the Matheson car has no peer on any market to-day.

GUARANTY

Every Matheson is guaranteed for 365 days. (Notice that most other cars are guaranteed for 60 to 90 days only.)

MATHESON AUTOMOBILE COMPANY

Main Sales Office, 1886-1888 Broadway, New York City

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FRANKLIN

Weight is what wears out tires.

In a paper read before the French Society of Civil Engineers, M. A. Michelin, the noted tire expert, says:

"If the weight of an automobile is increased five per cent., it increases the wear and tear on tires fifteen per cent."

This means that the average water-cooled automobile with its extra weight of plumbing apparatus—and weighing, as it does, a third more than a Franklin model of the same capacity—wears out tires just twice as fast.

The light weight of Franklin automobiles and their large wheels and tires eliminate the tire bugbear from automobiling. No other automobiles have such large wheels and tires in proportion to their weight.

Model D weighs only 2100 pounds, yet it has the same size wheels and tires as other automobiles weighing 3200 pounds and upward. Model H has larger wheels and tires than some automobiles a thousand pounds heavier. The larger the tires, the greater their wearing surface and the longer they last. But no tires made are large enough to offset the wear and tear put upon them by the bulky heavy water-cooled machines.

You cannot reduce tire expense nor fuel expense to a reasonable figure in a heavy automobile.

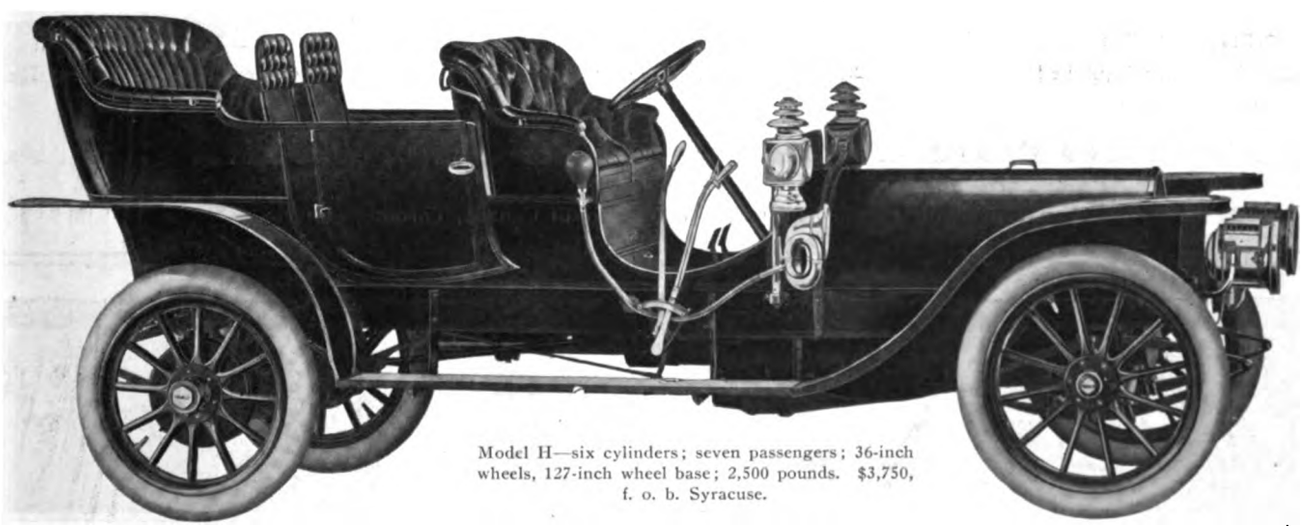
You cannot get the same refinement and simplicity—the combination of power and strength with light weight except through Franklin air-cooling.

What would it mean to you to get rid of tire trouble and at the same time cut the bills down half? Nothing could induce a man who has once known the comfort and security of the light-weight air-cooled Franklin to drive or own a heavy automobile.

Before you buy, think of tires; and of all the burden and trouble that go with useless weight.

Write for the catalogue describing the complete line of Franklin automobiles, four and six cylinders, 18, 28 and 42 h. p., runabouts, touring-cars, town-cars, broughams, landaulets, limousines.

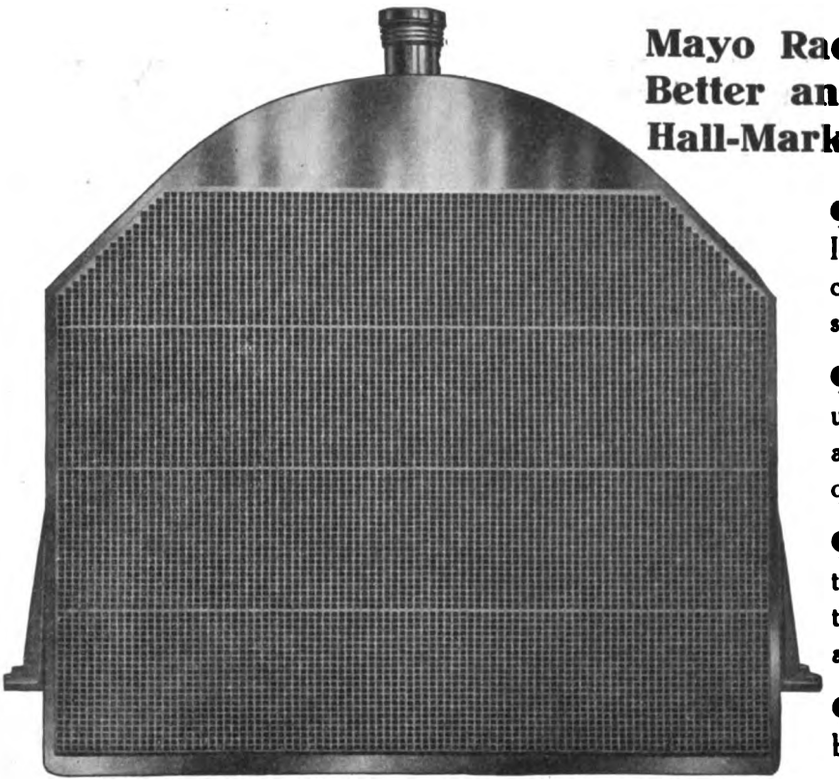
H. H. FRANKLIN MANUFACTURING CO., Syracuse, N. Y.



Model H—six cylinders; seven passengers; 36-inch wheels, 127-inch wheel base; 2,500 pounds. $3,750, f. o. b. Syracuse.

Model H is the most refined six-cylinder automobile in the world—powerful, smooth, simple. There is not another large touring-car so comfortable and safe to ride in, and so economical to use. And in appearance and details it has no superior.

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Mayo Radiators Make a Good Car Better and Their Use on a Car is a Hall-Mark of Quality.

¶ Mayo Radiators are made in a quality shop. In their construction no expense is spared, no crude methods obtain. In their use complete satisfaction results.

¶ Mayo Radiators perform their functions well under all conditions—and conditions at times are exacting. It is at just such times that Mayo quality asserts itself.

¶ The engineer can eliminate possible radiator troubles from his calculations by the adoption of the best possible radiator. The test of years and use has proved that we make it.

¶ Our capacity limit on new contracts is rapidly being reached.

MAYO RADIATOR COMPANY, New Haven, Conn.

THE OLDSMOBILE

is not only the **WORLD'S BEST CAR**, but one of its oldest and most famous. It gives prestige to both owners and agents.

Model M	Model M R	Model Z
Touring Car, Fully Equipped,	"Flying Roadster," Fully Equipped,	6-Cylinder, 130-inch Wheel Base,
$2,750	$2,750	$4,200

OLDS MOTOR WORKS, Lansing, Mich., U. S. A.

Members A. L. A. M.

Canadian Trade supplied from Oldsmobile Co. of Canada, Toronto, Ontario.

Empire Tires

WEAR LONGEST

EMPIRE AUTOMOBILE TIRE COMPANY, Trenton, N. J.

New York, 148 Chambers St., and Broadway and 73d St.; Boston, 292 Devonshire St.; Buffalo, 724 Main St.; Fobes Auto Supply Co., Portland, Ore.; Fobes Auto Supply Co., Seattle, Wash.; Waite Auto Supply Co., Providence, R. I.; Chicago, 1301 Michigan Ave.; Atlanta, Ga., Dunham Rubber Co.; Denver Auto Goods Co., Denver, Colo.; Penn Auto Supply Co., Philadelphia, Pa.; Savell Rubber Co., Jacksonville, Fla.; Empire Tire & Rubber Co., Minneapolis, Minn.; The Motor Supply Agency Co., 1246 Euclid Ave., Cleveland, O.; The Consumers Auto Supply Co., 7th Ave. & Smithfield St., Pittsburg, Pa.

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SUPPLEMENTARY SPIRAL SPRINGS

¶Cars are like men in that it takes a study of them to realize their possibilities.

¶We have made a study of the spring question and can help you realize to the full the easy-riding possibilities of your car. The use of Supplementary Spiral Springs are a duty you owe to yourself. They provide spring insurance and spring comfort, effectually guarding against shocks to your pocketbook and passengers.

¶Many thousands of the S. S. S. are in use by just as many satisfied users. Better be one of them NOW.

¶Your dealer or garage can fit you out in a few hours' time.

SUPPLEMENTARY SPIRAL SPRING CO.

Motor Mart, New York — 4555 Delmar Ave., St. Louis, Mo.

THE RIGHT OF WAY

is assured if your car is equipped with a

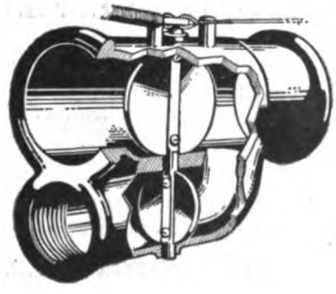


1909 Gabriel Horn

Its rich, mellow tone warns without frightening, A three note tone which by a new device rises from a sweet musical tone for city use to a penetrating warning for country riding, at the will of the operator. Adopted exclusively by the Crowned Heads of Europe as a royal instrument for royalty's use.

NEW 1909 GABRIEL CUT-OUT VALVE

relieves engine of back pressure, guaranteed not to stick under any condition and is of great assistance in hill-climbing or over rough roads. Made to fit 1" to 2½" exhaust pipe.



Write for catalog and prices.

Gabriel Horn Mfg. Co., 1417 E. 40th St. CLEVELAND, O.

The Truth About the Reduction in Tires

Some tire manufacturers, working in collusion, tell you that they are able to reduce the prices of their tires owing to a reduction in the cost of crude rubber.

It is a peculiar fact, however, that **other rubber goods** manufactured by these same firms **have not changed in price** for years.

Another of their arguments is "Increased Capacity"—and right here it may be interesting to note the prices of these concerns on September 1st., 1906, as compared with the present figures:

	Sept. 1, 1906.	Sept. 1. 1908.
28 x 3 in. tire complete	$34.32	$17.55
30 x 3½ in. tire complete	48.39	27.25
32 x 4 in. tire complete	60.00	38.80
32 x 4½ in. tire complete	73.35	49.20

Do you think increased capacity should make this difference? No!

Could the reduction be brought about through a reduction in the price of crude rubber? Yes. **But has rubber really been reduced?**

Crude Fine Up-River Para Rubber is at least **20 per cent. higher to-day than it has been any time for the past twelve months.** PECULIAR CONTRADICTION, isn't it? NOW FOR THE FACTS.

On August 12th, 1908, we refused to accept the proposition advanced by our competitors, to **muzzle free competition** in the tire trade by agreeing to adhere to a uniform discount—a scheme by which they attempted to recover from **dealers** and **consumers** and **losses entailed** by the conduct of their business in other quarters.

We were opposed to the Tire Pool; it was **we who fought it** and saw it "BUST" on September 1st, 1906, and we are still **opposed to every kind of tire combination.**

This short statement tells the TRUE story and the TRUE PURPOSE of the recent price reduction, which is to

Drive Out Competition

—Ajax competition we might add.

At the present prices of raw material neither the product of our competitors nor Ajax tires can be sold at the profit that is **legitimately** due the manufacturer. But in offering our own tires at correspondingly reduced prices we simply fight back with the **pocketbook argument.**

As far as our competitors are concerned, we warn the tire using public to

Look Out for the Cut in Quality

that usually accompanies the cut in price.

AJAX TIRES

ARE GUARANTEED FOR 5,000 MILES

A certificate signed by the President of our Company, and bearing the number of the tire, accompanies **every tire** sold, and on the back of the certificate is a table of adjustments by which every user of Ajax tires can compute the charge should a replacement be necessary.

There is no better recommendation for a tire than our 5,000 mile guarantee, because it puts the **burden of proof upon us** and we MAKE GOOD.

"See our exhibit at Grand Central Palace Show, opening in New York on New Years Eve."

Ajax-Grieb Rubber Co.

FACTORIES: TRENTON, NEW JERSEY

BRANCHES:

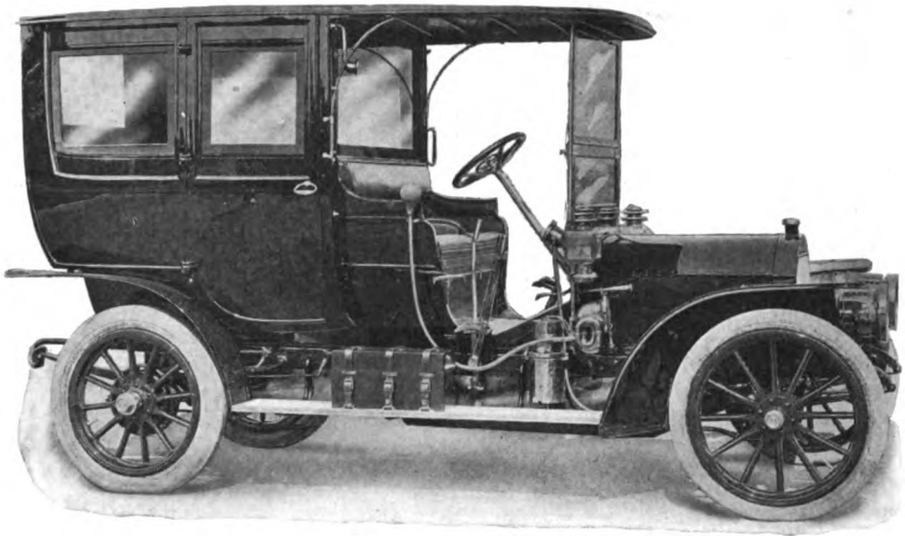
N. Y. City, 57th St. and Broadway.
Boston, 819a Boylston St.
Philadelphia, 316 No. Broad St.
Detroit, 743 Woodward Ave.
Chicago, 1418 Michigan Ave.
Kansas City, Mo., 1422 Grand Ave.
Denver, Colo., 1529 Cleveland Pl.
Seattle, 1102 Broadway.
San Francisco, 438 Market St.
Los Angeles, 1038 So. Main St.

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Columbia

1909 Models of Gasoline Touring Cars (5 passengers), Runabouts (3 passengers), Roadsters (4 passengers), Limousines (7 passengers) and Landaulets (7 passengers); also Victoria Phaeton now ready for delivery

Advance Circulars Giving Detailed Descriptions Mailed on Application



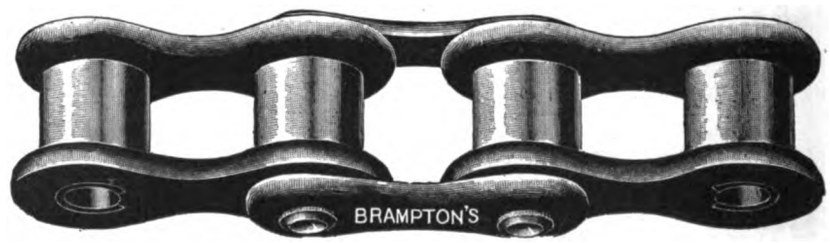
Agents Wanted in Unoccupied Territory

Mark XLVIII, 4 cylinder, 29 H. P. Limousine (seating five inside and two outside) Equipped Ready to Run, $3,750.00

Manufactured by ELECTRIC VEHICLE COMPANY, Hartford, Conn.

Members A. L. A. M.

THE BRAMPTON MOTOR CHAIN



All side plates on both sides of the Brampton Chain are stamped "BRAMPTON."

LARGE SALES and SMALL PROFIT with thousands of satisfied customers is our best advertisement. THE BRAMPTON CHAIN is made of self-hardening Steel; the strongest Chain in the World. All parts polished; fits sprockets (that are properly cut) without friction.

Some of the other chains may look like THE CELEBRATED BRAMPTON CHAIN because some of the other chain makers began to copy the design and shape of the BRAMPTON CHAIN links in 1904. They have improved somewhat on their copied design from time to time until these chains now look more like the BRAMPTON CHAIN than ever before. These chains somewhat resemble the BRAMPTON in appearance, but the manufacturers of such chains have been unable to copy the material —self-hardening steel.

NO CHANGE IN THE BRAMPTON

There has been no change in the design, construction, material or finish of the BRAMPTON MOTOR CHAIN in the past ten years.—"ENUF SED."

PRICE

The price being equal, it's presumable you want the best, and full value for your money. In such cases, the BRAMPTON FILLS THE BILL, and the prices are the same to manufacturers, jobbers, dealers and consumers as any other chain of equal size. We have in stock chains to fit all American and foreign cars.

YOUR 1909 CAR

You can have the new car that you order fitted with the CELEBRATED BRAMPTON CHAIN if you order it that way. No extra cost to either you or the manufacturer. All standard sizes in stock to fit American and Foreign Cars at the same price as the other chains.

SPECIAL CHAINS TO FIT THE INDIAN MOTORCYCLE.
Agents wanted in unoccupied territory. Catalog on request.

CHAS. E. MILLER, Manufacturer, Jobber, Exporter and Importer
Main Office: 97-99-101 Reade Street, **New York**

BRANCHES: 54th St. and 8th Ave., New York. 318-320 N. Broad St., Philadelphia, Pa. 1829 Euclid Ave., Cleveland, O.
202-204 Columbus Ave., Boston, Mass. 227½-229 Jefferson Ave., Detroit. 1392 Bedford Ave., Brooklyn, N. Y. 824 Main St., Buffalo.

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CAUTION

The demand for PIRELLI CABLE (Italian Ignition Wire—rubber covered) has become so general, that competitors have thrown all kinds of imitations on the market.

In order that the automobile manufacturers as well as the users may be safeguarded against worthless imitations, we point out

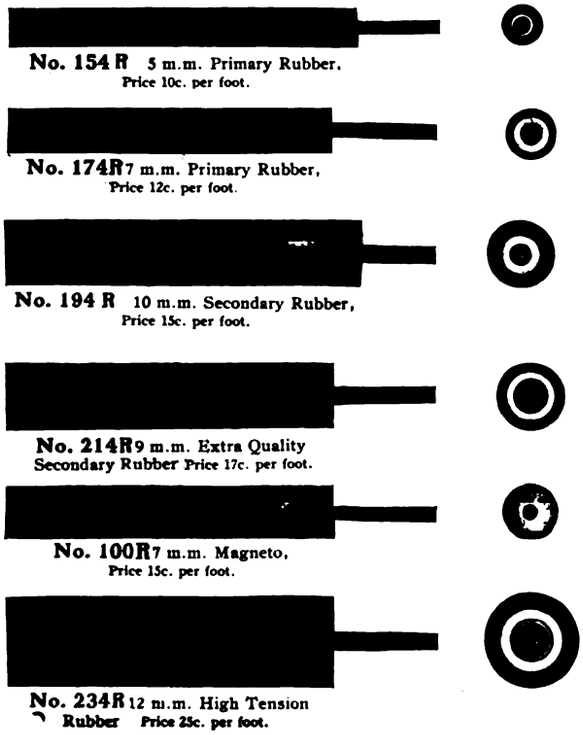
HOW TO TELL THE GENUINE

Cut off a section—an inch or less—from the cable you are investigating. Pull it off the wires and cut it open lengthwise. **If you can separate the different layers of vulcanized rubber, or if the rubber cracks from bending it back and forth and squeezing it, YOU HAVE AN IMITATION.**

The reason **PIRELLI CABLE will not crack,** is because **it is not moulded, but drawn in endless lengths, and all the layers of rubber are vulcanized as a unit.** Some manufactures in order to hide the mould marks, cover it up with a sheet of rubber before vulcanizing.

The Genuine PIRELLI Costs No More than the Imitations

therefore you have no reason to be imposed upon. We will be pleased to send a small section of **Pirelli Cable** to any one interested—for comparison. These are the different sizes for different uses:



No. 154 R 5 m.m. Primary Rubber, Price 10c. per foot.

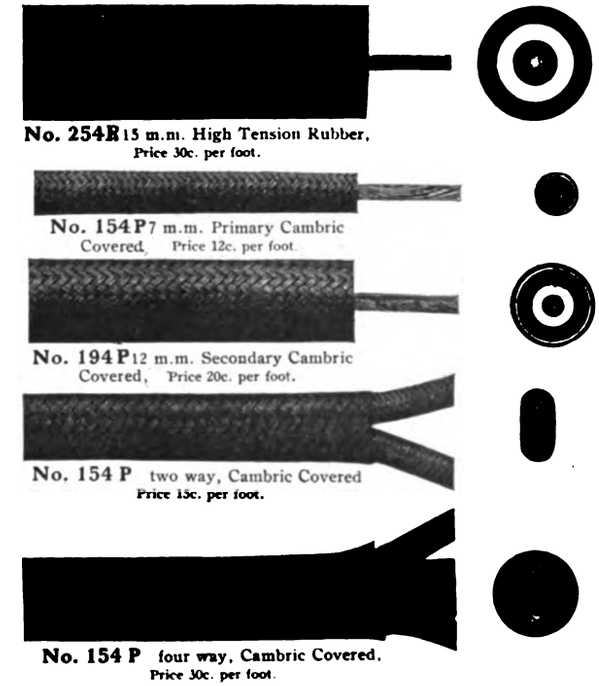
No. 174R 7 m.m. Primary Rubber, Price 12c. per foot.

No. 194 R 10 m.m. Secondary Rubber, Price 15c. per foot.

No. 214R 9 m.m. Extra Quality Secondary Rubber Price 17c. per foot.

No. 100R 7 m.m. Magneto, Price 15c. per foot.

No. 234R 12 m.m. High Tension Rubber Price 25c. per foot.



No. 254R 15 m.m. High Tension Rubber, Price 30c. per foot.

No. 154P 7 m.m. Primary Cambric Covered, Price 12c. per foot.

No. 194P 12 m.m. Secondary Cambric Covered, Price 20c. per foot.

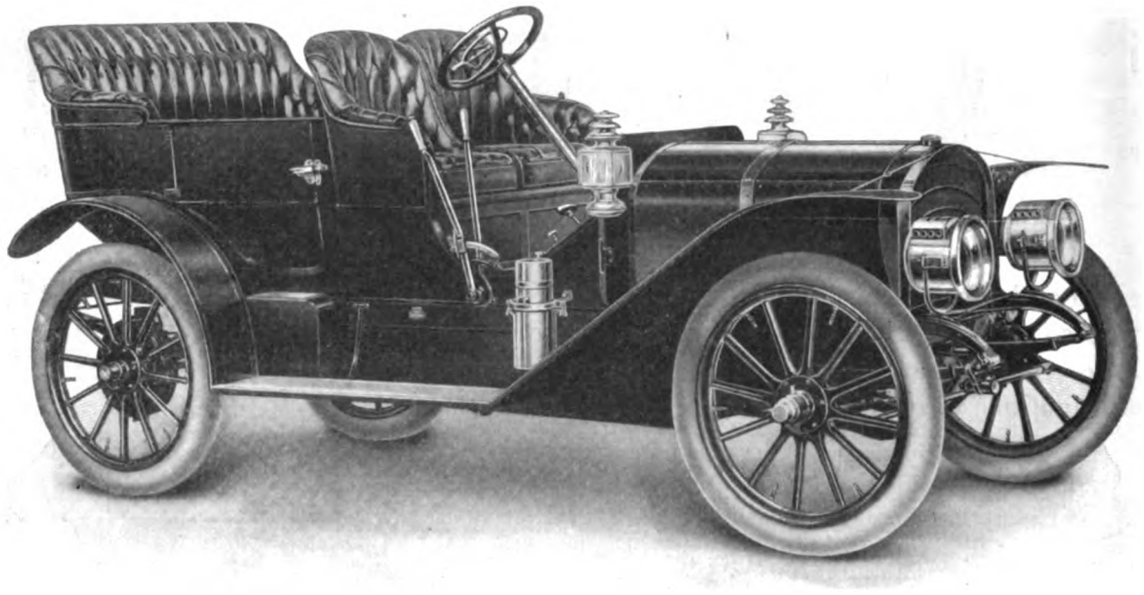
No. 154 P two way, Cambric Covered Price 15c. per foot.

No. 154 P four way, Cambric Covered, Price 30c. per foot.

TO AVOID IGNITION TROUBLE, SPECIFY PIRELLI WIRE.

PIRELLI & CO., 296 Broadway, New York

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Model 34, Price $2,250

Two Vital Features of This Car.

THE offset crank shaft and straight line drive, more than any other features are responsible for the unusual efficiency, the high delivered power and the wonderful flexibility of control of this four cylinder, five passenger

Rambler

Most automobiles can develop sufficient power at high speed, but the owner's greatest need is for power at slow engine speeds—power on the hills—in stretches of sand and mud.

The offset crank shaft and stright line drive give flexibility, allow more high gear work without overtaxing the engine; that means less gear changing; less clutch manipulation—therefore ease and economy of operation.

This car can be throttled down to operate smoothly and steadily on high gear at three miles an hour. Or it can run forty-five miles an hour.

These features besides those big wheels, big tires, long wheel base, accessible engine, safety starting device, reinforced tubular axle, finished parts of genuine mahogany, perfect brake control, and large luxurious body, make this a car of highest quality.

Ready for immediate delivery. Please write for details now.

Thomas B. Jeffery & Company, Main Office and Factory: **Kenosha, Wis.**

Branches and Distributing Agencies: Chicago, Milwaukee, Boston, Philadelphia, San Francisco.

Representatives in all leading cities.

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, October 29, 1908. No. 5

HOADLEY HAS A MERGER SCHEME

Prominent Makers Solicited for "Options" —Promoter Encounters Difficulties in the Terms Asked.

Quite aside from the companies that have been prominently mentioned as about to join in a huge consolidation, a number of the largest makers have for some time been solicited for "options" by various Wall street gentlemen whose business it is to consolidate and juggle with sundry and various industries with the result that these same gentry have been treated to some interesting surprises. After selecting a list of the most promising plants, Joseph H. Hoadley, of the firm of Hoadley & Knight, which has New York City as its headquarters, has interviewed their owners with a most attractive appearing plan for a merger that is calculated to make everybody connected with it "rich beyond the dreams of avarice." Hoadley knows the economic advantages of consolidation, especially for himself, and is fluent with figures and roseate verbal pictures of what it can accomplish for the manufacturer who finds himself annoyed by competition.

As guiding spirit in the fragrant International Power Co., the stock of which was removed from the New York stock exchange list, he is familiar with large corporation matters. It is true that one of his lieutenants, after giving orders to sell 3,000 shares of the stock, neglected to arrange for its being bought in at the same time, so that without a prepared buyer the shares fell a full 100 points, causing some commotion at the time, but such incidents have simply contributed to an enrichment of Hoadley's fund of business experience, and but the better prepare him for the future.

In seeking his "options," however, it is understood that he has encountered a most obstinate spirit on the part of the automobile manufacturers concerning the terms that they will accept for their properties. Where in other lines it has been possible to exchange magnificently engraved pieces of parchment paper for real factories, goods, patents and materials, the stubborn and hard-hearted—not to say hard-headed—manufacturers of motor cars have insisted on discussing in terms of actual dollars, thus embarrassing the negotiations in no small degree. The stiff prices asked would not in themselves constitute a difficulty were it not that the payment would have to be in cash or satisfactory guaranteed or mortgage notes, the cold insistence on which has been made with discouraging firmness.

In fact throughout the list, this demand has been so general that the consolidation scheme has latterly halted to some extent, but should the makers later find themselves in a position where they want to be "saved" and will relax from their absurd position, Hoadley and others of his kind will cheerfully take up the work.

McCord Moves from Chicago to Detroit.

McCord & Co., of Chicago, Ill., are removing that portion of their factory devoted to automobile supplies, to Detroit, Mich. The action follows troubles with the Windy City's tinsmiths' union. Factory space has been obtained from the Hugh Wallace Co. in Detroit, where the work formerly carried on at the Kinzie street plant in Chicago will be transferred as soon as possible.

American Automart in Bankruptcy.

Bankruptcy proceedings were instituted this week against Max Wineburgh, who has been doing business as the American Automart, at 1621 Broadway, New York City. The liabilities are estimated at $10,000, and the stock of automobile supplies in the store and the garage are said to about equal this amount.

Mercury to be Made in Hillsdale.

The Mercury Motor Car Co. has been organized at Hillsdale, Mich., with $50,000 capital, and has its first cars under construction. J. W. Raymond is the president and general manager of the concern.

NOT WELCOME AT PALACE SHOW

No Space for the Two Makers at Odds with the Licensed Association—Ford's Prompt Ultimatum.

Instead of a warm welcome for manufacturers who were this year omitted from the roster of exhibitors at the Madison Square Garden show to be given by the Association of Licensed Automobile Manufacturers, the "independent" makers have manifested a strong dislike for their society in the Grand Central Palace show of the American Motor Car Manufacturers' Association. Tentative efforts to provide for them in the latter exhibition after their relations with the A. L. A. M. had become so strained as to make it apparent that they would not be awarded space in the Licensed affair, aroused vigorous protest from more than one of the "independent" makers, and resulted in an ultimatum to the show management that was so strong as to stop further consideration along such lines.

Without mincing matters, Henry Ford, president of the Ford Motor Co., of Detroit, Mich., came out with a declaration that if the two companies who were no longer to be exhibitors in the Licensed fold were given space at the Palace show, his company would be conspicuously absent and that the management might sell his space to somebody else. Ford's position in the "independent" field gives force to his wishes, and the plan to make room for the newcomers was quickly abandoned. As a consequence the two companies will for the first time in their history, be unrepresented at either of the big New York shows.

Hall Leaves the Badger Brass.

Charles M. Hall, who has for several years represented the Badger Brass Mfg. Co., of Kenosha, Wis., on the road, has parted company with that concern. He is to be general sales manager of the American Lamp Co., of Detroit, Mich.

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The Week's Incorporations.

Mansfield, O.—Standard Auto and Transit Co., under Ohio laws, with $10,000 capital.

Pittsburg, Pa.—Mutual Motor Car Co., under Pennsylvania laws, with $10,000 capital.

Philadelphia, Pa.—S. & G. Motor Car Co., under Pennsylvania laws, with $20,000 capital.

Dayton, O.—Dayton Motor Car Co., under Ohio laws, increases capital from $50,000 to $500,000.

Cleveland, O.—Derain Motor Co., under Ohio laws, with $30,000 capital. Corporators—J. J. Murphy and others.

Los Angeles, Cal.—Los Angeles Auto mobile Livery and Sight-Seeing Co., under California laws, with $75,000 capital.

Milwaukee, Wis.—Gove Automobile Co. under Wisconsin laws, with $5,000 capital. Corporators—Richard Gove, E. G. Gove and J. Carroll.

Indianapolis, Ind.—Best Automobile Co., The, under Indiana laws, with $20,000 capital. Corporators—Edgar Updyke, William N. Gates and Edward E. Gates.

Oklahoma City, Okla.—Tulsa Motor Car Co., under Oklahoma laws, with $10,000 capital. Corporators—T. C. Ferguson, C. L. Ferguson and J. B. Bartlett.

Newark, N. J.—Jackson Motor Car Co., under New Jersey laws with $100,000 capital. Corporators—Charles E. Oathout, Newton A. Merritt and Walter F. White.

Los Angeles, Cal.—Los Angeles Motor Car Co., under California laws, with $50,000 capital. Corporators—Ralph J. Leavitt, La Bree Leavitt and Nathan P. Bundy.

Minneapolis, Minn.—Bingham-Jordan Automobile Co., The, under Minnesota laws, with $50,000 capital. Corporators—George Bingham, T. C. Jordan and Eva Bingham.

Elmira, N. Y.—Southern Tier Motor Co., under New York laws, with $25,000 capgines. Corporators—G. W. Shoemaker, C. S. Lattin, Elmira; H. K. Crandall, Athens, Pa.

Denver, Col.—Independent Automobile Repair Co. under Colorado laws, with $5,000 capital. Corporators—John E. Button, George E. Siegel and James L. Glendining.

Nashville, Tenn.—Tennessee Auto Co., under Tennessee laws, with $13,000 capital. Corporators—J. K. Polk, Jr., J. J. Vertrees, Jr., W. O. Vertrees, Buford Duke and W. J. Wallace.

New York City, N. Y.—International Taximeter Motor Cab Co., under New Jersey laws, with $100,000 capital. Corporators—M. Sergey Friede, Joseph Thomas and John R. Turner.

Winston-Salem, N. C.—H. I. Riggins Livery Co., under North Carolina laws, with $100,000 capital; to deal in and rent automobiles. Corporators—H. I. Riggins, Swift Hooper and W. G. Crawford.

Los Angeles, Cal.—Road Runner Auto Co., under California laws, with $1,500,000 capital; subscribed $5,000. Corporators—C. A. Markwell, M. H. Magie, M. D. L. Scott, A. E. Yerkes and John D. Works.

Cleveland, O.—Auto Purchasing and Exchange Co. The, under Ohio laws, with $10,000 capital. Corporators—Francis J. Wallace, J. C. Heald, C. A. Hall, M. H. Castle and Charles C. Clarke.

New York City, N. Y.—Non-Fluid Oil Co., under New York laws, with $50,000 capital. Corporators—Thomas A. Matthews, Walter F. Kimball and Frederick J. Barnes, 14 Church street, New York City.

New York City, N. Y.—Automobile Tire Co., under New York laws, with $10,000 capital. Corporators—Edward C. Griffith and Mary P. Griffith, 1584 Broadway; Geo. L. Lewis, 42 Broadway, New York City.

Boston, Mass.—G. H. Pixley Co., under Massachusetts laws, with $50,000 capital; general automobile business. Corporators—C. H. Tebbetts, president, Marshfield, Mass.; G. H.Pixley, treasurer, Dorchester, Mass.

Columbus, O.—Broad-Oak Automobile Co., The, under Ohio laws, with $10,000 capital; to trade in automobiles. Corporators—S. W. Knouse, M. F. Loofbourrow, O. W. Loofbourrow, D. T. Hock and Charles Pavey.

Bridgeport, Conn.—Blue Ribbon Garage, The, under Connecticut laws with $10,000 capital. Corporators—Johannes Schiott, William E. Seeley and John T. King; C. A. Clark, president, and Julia G. Hoyt, secretary and treasurer.

Denver, Col.—Elkhart Motor Co., The, under Colorado laws, with $10,000 capital. Corporators— Martin E. Crane, Willard W. Sterling and Charles L. Monger, of Elkhart, Ind.; Augustus J. Sears and Wilford M. Oleen, of Denver, Col.

Uppercu Buys Cadillac's Agency.

By the sale of all the capital stock of the Detroit-Cadillac Motor Car Co., of New York City, to Inglis M. Uppercu, the latter on Tuesday, the 27th inst., became the company's proprietor and will hereafter direct its affairs. The concern has the New York City agency for all the lines of the Cadillac Motor Car Co., of Detroit, Mich., which latter company owned the entire control until purchased by Uppercu. The new owner is well known to the trade as the secretary and treasurer of the Motor Car Co. of New Jersey, having its headquarters in Newark, N. J.

Carrying out plans previously formulated by the company, Uppercu will assume the lease of the new salesroom and garage at Broadway and Fifty-seventh street, which will be opened about November 1. Ernest H. Brandt, who has been the manager of the company, is now secretary and general manager, while Uppercu is president and treasurer.

In the Retail World.

North Bend, Neb., boasts its first garage. George C. McVicker and Mason Howard are the proprietors.

The Wisconsin Automobile Exchange, of Milwaukee, Wis., is building a new garage. It is located at 241-3 Wisconsin street.

Hampton, Ia., is to have an automobile supply station and garage. T. C. Miller will be in charge, and C. F. Roemer will be associated with him financially.

E. De Camp has taken the building formerly occupied by the Livingston Motor Co., at 284 Halsey street, Newark ,N. J. He will operate it as a garage.

The Borderwisch Automobile Co., of Dayton, O., has filed a certificate with the secretary of state changing its name. It is now the Ohio Automobile Co.

Work has commenced on the new Moriarty garage in Kansas City. The reinforced concrete, three-story building is being erected at 1508-10 Grand avenue.

Charles Bauch has leased a garage building which is being put up in Maquoketa, Ia. The structure will be finished on December 1, when Bauch will open for business.

The business of the Jamaica Plain Garage Co., on Seaverns avenue, Jamaica Plain, Mass., has been bought by Samuel Payson. The new proprietor will shortly erect a larger garage building.

William A. Arnold and W. E. Schmick have formed an automobile supply company in Hamburg, Pa. It will be known as the Hamburg Motor Supply Co., and will soon erect a large garage.

F. L. Thomas has been made permanent branch manager of the Franklin Automobile Co., 1450 Michigan avenue, Chicago, Ill. He has for some time been occupying the position of acting manager.

A Philadelphia branch of the Olds Motor Works, of Lansing, Mich., is being opened on North Broad street. Sub-branches are to be established in the smaller cities and towns in the territory assigned to the Quaker City office.

The Hills Motor Car Co., formerly located at 130 North Broad street, Philadelphia, Pa., has changed its location to a larger establishment at 604-6 North Broad street. The garage and repair shop will remain at 246 North Juniper street.

The Johnson Auto Co., of Vincennes, Ind., of which M. T. Johnson, local automobile dealer is the leading spirit, has planned the erection of a large garage for livery and storage. It will be two stories high and will have a competent repair shop.

Nute & Keena, Seattle, Wash., have secured the northeast corner of Bellevue avenue and East Pike street for a one-story concrete garage and automobile salesroom. The structure is planned to provide for the later addition of further stories if necessary.

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COULD BUILD WONDERFUL CARS

Knowledge Born of Experience Would Preponderate Over Theory in This Factory—But Money is Needed.

Let all the present automobile makers boast about their designers and their factory superintendents and their experienced machinists, but make them tell, if they will, who could build the best automobiles in the world if only they set about it. Who is it that by their experience in driving cars, repairing cars, smashing cars and tuning cars, not to mention washing them, could design and build cars that would make the present productions look pitiful by comparison? And the answer is wafted from Louisville, Ky., that it is the chauffeurs. Of course even before the answer comes from Louisville, some discerning minds have already guessed it, but they may not know that the chauffeurs are preparing to prove it

Already the plans have advanced to a point where the Professional Chauffeurs' Association is holding meetings to promote a factory where they can make touring cars, runabouts, doctors' callabouts, taximeter cabs and delivery wagons which will incorporate the features and ideas which combined chauffeuring experience suggests. At least one car has been built after this fashion and named in honor of the king of drivers, "Nazarro," and although it was not constructed in the big plant of the chauffeurs' association, because that plant is not built yet, it nevertheless has been decided upon as a model for one of the many styles that will emanate from the chauffeurs' factory if the investing public does not prove to be a set of "tight-wads" when it comes to helping the enterprise along.

If cars, why not tires? Sure! Tires, too, are to be made at the projected plant. Who is it that knows all there is to be known about tires? (Answer from Louisville same as in first paragraph). Having heard that there is a great deal of graft in tires as marketed at present, resulting in high prices to the owner, the chauffeurs' association will produce tires at the prices at which they ought to be sold, and will make them so durable that chauffeurs need actually buy only one set out of every six that they tell the owner they need the money for. Of course the tire department will not be started until the car making part of the outfit is running smoothly, and the latter will not be started until the factory is built, and the factory construction will not be started until somebody supplies the money, and the money supply has got to be started somehow, and so that is why the association has started holding its meetings.

Adopts "Inter-State" as Its Title.

After temporary anonymity, pending the selection of a name by means of a prize contest, the automobile concern headed by Thomas Hart in Muncie, Ind., has decided to call itself the Inter-State Automobile Co. The new factory buildings, which are largely of glass, are being completed, and it is planned to produce 1,000 cars during the coming year.

Must File Pope Motor Car Claims.

Creditors of the Pope Motor Car Co. are being notified that November 1 is the last day on which they may prove and file their claims against the company, and that should they fail to take such action on or before that date, they will be barred from participation in the assets. Claims are to be filed at Toledo, O., with the clerk of the United States circuit court for the northern district of Ohio, western division, where the company's legal affairs center.

Credit Association's New Feature.

The Automobile Trade Credit Association, with offices at 80 Wall street, New York City, has instituted a new feature in a committee to handle the claims of members against bankrupt concerns. The committee will endeavor to effect economies and obtain settlements that in many cases would not otherwise be possible. Twenty-two automobile and accessory concerns have recently been added to the membership.

Henry and Porter Part from E-M.F.

Dave Henry has resigned as traveling representative of the E-M-F Co., of Detroit, Mich., as has J. D. Porter. Their duties in the West and the East, respectively, in arranging for the distribution of the company's product became very light as a result of a heavy demand for the cars.

Motor Car Broker is a Bankrupt.

Charles I. Scott, of 1779 Broadway, New York City, who has been doing business as an automobile broker, has filed a voluntary petition in bankruptcy. There are fifty creditors and his liabilities amount to $19,936, with no assets.

Burned Many Automobile Bodies.

Fire damaged the stock and plant of the George T. Stehling Wagon and Truck Mfg. Co., of Milwaukee, Wis., recently, to the extent of $5,000. Automobile woodwork on the second floor was the chief contribution to the flames.

Burgess Builds a Spring Factory.

Wenona, Ill., is to have a new manufactory, where "double tension" automobile springs are to be made. A brick building is being constructed for Charles Burgess, Jr., the inventor and backer of the enterprise.

Economy to Move to Joliet.

The Economy Motor Buggy Co., formerly of Fort Wayne, Ind., is removing to Joliet, Ill., where local capital has been interested. Ground has been broken for a spacious two story brick factory in East Cass street.

POPE CREDITORS ARE WAITING

Reorganization is Close at Hand—Provides for All Claims—Date is Set for the Hearing Before the Court.

Further steps toward the reorganization of the Pope Mfg. Co. have been taken to the extent that an order has been obtained from the court calling upon holders of the capital stock and holders of the voting trust certificates to show cause why the offer and plan of the reorganization committee should not be accepted. The hearing has been set for Tuesday, November 10, before a court at Chancery Chambers, in Newark, N. J.

Of the first and second preferred stock, the holders of which will alone participate in the exchange of new shares, there has already been deposited with the trustees over 98 per cent. of the first preferred, and approximately 90 per cent. of the second preferred. The stockholders themselves have subscribed for a large part of the issue of $800,000 in notes which is to provide the ready cash for launching the reorganized company, the balance being taken by the underwriters for marketing when the deal is effected.

So imminent is the reorganization that the creditors' committee is not pressing the receivers for the fourth and final creditors' dividend which many of the individual creditors are asking for. Since the plan for the new company provides for the payment of all the old claims with interest, the committee has thought it best to await this result, which seems likely of early consummation.

Excelsior to Distribute Stepneys.

Middle west distribution of Stepney wheels and other products of the Spare Motor Wheel of America, Ltd., has been placed with the Excelsior Supply Co., of Chicago, Ill. The former company's retail store at 236 Michigan avenue will be given up, and George S. Morrow, general sales manager, in addition to handling the advertising, will divide his time between New York City, Chicago and Kansas City, at which points the three main distributing agencies are located.

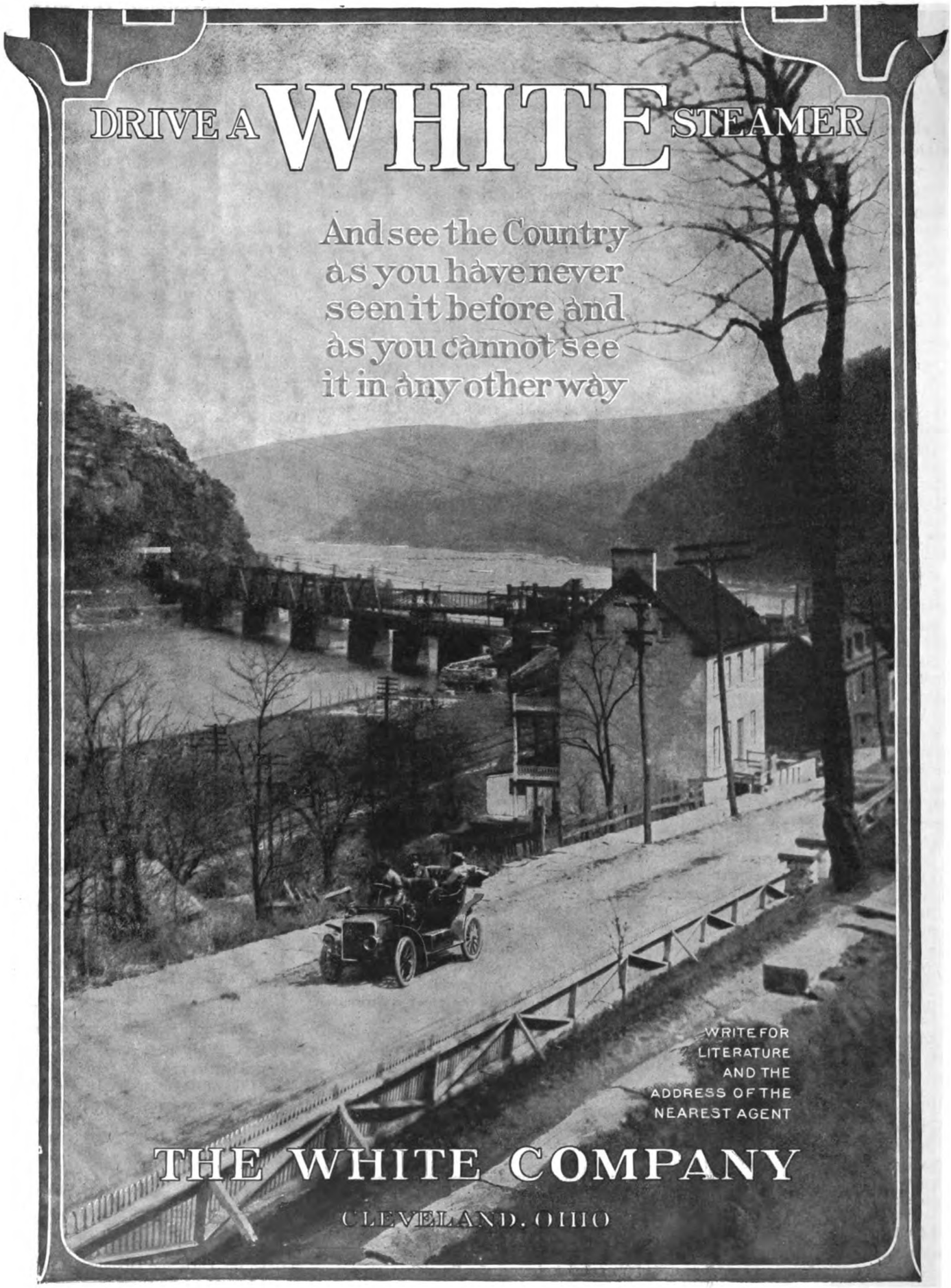
Whitlock Resigns from Empire.

W. G. Whitlock has resigned from the sales department of the Empire Automobile Tire Co., of Trenton, N. J. He went with the Empire company when President C. H. Semple carried with him a number of associates then connected with the G & J Tire Co.

Grossman Sails Next Week.

Emil Grossman, president of the National Sales Corporation, of New York City, sails for Europe next week. He will attend the Paris and Olympia shows.

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Concerning the Cup and the Car.

That an American car should win the Vanderbilt cup race against foreign built contenders is a very happy circumstance in itself, but peculiarly so just now in view of the fact that in future the race is to be for American cars only. In lifting the cup, the Locomobile removed all possibility of the taunting comment that not until all foreign cars had been eliminated by the rules could an American contestant capture the trophy. As a conspicuous figure in Vanderbilt races of the past, moreover, its present victory is a logical as well as a gratifying one.

But aside from these causes for self-congratulation, the true American must feel a sense of wholesome pride at the showing made by the other American entries. While the foreign contingent was lacking in the names of drivers famous for their big successes, the cars both in power and in rank in the racing world, were sufficiently representative to make the contest truly international in character. It completely vindicated the old assertion that the American makers are competent to build racing cars as reliable and as fast as any produced in other lands.

Strangely enough the Locomobile that won the race was in no small degree responsible for the row between the American Automobile Association and the Automobile Club of America, which resulted in the Vanderbilt Cup contest event being put under the ban so far as foreign entries were concerned. In framing the rules for the affair the A. A. A. was anxious to make it possible for both the big Locomobile and the large Thomas racing car to compete, which necessitated larger limits than those permitted by the regulations of the so-called Association of Recognized Automobile Clubs abroad. The A. C. A. seized on this omission to observe the rules agreed upon across the water, as the basis of its fight, and the A. A. A. was drawn into a very unpleasant squabble through its desire to give these two cars, on which the makers had spent no inconsiderable sums, a fair chance in competition. It is also significant that both the Locomobile cars were built for the last Vanderbilt contest two years ago, when one of them made the fastest lap in the race, and was crowded out of a place at the finish chiefly because of the lack of demountable rims—a handicap which gave tremendous advantage to the foreign contenders.

With regard to the general management of the contest, full measure of credit is due to the members of the Cup Commission and the officials of the Long Island Motor Parkway for what was admittedly first class handling of the affair. At the same time, it is to be hoped that the incidents which caused the summary stoppage of the race at the very moment of the climax through laxity in handling the crowd, will never have repetition. Despite the repeated assertion that no outsiders were to be admitted within the Parkway enclosure, the course was overrun during the entire contest. Local deputies, as usual, proved pitifully insufficient for the tasks assigned them, and that important item, the guarding of the course, was distinctly a failure. Military guards, perhaps, and certainly more rigid discipline among civilian employes must be developed before contests of this sort can become really safe either to witness or to compete in. Of the Parkway itself, no criticism can be offered. The road construction proved satisfactory, and the banking and grades failed to develop the treacherous tendencies predicted.

Legal Sanction for Injustice.

While it may be presumptive for the lay mind to question the rectitude of any approved legal decision, especially when handed down with the unanimous assent of a tribunal so high as the Supreme Bench of the State of Massachusetts, yet the adverse opinion rendered last week in the case of the Ashfield motorist who had appealed from a fine imposed for driving over a "posted" road in his own town, is, to say the least, difficult to assimilate. In a word, the opinion that selectmen, aldermen and others having direct control over country or urban highways are properly and legally empowered to close such thoroughfares to automobile traffic, means that the motorist living on such a street will be unable to bring his car to his own door, or supposing it to be on his own property, to remove it, unless an unposted back street happens to be within reach. It means that an unwholesome degree of authority is placed in the hands of those not always equipped to wield it wisely, that purely local governments are given the power to discriminate between one class of public traffic and another and that their decision in such matters is final.

Few test issues of recent adjudication have had as important bearing upon the rights and privileges of the motorist as this. The possible effect of thus establishing a right of segregation between self-propelled and other means of traffic is self-apparent. It is the same principle which has been thrashed out over and over again in connection with the enactment of automobile laws, good, bad and indifferent. The motorist on the one hand, struggling for recognition as a rightful user of the public thoroughfare; the anti-motoring element on the other, striving in opposition merely because of an ancient prejudice or the detractory influence of the minority of wild and hysterical motorists whose influence ever has been the worst possible enemy to the cause. Mark the automobile as a vehicle of transportation equal in principle and right with any other vehicle capable of following the highway, and its abuse is at once reduced to its proper level, that of an offense against the precepts of decency—in other words, a plain breach of the peace. Define it as a thing apart, subject to special restrictions and open to objections based on superficial

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or whimsical analyses, and its status must remain subject to special privilege, and special restriction.

The justice of the finding that a legislature which has the accepted right to restrict the speed of automobiles also has the right to limit their use in other respects, is beyond question. That it also may delegate to other and lesser bodies certain of its powers in this respect is a conclusion undeniably justified. The failure of this attack upon the constitutionality of the practice of allocating such powers either to state or local bodies, however, is of far more than local significance. The special provision to which it accedes might be of considerable importance and utility at times and under certain extraordinary circumstances. But its indiscriminate use is to be deplored and even feared. It is greatly to be hoped that the door thus set open will not provide ingress for a growing restraint upon the legitimate motorist which in some localities already has gone hopelessly beyond its reasonable limits.

Fortifying the Brakes.

In the concerted movement for the improvement of braking efficiency which has been in progress for the last year or two it is rather surprising to note that designers almost without exception have overlooked one rather important point, and that in the more modern braking systems a useful feature which was perhaps accidental to their predecessors has been overlooked. Despite the advantages of equalizing the application of the bands upon opposite driving wheels, it is noteworthy that with most such contrivances the breaking down of one side of the system involves the disablement of the other. While the probability of accident through the breakage of one of the shoes is not very great, especially where two full sets of brakes are employed, still the very fact that the average driver regards his brakes as being absolute duplicates, is sufficient evidence that both should be made as reliable as possible. For should one set become disabled the full burden falls upon the other end in the absence of proper devices to prevent it, the yield of one of these brakes would mean entire loss of control.

The usual method of brake compensation by means of a balance beam is useful only to the extent of equalizing the power applied to the bands. Beyond this, differences in the adjustments of the two brakes, or differences in the condition of the working surfaces, involve an unequal application of the retarding force. On this account it was at one time proposed to apply a different method of equalization by placing the differentiating medium between the two anchor points rather than between the two points of application. Aside from its inherent advantages in other respects, such an arrangement would be of service in providing against the entire cutting adrift of one brake when the other gives way.

With the ordinary method of application it is difficult to devise means of providing against this contingency. Indeed the only really effective method would be to arrange stops for limiting the movement of the arms of the equalizer, placing them in such a position that they would not interfere with its movement so long as the two brakes were evenly applied. In the event of a failure on one side, with such an arrangement, the stop on the disabled side would become a fulcrum point about which the beam would swing in applying the other. A little longer travel for the lever or pedal would be required in this case, but to an amount which could be provided for readily enough. It may be that in some of the many arrangements now in use this principle is developed, accidentally or otherwise, but so far as is known such is not the case. At all events no such feature ever has been brought out as a talking point.

COMING EVENTS

October 31, Philadelphia, Pa.—Automobile Club of Philadelphia's sixth annual tour for the Brazier Cup.

November 2, St. Louis, Mo.—Manufacturers & Dealers Association hill climb, Solomon's hill.

November 3, Hartford, Conn.—Hartford Automobile Club's 24 hours race.

November 7-8, New Orleans, La.—Two days' race meet.

October 31, Dayton, O.—Race meet, State fair grounds.

November 25, Savannah, Ga.—Automobile Club of America's 200 miles light car race.

November 26, Savannah, Ga.—Automobile Club of America's (New York), 400 miles race.

November 27, Denver, Col.—Colorado Industrial Exposition Association's race meet. Overland Park track.

December 31-January 7, New York City—American Motor Car Manufacturers' Association's annual show in Grand Central Palace.

January 16-23, New York City—Association of Licensed Automobile Manufacturers' annual show in Madison Square Garden.

January 23-30, Philadelphia, Pa.—Philadelphia Automobile Trade Association's annual show.

February 6-15, Chicago, Ill.—National Association of Automobile Manufacturers, Coliseum and First Regiment Armory.

February 27-March 3, Hartford, Conn.—Automobile Dealers' Association show.

To Race for Brazier Cup October 31.

Philadelphia, Pa., is having its full share of motoring events this fall, the next in line being the sixth annual run of the Automobile Club of Philadelphia for the Brazier Cup, which is scheduled for Saturday, October 31. The affair is to be run strictly within the speed limits of the various boroughs and townships through which it passes and contestants will be obliged to adhere to the time schedule mapped out. The course is roughly, a rectangle, starting at Broad and Walnut streets and running west through Lansdowne, Aldan, Swathmore, Wallingford and Media, then north through Devon and Valley Forge; switching eastward to Bridgeport, Norristown and Ambler, thence back to the Quaker City, via Chestnut Hill and Germantown. The distance will be approximately 65 miles.

New Rules Reduce Size and Weight.

Announcement was cabled from Paris last week of the new rules in the matter of racing limitations for 1909, made by the International Congress of Recognized Automobile Clubs. The change has to do with the reduction of the size of cylinder bore and weight of the car and was recommended some time ago by the Italian Club and endorsed by other foreign clubs.

The new rules provide for a maximum bore of 130 mms. or 5 1-10 inches, and a minimum weight of 900 kilos, or 1,984 pounds. This cuts down the size of four cylinder racing motors one inch, and the minimum weight some 600 pounds.

Fort George Hill Climb Off Again.

Because of an objection on the ground that it might interfere with the prerogatives of voters, the much-postponed Fort George hill climb which the New York Trade Association has been endeavoring to promote, has again been set over. After all arrangements had been made for the contest and entries invited, John T. Dooling, president of the State Board of Elections, called the attention of Mayor McClellan to the fact that the competing cars would pass one of the polling booths, and that no little confusion might be expected to result in consequence. The immediate result was the abandonment of the date.

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ROBERTSON CAPTURES THE CUP

American Car "Lifts" Vanderbilt Trophy for the First Time in History, the Winner Sending His Locomobile Over the New Long Island Course at Average Speed of 64.3 Miles per Hour—Seventeen Competitors in Hotly Contested Race, Free From Serious Accident—Immense Crowd Present, Despite Unfavorable Weather—Contest Again Cut Short by Thronging of Course After Winning Car Finishes.

RESULTS OF THE FOUR CONTESTS FOR THE VANDERBILT CUP.

Year.	Winner.	H.P.	Car.	Length of course.	Winner's net time.	Winner's Av.m.p.h.	Fastest lap. m.p.h.
1904	Heath	90	Panhard	284.4	5:26:45	52.22	70.9
1905	Hemery	80	Darracq	283.0	4:36:08	61.43	66.9
1906	Wagner	100	Darracq	297.1	4:50:10⅖	65.13	67.3
1908	Robertson	90	Locomobile	257.9	4:00:48⅕	64.30	69.49



LYTLE AND ROBERTSON POSE



ROBERTSON FINISHES WHILE IRISH VOLUNTEERS HOLD BACK THE CROWD

Cynical and superficial as the sharp-tongued old gentleman may have been in declaring that the Vanderbilt cup race is chiefly valuable in "giving half of New York an excuse to sit up all night," yet he hit upon one of its most striking phenomena for his commentary, but one which properly interpreted signifies the astounding degree of popular interest in the event, which has taken the character of a settled institution. Variously estimated at from 200,000 to 500,000 people, the crowd which saw the fourth race for the Vanderbilt cup, on Saturday, the 24th inst., got a full reward for all losses of sleep and expenditures of money, in a sporting contest that was rich with the qualities of speed, picturesqueness, and keen competition, and which resulted in a brilliant victory for an American car.

Driving a sharp, decisive race, in his 90 horsepower Locomobile, George Robertson secured a signal victory over Herbert Lytle, winner of the Long Island Sweepstakes of two weeks before, who drove an Isotta car with even greater steadiness, though less brilliancy. Robertson made the fastest lap times in all but the fourth, fifth and sixth laps, in addition to which he made the fastest lap in the race. Lytle, on the other hand, held either second or third place for the entire contest and handled his car with a precision which was remarkable.

The Locomobile figured as No. 16, and was the thirteenth to get away from the

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SUMMARY OF RACE SHOWING ELAPSED TIME BY LAPS.

No.	Driver.	Car.	H.P.	1 lap. 23.46 Miles.	2 laps. 46.92 Miles.	3 laps. 70.38 Miles.	4 laps. 93.84 Miles	5 laps. 117.30 Miles.	6 laps. 140.76 Miles.	7 laps. 164.22 Miles.	8 laps. 187.68 Miles.	9 laps. 211.14 Miles.	10 laps. 234.60 Miles.	11 laps. 258.06 Miles.
16	George Robertson	Locomobile	90	20:54	43:07	63:24	89:14	111:37	132:07	152:43	173:19	195:41	216:36	240:48⅕
6	Herbert Lytle	Isotta	60	21:52	43:26	65:15	87:19	110:47	132:47	154:52	176:48	198:36	220:46	242:36⅖
5	W. C. Luttgen	Mercedes	90	23:32	49:16	72:10	94:34	116:50	139:15	166:42	188:49	216:14	243:30	*270:35
12	George Salzman	Thomas	115	22:04	46:17	68:54	91:25	113:58	136:47	159:51	201:41	225:34	248:11	†
1	James Florida	Locomobile	90	23:10	45:23	67:36	93:44	115:22	143:39	165:15	191:14	227:23	249:07	*271:10
3	E. Stricker	Mercedes	120	22:25	44:23	66:19	88:42	110:20	135:04	159:48	181:15	210:57	Caught fire.	
2	Albert Denison	Knox	50	24:33	56:34	81:42	107:19	141:36	167:20	195:18	225:56	253:09	†	
20	W. Bourque	Knox	40	27:15	52:06	77:32	103:06	135:41	163:47	195:00	222:20	†		
8	J. Seymour	Thomas	60	31:43	63:43	95:05	132:56	160:29	189:16	215:23	243:01	†		
4	Willie Haupt	Chadwick	90	21:53	43:22	64:49	86:10	107:46	131:54	188:00	244:15	†		
18	Foxhall Keene	Mercedes	120	53:25	76:17	98:35	120:45	Caught fire and withdrew.						
7	J. B. Ryall	Matheson	60	26:13	65:59	97:56	Caught fire and withdrew.							
17	Lewis Strang	Renault	115	59:49	82:47	106:45	Burned out clutch and withdrew.							
11	Cyrus Patschke	Acme	90	23:23	48:06	Broke cam shaft at Central Park; withdrew.								
9	E. J. Kilpatrick	Hotchkiss	90	22:43	68:13	Connecting rod bearing seized at Central Park; withdrew.								
15	L. Chevrolet	Matheson	90	22:09	Cracked cylinder at Jericho; withdrew.									
19	Howard Gill	Thomas	115	26:45	Burned out clutch and broke gear at Bethpage.									
10	L. Pouget	Brasier	90	Broke steering gear on way to starting line; did not start.										

TABLE SHOWING TIME BY LAPS, AVERAGE MILES PER HOUR AND AVERAGE TIME PER MILE

No.	Driver.	1st lap.	2d lap.	3d lap.	4th lap.	5th lap.	6th lap.	7th lap.	8th lap.	9th lap.	10th lap.	11th lap.	Average miles per hour.	Average time per mile.	Fastest lap.	Av. miles per hour on fastest lap.	Av. time per mile on fastest lap.
16	Robertson	20:54	22:13	20:17	25:50	22:23	20:30	20:36	20:36	22:22	20:55	24:12⅕	64.3	55.76	20:17	69.5	51.80
6	Lytle	21:52	21:34	21:49	22:04	23:28	22:00	22:05	21:56	21:48	22:10	21:50⅖	63.7	56.50	21:33	65.4	55.05
5	Luttgen	23:32	25:44	22:54	22:24	22:16	22:25	27:27	22:07	27:25	27:16		57.3	62.82	22:16	63.3	56.88
12	Salzman	22:04	22:13	22:37	22:31	22:33	22:49	23:04	41:50	23:53	22:37		56.7	63.48	22:04	63.8	56.43
1	Florida	23:10	22:13	22:13	26:08	21:38	28:17	21:36	25:59	30:09	21:44		56.6	63.60	21:40	64.9	55.47
3	Stricker	22.25	21:58	21:56	22:23	21:38	24:44	24:44	21:27	29:42			60.0	60.00	21:27	65.6	54.88
2	Denison	24:33	32:01	25:08	25:37	34:17	25:44	27:58	30:38	27:13			50.0	72.00	24:33	56.7	63.49
20	Bourque	27:15	24:51	25:26	25:34	32:35	28:06	31:13	27:20				50.5	71.28	24:51	56.6	63.60
8	Seymour	31:43	32:00	31:22	37:51	27:33	28:47	29:07	27:38				46.0	78.26	27:38	50.9	60.73
4	Haupt	21:53	21:29	21:27	21:31	21:36	24:08	56:06	56:15				45.9	78.43	21:27	65.6	54.88
18	Keene	53:25	22:52	22:18	22:10								46.0	78.35	22:10	63.5	56.69
7	Ryall	26:13	39:46	31:57									46.0	78.35	26:13	53.6	67.26
17	Strang	59:49	22:58	23:58									40.0	90.00	22:58	61.3	58.73
11	Patschke	23:23	24:43										60.0	60.00	23:23	60.3	59.70
9	Kilpatrick	22:43	45:30										62.0	58.06	22:43	62.0	58.06
15	Chevrolet	22:09											63.6	56.60	22:09	63.6	56.60
19	Gill	26:45											52.6	68.44	26:45	52.6	68.44

SPECIFICATIONS OF COMPETING CARS WITH NAMES OF ENTRANTS AND DRIVERS.

No.	Driver.	Car.	H.P.	Entrant.	Bore.	Stroke.	Clutch.	Wheelbase.	Tires.
1	Florida	Locomobile	90	Locomobile Co. of Amer.	7.25	6.25	Cone	110	Diamond
2	Denison	Knox	40	Knox Auto Co.	5.50	5.50	Three-plate	106	Fisk
3	Stricker	Mercedes	120	Robert Graves	6.68	5.9	Lindsay	107	Michelin
4	Haupt	Chadwick	90*	Chadwick Engr Wks.	5	6	Metal cone, cork inserts	112	Michelin
5	Luttgen	Mercedes	120	W. K. Vanderbilt, Jr.	6.68	5.9	Lindsay	107	Michelin
6	Lytle	Isotta	60	C. V. Brokaw	5.7	4.72	Multiple disc	118	Michelin
7	Ryall	Matheson	57.7	Matheson Motor Car co.	6	6	Multiple disc	117	Michelin
8	Seymour	Thomas	80	E. R. Thomas Co.	6	5.7	Three-plate	112	Michelin
9	Kilpatrick	Hotchkiss	120*	Hotchkiss Import Co.	7	6.28	Cone	104	Michelin
10	Pouget	Brasier	96	H. Payne Whitney	6.39	5.5	Cone	104	Michelin
11	Patschke	Acme	60*	Cordner & Flynn	4.99	5.5	Cone, cork inserts	108	Diamond
12	Salzman	Thomas	115	E. R. Thomas Co.	6.875	5.5	Three-plate	104	Michelin
15	Chevrolet	Matheson	85.7	Matheson Motor Car Co.	7.25	6	Multiple disc	117	Michelin
16	Robertson	Locomobile	90	Locomobile Co. of Amer.	7.25	6.25	Cone	110	Michelin
17	Strang	Renault	115	Paul Lacroix	6.25	6	Int. Expand	112	Michelin
18	Keene	Mercedes	120	Foxhall Keene	6.68	5.9	Lindsay	107	Michelin
19	Gill	Thomas	115	E. R. Thomas Co.	6.875	5.5	Three-plate	104	Michelin
20	Bourque	Knox	40	Knox Auto Co.	4.875	4.75	Three plate	102	Fisk

TABLE SHOWING POSITIONS OF CONTESTANTS AT END OF EACH LAP.

No.	Driver.	1st lap.	2d lap.	3d lap.	4th lap.	5th lap.	6th lap.	7th lap.	8th lap.	9th lap.	10th lap.	11th lap.
16	Robertson	1	1	1	4	4	2	1	1	1	1	1
6	Lytle	2	3	3	2	3	3	2	2	2	2	2
5	Luttgen	10	8	7	7	7	6	6	4	4	3	
12	Salzman	4	6	6	5	5	5	4	6	5	4	
1	Florida	8	5	5	6	6	7	5	5	6	5	
3	Stricker	6	4	4	3	2	4	3	3	3		
2	Denison	11	9	9	9	9	9	9	8	7		
20	Bourque	14	8	8	8	8	8	8	7			
8	Seymour	15	10	10	11	10	10	10	9			
4	Haupt	3	2	2	1	1	1	7	10			
18	Keene	16	13	12	10							

No.	Driver.	1st lap.	2d lap.	3d lap.
7	Ryall	12	11	11
17	Strang	17	14	13
11	Patschke	9	7	
9	Kilpatrick	7	12	
15	Chevrolet	5		
19	Gill	13		

† Running when race was called off.
* Unofficial time—finished after race was officially called off.
* Six Cylinders.

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LYTLE, ISOTTA, STARTING

line. Lytle's car was No. 6, so that he finished first. The 8 minutes, 11⅘ seconds which elapsed after the end of Lytle's race and before Robertson finished, were fraught with the most intense excitement—especially at the grandstand, where it was known that the outcome of the contest depended on the performance of the Bridgeport car during those last precious moments.

Early in that same lap, a wild skid had delayed Robertson by 2 minutes or more at Plainview, while he replaced a tire, and rumor had been busy building all sorts of thrilling and time-exhausting accidents about a very bare substance of known fact. When at length he came flying down the long stretch to the finishing line, therefore, the enthusiasm of the crowd knew no bounds. For a brief space the fate of what amounted to an international race had hung in the balance, and the relief of the American victory and the Italian defeat caused an overflow of the stands and the course which swept the awkward military guard completely off its feet, swamped the constabulary and threatened the following racers with the awful fate which has marred the conclusion of each previous contest for the Vanderbilt Cup.

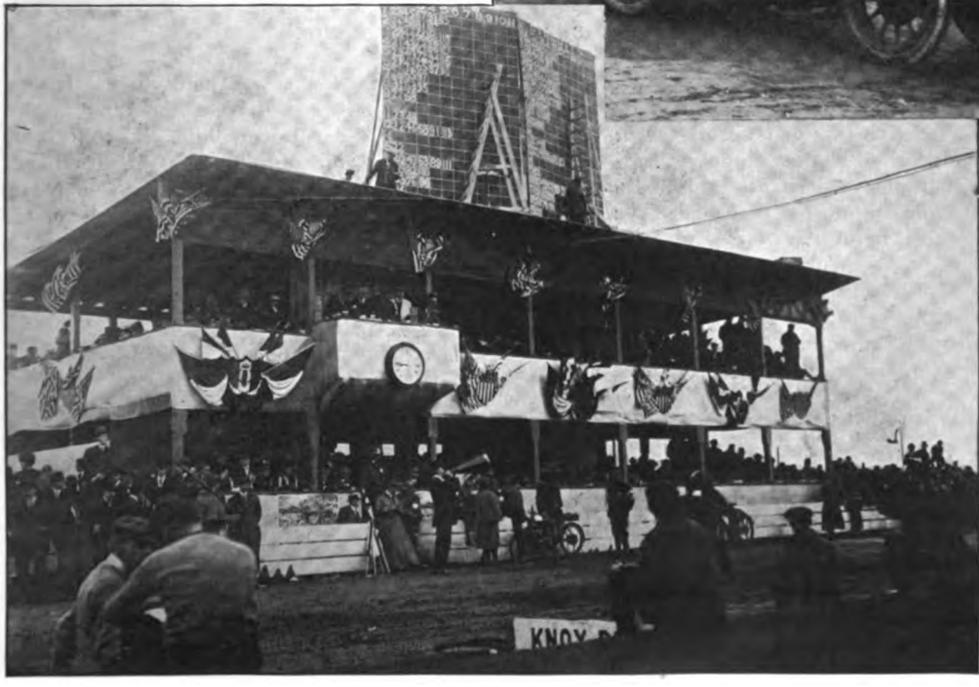
Not only at the grandstand, but at all points on the course, the people surged excitedly into the path which the cars were



STRANG'S RENAULT BALKS

following. That no fatalities occurred was a marvel. Such an inrush of foolhardy humanity could not fail to result in accident, however, and the incident which caused the abrupt termination of the race was a direct effect of inefficient safeguarding of the course.

The second car behind the winning Locomobile arrived just at a moment when the course was completely flooded with the overflow from both sides of the way. Oddly enough it was the other Locomobile entry with Florida at the wheel. A touring car had backed on to the course from one side, and was smothered in the crowd. An opening was made for the racing car as it bore down, but too late to give it ample room. A collision between the two machines occurred and in the confusion a youth was knocked down and sustained a broken leg. Immediately afterward Referee Van-



PRESS STAND, PETER PRUNTY WITH HIS MEGAPHONE, TIMERS BEHIND THE CLOCK, AND SCORE BOARD ON ROOF.

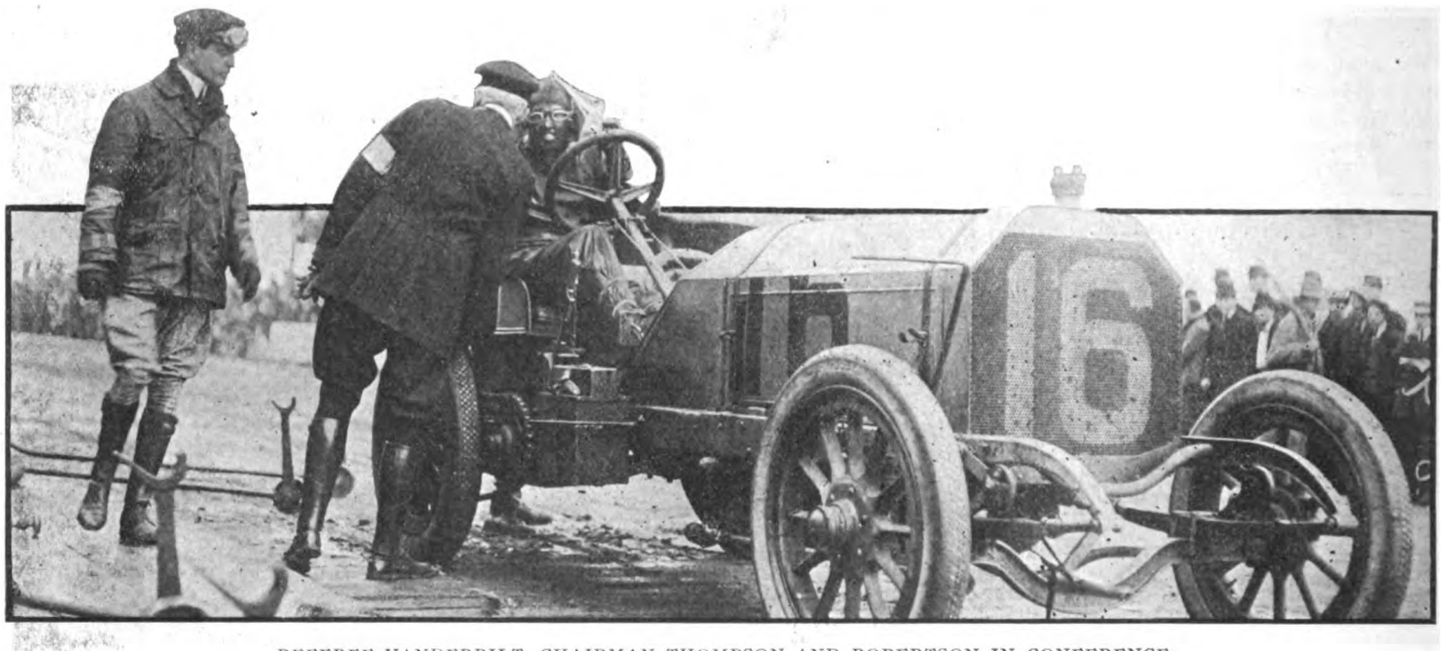
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derbilt ordered the race stopped, and Luttgen, driving Vanderbilt's own car, together with Salzman in the Thomas, were accorded third and fourth places by virtue of their existing positions in the race.

When in a race of 258 miles the first and second positions at the finish are separated by only 1 minute and 48⅕ seconds, as was the case between Robertson's Locomobile and Lytle's Isotta, it is evidence that drivers, owners and spectators had plenty of thrills as the fortunes of the different cars varied. Robertson made the 11 laps in 4 hours and 48⅕ seconds, at an average rate of 64.3 miles per hour, while Lytle covered the distance in 4 hours, 2 minutes, 36⅗ seconds. Neither in the fastest lap of the race nor in the average for the whole distance, however, did the winner equal the best records of previous Vanderbilt races. In 1904 the Panhard, driven by Heath, made its fastest lap at 70.9 miles, while Robertson's fastest lap was at 69.49, and in 1906 Wagner covered 297.1 miles at an average rate for the whole race of 65.13 miles per hour. Weather conditions accounted in no small degree for the fact that records were not broken, as the leaders drove to the limit of what the wet and slippery course would stand.

Of the seventeen actual starters, eleven were of American manufacture and six of foreign make. At least three of the latter were entered by individual owners desiring to contribute to the success of the event, while the others had trade backing. The list was very representative, including besides the American entrants, the products of Germany, France and Italy. Two of the three Mercedes dropped out, as did the Hotchkiss and the Renault, so that the foreign showing exhibited no superiority to that of the American entrants, as out of eleven of the latter, seven were running when the race was called off.

HOW THE GREAT RACE WAS RUN AND WON



REFEREE VANDERBILT, CHAIRMAN THOMPSON AND ROBERTSON IN CONFERENCE

Because of the rain and heavy grayness of the morning the start was set for 6:30, as it would have been hard to determine the "day break" which was to have marked the beginning of the race. Most of the cars began to arrive from their quarters early, booming along the course in irregular cannonades and sputts of fire from their exhaust. To make way for them the sleepy and otherwise uncertainly gaited Irish volunteers, with light blue overcoats and muskets, were set to work pushing the people off the roadway, and after considerable activity and the punching of a few offenders with gun butts the crowd was compressed sufficiently to the sides to leave the space at the line fairly clear.

As the time approached, Starter Wagner lined the machines up in numerical sequence, with Florida's No. 1 Locomobile on the tape. For each car, Wagner marked off the last ten seconds by calling them out with an accompanying movement of the hand, and with the final word "Go!" giving the driver a slap and a shove on the shoulder When Florida shot away he was given a hearty cheer, and he went spinning up the stretch into the distance as the first to take chances with the slippery and uncertain conditions which the rain had developed. At one minute intervals thereafter, the successive numbers were sent off, generally with a momentary whirling of the rear wheels which sent out a shower of sparks as the steel studs of the non-skid tires ground the cement. The first break in the regular order came after the No. 9 Hotchkiss had been started, as the No. 10 Brasier, entered by Harry Payne Whitney, did not appear. Word came that its steering gear had been broken on the way to the course and that it would not start. To keep the calculations easy, the No. 11 Acme, which came next, was held two minutes, for the starting time originally assigned to it. The No. 12 Thomas followed one minute after.

In deference to superstition, No. 13 had not been assigned to any car, and No. 14, the B. L. M., had been withdrawn, so that No. 15, Matheson, was held three minutes after its predecessor, that the tally might be simple. The Locomobile, No. 16, driven by Robertson, was due one minute thereafter, and as it came up to the line there was a sustained cheer for the favorite. Oddly enough, Robertson was the thirteenth starter, but subsequent events proved that whatever hoodoo resided in this circumstance was very trifling. Robertson got away in splendid style and the crowd turned its attention to Strang, who was the pilot of the No. 17 Renault, which was to follow. Strang hardly got to the line before his engine stopped, and as Wagner began counting the seconds there were desperate efforts to start it again, but without avail. While three excited Renault handlers tugged at the crank Strang sat patiently waiting for the engine to take up its thundering. When the ten seconds had been counted off and "Wag" had given his concluding slap, Strang futilely juggled with a side lever, but the car was ridiculously inert and silent. Furthermore, there was no one at the crank

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VIEW OF GRANDSTAND AT FINISH—CROWD SURGING OVER THE COURSE

at the moment and the driver looked much alone and helpless. The machine was finally pushed over the starting line, and after some more tugging at the crank it was pushed back to the Renault supply pit where it remained, while Strang and his mechanic fumed and fussed over it for half an hour.

Foxhall Keene, with his No. 18, Mercedes, waved his compliments to his friends in the boxes and was rewarded with a demonstration of enthusiasm and fluttering handkerchiefs from that quarter. His engine was missing badly when he began his race, however, and his penchant for smashing telegraph poles and for misadventure generally made it a practical certainty that he would not finish. Another amateur, described as a young Baltimore millionaire, appeared in the person of Gill, the driver of No. 19, Thomas, but he attracted little attention as a probable winner. The Knox, No. 20, concluded the list of 17 starters, and when it was out of sight, all eyes were turned to the west to watch for the first car around.

In about four minutes the cry of "Car coming!" arose, and a lively speck was seen to skip over the rise of the distant bridge and skim down the curves into the straightaway stretch leading past the grandstand. As it entered the stretch and came head on, it grew with astonishing rapidity and showed a radiator front and wheels. A vertical white streak down the center of the swaying radiator proclaimed it Florida's No. 1 Locomobile, and the car went sweeping by at a speed that brought a howl of delight from the spectators. Another car was soon sighted, closely followed by still a third, and as they came flying toward the finish of their first lap they proved to be the No. 3 Mercedes, driven by Stricker, and the No. 4 Chadwick, piloted by Haupt, both of which had passed the No. 2 Knox, with Denison at the wheel. The Knox was next, however, and while it was going at no mean speed, it was rapidly overtaken by Lytle in the No. 6 Isotta, which flashed by the stand in pursuit.

Following these five cars, came William K. Vanderbilt, Jr.'s Mercedes, the No. 5, driven by Luttgen, which had been passed by the Isotta. Then a string loomed in sight, consisting of Kilpatrick's No. 9 Hotchkiss, Ryall's No. 7 Matheson, Salzman's No. 12 Thomas, and Patschke's No. 11 Acme.

When Robertson in the No. 16 Locomobile appeared, there was great excitement, as it was evident that he had come around faster than any of the other cars, but the cheering which that fact was about to elicit when he should go by, was suddenly changed to groans of concern when his mechanic was seen to wave to the supply men in the pits as the machine neared the stand and Robertson jammed on the brakes and came to a stop after crossing the line. He called for water and the radiator cap was quickly removed and a funnel inserted, into which a pail of water was promptly poured. The pail emptied, the funnel was thrown aside and the hose from the water pipe line substituted till the radiator was full, the cap was screwed on again and Robertson was off before two minutes had elapsed. The postponed cheer broke out spontaneously as he got away, and was followed by a big demonstration when it was announced that his first lap had been made in 20:54, faster than either Lytle's Isotta or Haupt's Chadwick, which had made the round in 21:52 and 21:53, respectively. It was feared by the crowd, however, that Robertson's stop for water had indicated a leaking radiator, until it was remembered that the car's engine had run steadily for over ten minutes while the machine was waiting behind the starting line, and had probably boiled away quite a bit of the radiator water at that time, due to a lack of wind pressure

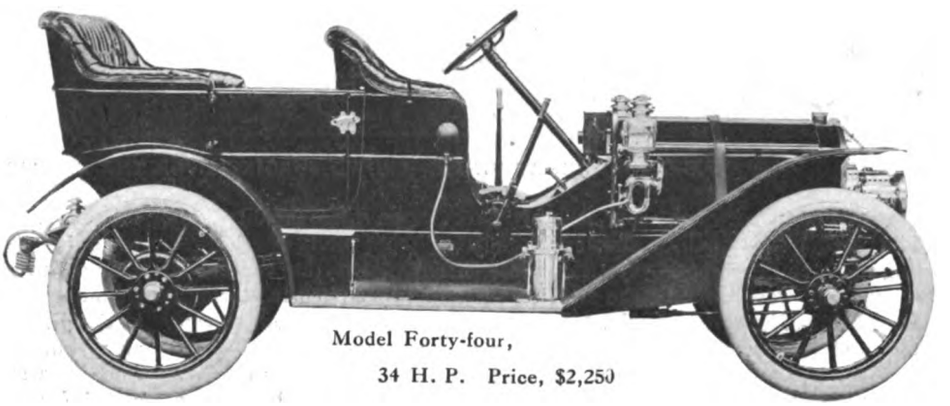


CARS PARKED BEHIND GRANDSTAND—CAN YOU COUNT THEM?

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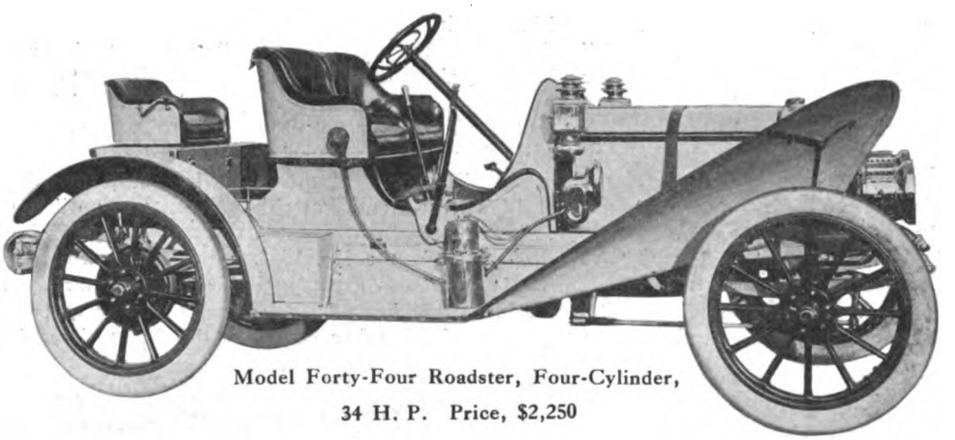
Rambler ~1909

Five Models, $1,150 to $2,500



Model Forty-four,
34 H. P. Price, $2,250

THE offset crankshaft, straight-line drive, safety starting device, large brakes, big wheels and tires — these features were the vital factors in the Rambler success of the season just past. Its performance in the hands of every Rambler owner has surely confirmed this. These features increase the power, flexibility, and efficiency, assure safety, enhance the appearance of the car, improve the riding qualities, provide unusual clearance, and minimize tire trouble and expense



Model Forty-Four Roadster, Four-Cylinder,
34 H. P. Price, $2,250

Specifications—Model Forty-four Touring Car and Roadster

Wheel Base—Touring, 112"; Roadster, 110". **Wheels**—36".
Rims—Midgley Universal.
Tires—36 x 4 Goodrich Quick Detachable; options Hartford-Dunlop, Diamond, G & J, and Fisk clincher.
Springs—Front, semi-elliptic; rear, triple action, 52 inches long.
Engine—Four vertical cylinders.
Valves—Overhanging, all on one side.
Crank Case—One piece, side opening.
Ignition—Jump spark; storage battery. Bosch magneto, $150 extra.
Transmission—Selective type, adjustable roller bearings.
Drive—Shaft, straight line.
Brakes—Two, on rear hubs; 400 square inches surface.
Body—Touring, five passengers; Roadster, three or four passengers.
Equipment—Two lens mirror head lights, two square side lamps, and tail light, generator, or uncharged gas tank, horn, tools, etc.

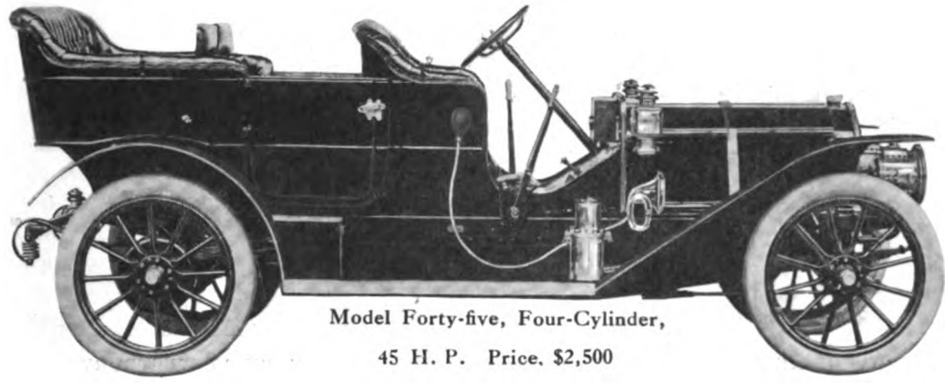
Thomas B. Jeffery & Company

Kenosha, Wisconsin

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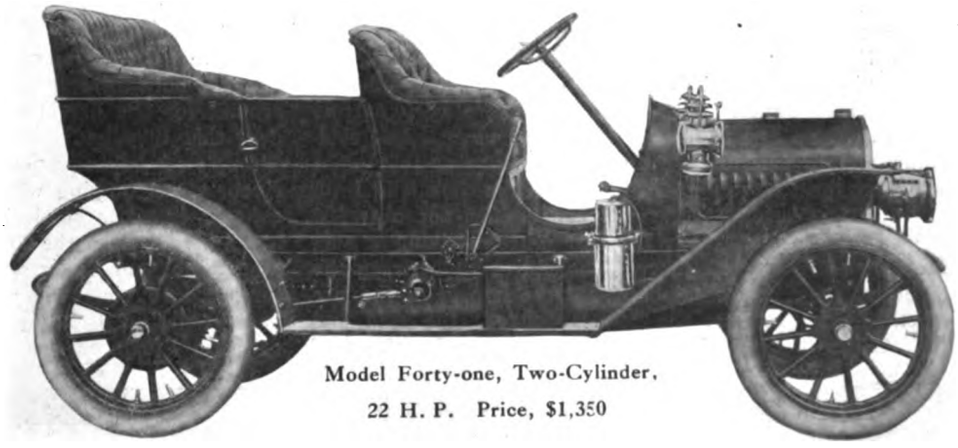
Rambler ~1909

Five Models, $1,150 to $2,500



Model Forty-five, Four-Cylinder,
45 H. P. Price, $2,500

—in addition to certain refinements for the owner's comfort and convenience, the new Rambler features for 1909 include the Rambler spare wheel with inflated tire (extra charge), triple action springs, adjustable steering column, provision for magneto, convenient brake adjustment, and adjustable clutch spring. One high-power, seven-passenger model as illustrated above, with 123-inch wheel base and tire size 36 x 4½ inches, will be added to the Rambler line for 1909. Other details of this model similar to Model Fourty-four.



Model Forty-one, Two-Cylinder,
22 H. P. Price, $1,350

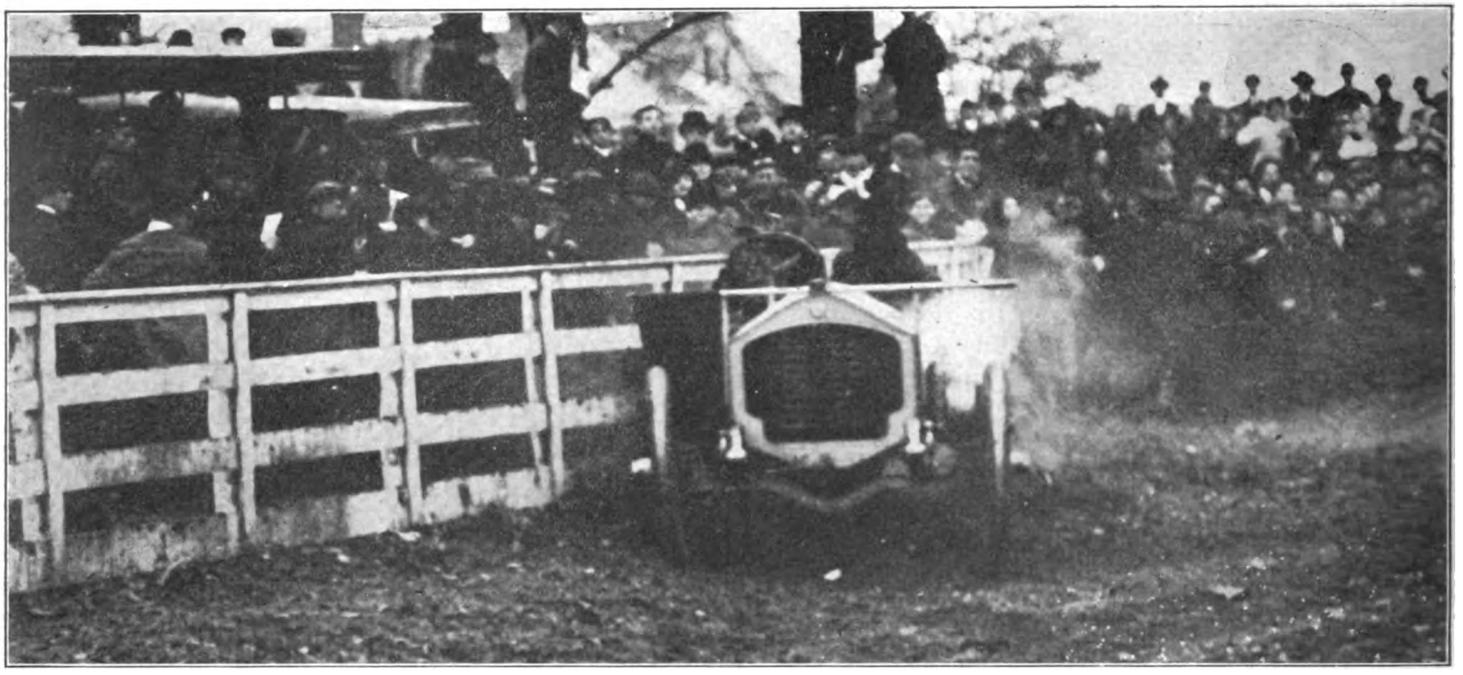
Specifications—Model Forty-one

Body—Detachable tonneau; capacity, five or two passengers.
Wheel Base—106". **Wheels and Tires**—34 x 4".
Motor—Double opposed, entirely enclosed, with transmission gear, making unit power plant.
Power—22 H. P. **Cooling**—Water, thermo-syphon system.
Lubrication—Mechanical force-feed oiler.
Ignition—Jump spark, current from six volts, sixty ampere storage battery.
Transmission—Planetary, two speeds forward, and reverse.
Clutch—Multiple disc.
Equipment—Two gas head lights with large separate generator, oil side and tail lights, exhaust signal, pump, tools, and tire kit.
Price—$1,350 with tonneau, $1,250 without tonneau, and with torpedo deck.
Torpedo Deck extra—$25. **Top extra**—$75.

Model Forty-seven, Two-Cylinder Runabout, 22 H. P. Price, $1,150 and $1.200

Thomas B. Jeffery & Company
Kenosha, Wisconsin

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WHERE PATSCHKE HIT THE FENCE AFTER ROUNDING SHARP TURN AT WESTBURY

through the interstices of the cooler as the car stood still. A very light radiator of special design had been fitted for the race, in order that the car might weigh in despite the extra weight of its quickly demountable tire rims. The new radiator had a more limited water capacity than the regular style.

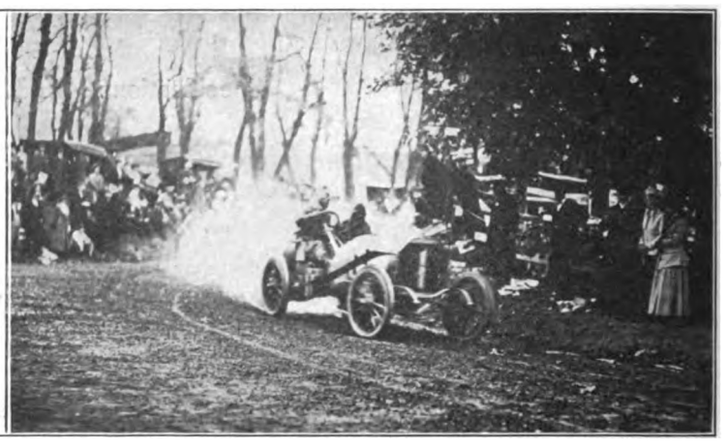
While Robertson was taking water, the Matheson No. 15, driven by Chevrolet, had passed, and the Locomobile had just got under way again when Seymour's No. 8 Thomas and Gill's No. 19 Thomas put in an appearance, trailed shortly after by Bourque in the No. 20 Knox, which accounted for the whole list, except Keene, while Strang was still wrestling with his Renault at the starting line.

Florida was first over the line in the second lap, but had Stricker's Mercedes and Haupt's Chadwick right at his heels, the two passing the grandstand together, followed at intervals by the others. Chevrolet's No. 15 Matheson retired with a cracked cylinder gasket and Gill's No. 19 Thomas burned out its clutch. Word came that Keene had had a fire, but that he was on his way again. Strang was somewhere on his first round, having started after a delay of half an hour. Fifteen were thus still in the race, but the times showed that Haupt's Chadwick, Lytle's Isotta, and Robertson's Locomobile were the three fastest cars, with Florida's Locomobile, Salzman's Thomas, Stricker's Mercedes, and Patschke's Acme all putting up a splendid race. The Acme had had a very narrow escape in the first round when it had skidded at Westbury. The turn at that point is very sharp and Patschke took it at a furious pace. His car skidded for over 100 feet, the right rear wheel striking a substantial fence. The hub went between the horizontal bars, but the impact of the tire against the boards ended the skid and Patschke headed straight out for the road again and was off before the frightened crowd could catch its breath. Quickly as the whole circumstance took place, however, it gave time for an enterprising photographer of the New York Tribune staff, Henry Steffen, to take one of those rare pictures which crystalizes the excitement of such a moment and shows what really happened. The picture is reproduced herewith, and indicates what a close call both Patschke and the crowd had.

Before the third lap was completed by the leaders, both Strang and Keene had got around for the first time, but it was evident that they had no chance of winning. Strang's car bobbed around like a cork, and Keene's was limping with a very irregular exhaust from its smoked-up bonnet which had suffered from the fire, as had Keene's moustache and eyebrows. Florida again jumped into view with the others at his back at the finish of the third, but stopped at the pits for a change of a right rear tire,

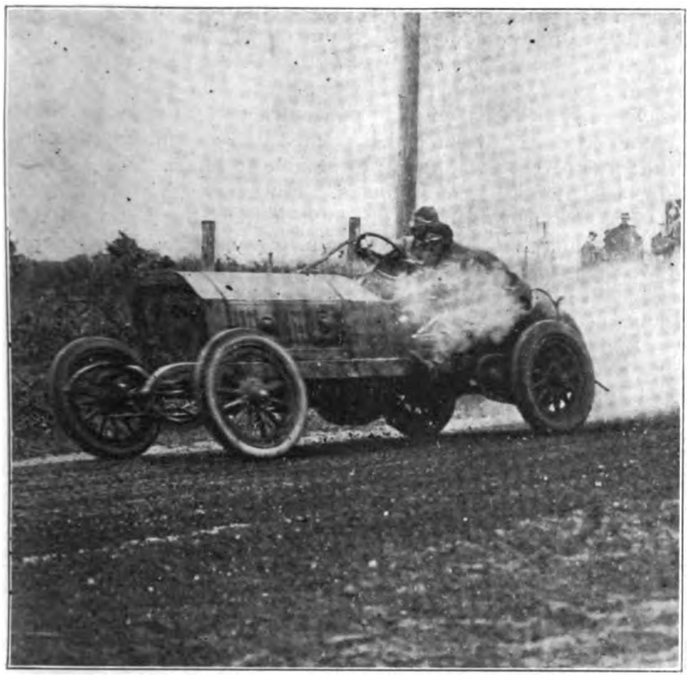


HAUPT TAKING WIDE TURN AT WOODBURY

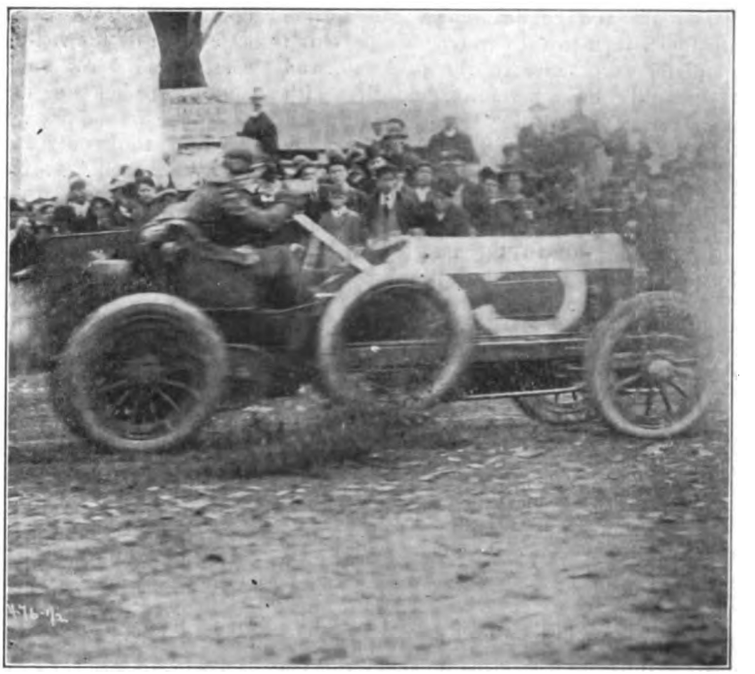


FLORIDA TAKING CLOSE TURN AT WOODBURY

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STRICKER'S MERCEDES IN A LIVELY SKID



ROBERTSON GOING "GREAT GUNS" ON STRAIGHT STRETCH

while the No. 4 Chadwick and the No. 3 Mercedes went dashing by. Robertson soon came tearing along like a whirlwind, completing the lap in 20:17, which proved the fastest time of the day, being at the rate of 69.3 miles per hour. Nor had the Chadwick and the Isotta stopped to pick flowers by the wayside, and most of the other cars were running regularly and well, with the exception of the Acme and the Hotchkiss, both of which retired at Central Park, the former with a broken cam shaft and the latter with a seized connecting rod bearing, which broke the connecting rod and plunged it through the crank case.

The fourth round gave the Chadwick the lead in point of elapsed time, with the Isotta second, Stricker's No. 3 Mercedes third, and Robertson's Locomobile fourth. It was Robertson's slowest lap, his time being 25:50, which left him 3 minutes and 4 seconds behind the leader. Strang retired from the race at about this time, and gave vent to his feelings by coming around to the grandstand and indulging in numerous cigarettes and some verbal wails about his hard luck. He attracted considerable attention until Ryall drove up, his Matheson bursting into flames as he stopped. Ryall usually arranges to break a leg and a collar bone when he is participating in a big race, but on this occasion found that a burning car will create quite as much commotion. While women screamed and men looked scared, some sensible person grabbed a fire extinguisher from the front of the stand and promptly put out the conflagration. When the temperature had cooled down to a point where he could work on the machine, Ryall attempted to repair the damage and get started again, but he was not able to make a go of it.

With six cars out of it, the fifth lap had eleven contestants for a while, but Keene's Mercedes needed a fire brigade so often that he finally had to withdraw. Again Haupt's Chadwick was the leader in the elapsed time, with Stricker's Mercedes second, Lytle's Isotta third and Robertson's Locomobile fourth. These four were rapidly leaving the other six cars, of which latter Salzman's No. 12 Thomas was the leader, with Florida's Locomobile and Luttgen's No. 5 Mercedes following on even terms. The two Knox cars were running well, but their comparatively low power put them at a disadvantage in speed, while Seymour's No. 8 Thomas was trailing leisurely.

In the sixth lap Robertson set out to gain the lead. He slammed ahead in the most reckless fashion, cavorting around the turns with terrifying skids and opening up to the limit on the straight stretches. So wild were some of his skids that he was slowed down considerably in recovering, but as it was he made the round in 20:30, at an average rate of 68.6 miles per hour. Crossing the last bridge on the way to the



ROBERTSON'S LOCOMOBILE JUMPS THE BRIDGE AT WESTBURY (Copyright, R. Tebbs)

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grandstand and coming down the decline into the S turn to the stretch, his car slung completely crosswise of the parkway, and it was only by marvelous dexterity with the steering wheel that he saved himself from plunging into the deep side ditch. He had previously taken a bridge rise side by side with Salzman's Thomas, the two cars banging hubs while at the highest point and both plunging down the descent in such close proximity as to give the appearance of almost certain smash-up. But the Locomobile came through safely, and at the end of the lap Robertson had overcome the lead of both Lytle and Stricker and was second only to Haupt in the Chadwick.

Ignition trouble afflicted the Chadwick in the seventh round, and it was only after considerable delay that parts from its two magnetos were combined to form a new one that would work successfully. The delay cost the car its lead, which it had to yield to Robertson's Locomobile. Lytle and Stricker were second and third, in elapsed time, with Salzman next, Florida fifth, Luttgen's No. 5 Mercedes sixth, and the Chadwick seventh.

Further trouble came to the Chadwick in the eighth round, when its right drive chain broke. A roadside repair was necessary. Although all hope of victory had gone glimmering with this mishap, Haupt and his mechanic gamely hurried the work and started going again as soon as they could, leaving fragments of a battered chain case lying by the roadside. Meanwhile Robertson reeled off another round in 20:36, duplicating his time of the seventh lap. Lytle's time was 21:56, while Stricker, in third position, took only 21:27 for the distance. In the next fastest bunch, Luttgen's Mercedes took the lead over Florida's Locomobile by doing the lap in 22:07 as against Florida's 25:59, while Salzman's Thomas dropped back.

Lytle gained slightly in the ninth lap, reducing Robertson's lead to less than three minutes. Stricker in his Mercedes was only about two minutes behind Lytle, figuring elapsed time, while Luttgen's Mercedes was fourth.

The tenth lap tempted Robertson to cut loose again, so that he made the circuit in 20:55, giving him a lead of 4 minutes and 10 seconds on Lytle. The pace was so fast that Stricker's car took fire, necessitating his dropping out after a magnificent exhibition of driving. This moved Luttgen up to third place, and Salzman held fourth position against Florida.

Everybody around the course knew when the eleventh lap commenced that the battle for first honors lay between Lytle and Robertson. Having started ten minutes before Robertson's Locomobile, the Isotta was the first to finish. If Robertson reached the tape inside the ten minutes thereafter, he was the winner. Lytle was finishing when word came that Robertson was off the course. His four minute advantage was being rapidly eaten up by the passing seconds, and the Locomobile rooters in the grandstand were consumed with anxiety to know what had happened to him and whether he was going to be able to finish. After about two minutes, however, the telephone brought information that he was back on the course again, after a tire replacement, headed at full speed for the grandstand. Watches were in almost every hand and eyes were fixed on the distant rise over the bridge where he would first come into view.

When the flagman on the bridge began waving his red signal that a car was coming, there was almost a hush over the whole vast crowd, and when it really proved to be the No. 16 Locomobile pandemonium broke loose. Restraining themselves until he was actually past, the spectators, knowing him to be the winner crowded on the course in the wake of his car and joined in one mad rush to get near him if possible when he should stop. All thought of the other cars still coming was banished, and the megaphone shoutings and the warning of constables, Irish volunteers and deputy sheriffs could not clear the course again.

Not knowing that the race was actually over, Florida came booming along at a speed which made it impossible for him to slow down in time to avoid crashing into a touring car, which with criminal stupidity



CROWDS OVERFLOWING THE COURSE AT WESTBURY DURING THE RACE

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had been driven out in front of the grandstand. David Shuh, an 18-year-old Brooklyn boy, was crushed between the two machines as they came together and his leg was broken, while Florida and his mechanic were pitched forward with great force. Luttgen, at speed, arrived soon afterward, but by some mystery made his way through a narrow lane of people that opened for him, without doing more damage than scraping a few shin bones with his hubs. The white danger flags in the hands of the signal men stopped the racers who were still on the course.

In the very last lap, Robinson's car had its most remarkable and exciting experience, which threatened to make him lose the race. While running at top speed on the dirt road near Plainview, at a point where most of the drivers shut off to slow for an abrupt curve, but where he did not slacken, the Locomobile skidded into the ditch at the turn. Its momentum was such that it swung up into the road again, whirled itself around in almost a complete revolution, like a pinwheel, and headed up the unused extension of the road from which it had come at the turn. During its spin, a tire burst, and when Robertson brought the machine to a stop and found himself off the course on the unused road, he commenced his tire replacement right where he was. Thanks to considerate members of the crowd, the spectators were kept well back, and the job completed in just 2 minutes and 10 seconds.

By the tearing down of the dividing wall on the top floor of the press stand after the Sweepstakes, a great improvement in the view of the course was effected. Similar improvements could be made on the lower floor.



LUTTGEN TAKING IT EASY ON VANDERBILT'S MERCEDES

SCENES DISCLOSED IN THE MISTY DAWN

There in the distance, through the thin, hazy fog, the arc lamps glimmer on the grandstand and the shafts of light from numerous passing touring cars penetrate the pearly mist in an effort to chase it away. Along the course, as far as the eye can discern cars are parked on both sides of the cement path, which has lost its beautious whiteness and is covered with slippery black mud. The cars skid and slithe and slither over it, for the emulsion of slopped oil and rain water mixed with the tracked mud makes bad going.

Two, three, and then four o'clock roll around and the throng increases and seats in the grandstand begin to fill up. In the press stand opposite, the scribes from many cities are browsing around, some attempting to work, others to sleep. The officials, timers, telephone men, scorers and others, snooze around in chairs or commence preparations for real business.

Presently the White opera bus arrives with the club of Philadelphia newspaper men, known as "The Shock-Absorbers," having made the night trip from the Quaker City in good time. Philadelphia, too, it seems, is to get news of the cup race the same week.

The rain lets up for a few moments and then starts to come down again, wetting the sandwiches and candy of the various merchants who cry their wares about the stand. Calico cigars, peanuts, pop-corn, purple lemonade and candy; hot tamales, hot coffee, hot dogs, enshrouded in soggy rolls; red apples, green apples, blue apples and mint chewing gum are all here. Umbrellas also are for sale, the market in this staple fluctuating constantly, according to conditions. Parasols that sell for 35 cents in New York are bringing $1.50 while it rains, the price dropping to 50 cents whenever the showers cease. Salvation Army lassies are likewise on hand with their tambourines, making hay before the sun shines.

The aroma of campfire smoke is wafted along by the breezes. These small blazes grow more and more numerous along the line as greater numbers of cars appear. From the west of the stand come the strains of the cornetist of the American Locomotive Company's parking space. He is playing popular airs to arouse some of the som-

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nolent ones—some of the tunes being enough to arouse even the dead.

A brilliant light blue and yellow streak appears at the horizon, and presently a moist dawn breaks with its usual silence. The banners and flags decorating the grandstand blow in the breezes. The homoeopathic score board on the roof does not look large enough to hold the complete notation of the eleven laps and it isn't. Seconds in the lap time, which are of vital importance in such a race, are to be disregarded—only the minutes are to be recorded.

A little way down the line a trumpet sounds and then a few musical drum beats. The Irish Volunteers are approaching. Uniformed in blue coats and armed with guns, they march down to the starting tape and receive some confused orders about proceeding to clear the course. In their confusion they are not unlike the comic opera guards of stage tradition. They seem neither militant nor military.

Now they start timidly to clear the way—it is highly amusing. The Volunteers request the crowd to "please" step back and the crowd smiles, but moves not, and tells the soldiers to stop their "kidding." The spectators in the grandstand and the scribes in the opposite stand laugh loud and long. The swaggering colonel rants and blusters around, but the crowd packs solid between the pits and the stand and likewise jams about the official pavilion. The soldier boys make an effort to clear out these places, but they are like so many school children, though less active. What in the world has become of all the Irish fight in them? By degrees they get the rapidly increasing throng to give way slightly, aided by an official touring car, which plunges at the mass and forces it back.

On the second floor of the press stand Mr. H. F. Cuntz has an elaborate graduated graphic scale arranged with numerous straight and fancy curved lines drawn upon it, by which it is possible to determine, by continually making marks and notations, the relative position of each car in the contest, the speed for each lap and the average time for any number of laps up to any point of the race. It is quite an interesting sort of Chinese puzzle; simple, though apparently intricate and is Mr. Cuntz's own invention.

This same press stand, by the way, is occupied quite as much by others as by newspaper men. Advertiseing solicitors, sales managers, agents, tire makers, oil manufacturers, second-hand car dealers, undertakers, shoe clerks and glove salesmen, somehow have contrived to be labeled with "Press" badges. Only yesterday it was highly difficult to obtain sufficient badges for members of the real working staff of papers. However, there seems to be room enough for all and when the doors of the free lunch room open, there is a continuous and typically "newspaper" raid on the viands.

The racing cars are arriving now. Salzman, with his Thomas, is first. George Robertson snorts up and registers an emphatic kick to Starter Wagner and Mr. Vanderbilt, about the way the people are swarming over the course. Salzman and a few other drivers are changing tires, replacing with non-skids.

Nearly all the machines are equipped with studded tires—all wearing Michelins except the two Knoxes, Patschke's Acme, and Florida's Locomobile, the last two being fitted with Diamonds. Nearly all of the drivers and mechanics have their faces equipped with non-skidding, antiseptic masks.

Like many other of the large New York hotels, the Waldorf-Astoria made special preparations for those of its guests and patrons planning to go to the race, and a temporary outdoor garage and repair shop was installed in the Astor court, which ordinarily accommodates only palms, rubber plants, fountains and fresh air. The Palm Room was kept open all night serving early breakfasts. Over 500 special "cup race" hampers were provided for motoring parties. Loaded with roast chicken, drinks, sandwiches, pastry and sweet-meats, and supplied with a complete assortment of Waldorf monogramed knives, forks, speens, plates, cups and saucers, they sold for from $25 to $100 apiece. The St. Regis and the Plaza provided for their Vanderbilt race patronage in much the same way.

Whatever value the wire fences on the Motor Parkway may have in time of peace, they are worthless in keeping the crowd off the course during a big race. Folks just pulled it down, cut through it or climbed over. The concrete road of the Parkway, however, was better than ordinary roads for the drivers, so far as the crowds were concerned. On dirt roads the people crowd to the edges of the black streak down the center that has been oiled, taking it for granted that the cars will keep to that narrow path with the exactitude of tram cars to their rails. But the concrete road is wider, and it is only the most bold and reckless that brave death by standing within its edges.

Next year, perhaps, many of the spectators will bring their own grandstands, as H. J. Silleck did on Saturday. Mr. Silleck had his touring car fitted with a very substantial stand about 14 feet high and large enough to accommodate five or six persons. From this coign of vantage, his family observed all that was going on and were quite comfortable, save when the rain drizzled down into the little white enclosure, mounted over the tonneau, gave them a pitiful semblance to so many people in a shower bath. If others follow this example at future races, the parking space problem may become a difficult one.

At 7:25 a. m. the glorious golden sun came out and settled up in a hazy sky much like a giant, juicy fried egg. The crowd cheered and gave Old Sol considerable applause and the latter smiled blandly, stretched himself and mounted a little higher to get a good view of the race. His rays glistened on the gilt Warner Auto Meter car, with its body shaped into an enormous Auto Meter, that kept tooting its siren as it chugged up and down the road in back of the official stand.

Now that the day had brightened up, the persons of the Smart Set and the Half-Smart Set in the boxes were able to display themselves to better advantage. Standing on a chair occasionally helped a chic figure to show off a new directoire gown in a fetching manner, while a Duchess with a slab of pie in one prettily manicured hand and a chicken sandwich in the other, served to attract occasional gapes of attention. The fact that the stand was so crowded, prevented many grandames from making the sensation they had expected to and a large number missed the expected description of their gowns in the Sunday papers.

When the Chadwick entrant came up to the starting line, Charles W. Mears, advertising manager of the Winton Motor Carriage Co., of Cleveland, displayed unusual enthusiasm. "I hope it wins the race," he declared. Someone reminded him that it was not only an American car, but a six cylinder car, and that it was not so extensively represented throughout the country as to present serious competition with his own company's exclusively six cylinder products. Mears nevertheless persisted in his desire that the Chadwick should win.

After there had been an exciting brush in which one car had passed another at speed, a white moustached motorist turned to his friend and asked, "Did you ever see a 24-hour race on a circular track?" The other replied in the negative. "Well," continued the first speaker, "if you think what we have just seen is exciting, you should watch a 24-hour race some time. It's just like that every minute, and from a spectator's standpoint has this Vanderbilt race business beaten to a pulp. Don't you know, you can see all the cars all the time."

Flash bulletins were sent to Bridgeport, Conn., when the Locomobile won, and the big steam whistles of that factory where it was made was pulled wide open, as a signal of the victory. The newspapers posted the news on their windows and boards, and the town received the information with gratification. Arrangements are being made for a big local celebration in honor of A. L. Riker, the designer of the car, and Robertson the driver.

Some of the afternoon newspapers on the day of the race gave vivid accounts of Starter Wagner flourishing a nickel plated revolver, which he was supposed to fire in starting the contestants. Just plain faking, as a gun could not be heard above the explosions of the big engines.

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LIVELY DOINGS AT SUPPLY STATION

Probably at no point on the course did the spectators get more for nothing than at the official supply station on the back stretch midway between Jericho and Woodbury. Here the cars stopped when they wanted gasolene, oil, tires or other things and this was the only place where one could get a look at a real racing automobile at the sight of the cars racing by as fast, perhaps, as on any point of the circuit.

There was no buzz of excitement until after the first seven cars had passed in the numerical order of their starting, and all going well. The eighth car to pass was Seymour's Thomas. It was going along so slowly that some roadside wag was tempted around in his Locomobile. In less than a minute followed Stricker.

Where's the Knox? Where's the Knox? one and another were asking. For in the first lap Denison had been in second position. Haupt in the Chadwick followed Stricker, and then came Lytle, having passed both Luttgen and Denison.



BIRDSEYE VIEW OF COURSE AT WOODBURY CORNER

close range. It is surprising, too, that more people did not think of that, for there was a very small crowd at the supply station compared with the mass that flocked at the Jericho turn, where, because of the sharp downhill "S" curve, incidents were expected to take the form of thrilling exhibitions of skidding, hairbreadth escapes, and the like. As is usual in such cases the thrills obstinately refused to happen and the spectators who looked for killings had to go away disappointed.

On the other hand, at the supply station, the spectators were rewarded with plenty of action, a tense moment when Stricker's Mercedes caught fire after being run in with smoking, waterless engine, and also to yell the time-worn injunction to "Get a horse!" Seymour heard and laughed.

All the others except Strang, in the Renault, passed the supply station on the first lap with exhausts spitting defiance into the muggy morning air. There was considerable speculation as to what had become of Strang, as he was one of the favorites, but even the telephone man could get no information from the grandstand except that he had trouble in starting. It was half-past seven when Strang finally appeared the first time, and then his car was skidding all over the road so badly that the crowd gave it a wide berth.

The first real burst of enthusiasm came when "Sunny Jim" Florida came flying

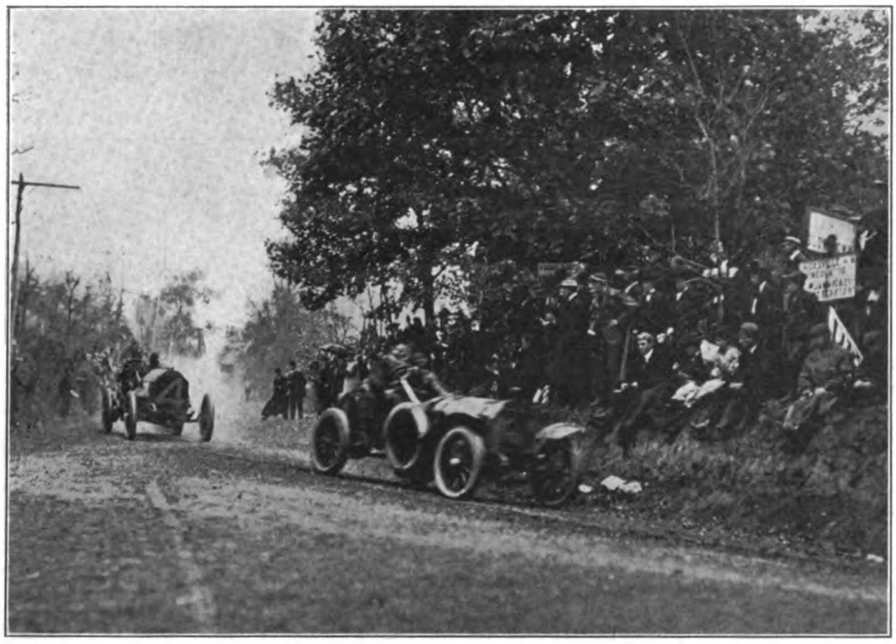
A fur-coated man in a made-in-Bridgeport car got apprehensive when he figured that Robertson in the Locomobile had been the 13th driver to start. His enthusiasm began to rise when the second lap showed that Robertson had worked from this unlucky position to ninth place. Still later in the morning, when the victory seemed to flit between Robertson and Lytle, with chances in favor of the former, the fur-coated individual became excessively joyful.

J. B. Ryall, in the Matheson, gave the watchers a four minute exhibition of quick action when he stopped on his second round. The steering gear had tightened up and Ryall and his mechanic poured buckets of oil on the "knuckles."

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The second time Strang went past the supply station his car was skidding even worse than the first, and on his third appearance he moved so slowly that it could be seen that the car was minus its gear case. A few minutes before, Foxhall Keene had waved his hand to the crowd; the next round for the gate ensued. Ryall was the quicker to start, however, and he got on the course first, but Bourque passed him several hundred yards down the road.

Things were tame for three-quarters of an hour, until Haupt limped up with his magneto advance disconnected. While this



HAUPT, CHADWICK, OVERTAKING STRICKER, MERCEDES

his Mercedes was reported on fire at Jericho.

Seymour, who had been told to "get a horse," was still laughing when he turned into the enclosure at half-past eight to replace a flat tire and also to take on water, gasolene and oil. He had been in difficulties from the start, but still he was not discouraged, even when he lost nearly ten minutes at the supply station. The oil tank was the last to be filled and Seymour was already in the seat waiting for his mechanic to finish and crank up.

"S-a-a-y," he drawled at his helper, "For heaven's sake, hurry up! I want to go out and catch one of those two hundred horsepower Mercedes."

While Seymour was laid up in the supply station Lytle and Keene passed within a few feet of each other. Two minutes later Ryall stopped for the second time. While his mechanic tinkered with a disorganized speedometer Ryall attempted to fill his tanks. He picked up a five gallon can of gasolene, but his hands were slippery and the can jolted against the supply counter. Ryall got a shower of the fluid in his face. A lot of it got into his eyes and blinded him. The pain made him wince, but he displayed Spartan courage while an attendant salved his injured optics. The accident cost him 13 minutes.

While Ryall was laid up Bourque pulled in to replace a damaged spark plug and fill the oil tank. Both he and Ryall finished their tasks at the same instant and a race was being repaired all the tanks were filled and Designer-of-the-Chadwick Nichols seemed eager to assist, and in one case handed a wrench directly to the mechanic, despite the rules, which stated that "whatever supplies are demanded must be placed on the platform of the station. Failure to comply with the above will serve as a disqualification of the car." Nichols was very nervous and in his eagerness to hand water and gasolene to Haupt spilled a great deal of it on the platform. As Haupt was about to get into the car he remembered that he had not put the cover on the magneto and he asked the designer if he could go the remaining three laps without it.

"Huh," grunted Nichols, "the damn thing is no good any way. Go on."

Seymour had to stop again at 9:30. He had lost the radiator cap somewhere on the road and although the radiator had sprung a leak he was not discouraged. He filled it with water, stuck a piece of cotton waste in the opening and tied a handkerchief over the top.

"Well, we'll get that 200 horsepower Mercedes yet," he observed as he drove away. But the next lap he had to stop for water again and as the race was then practically over he didn't hurry as much as before. Denison stopped for a new spark plug at the same time.

The most picturesque scene of all occurred when Stricker and his Mercedes limped up to the stand at 20 minutes past 10 o'clock, with the engines smoking fearfully. The radiator pipes were dry as bones, so dry in fact, that oil had to be run through them instead of water for fear of cracking the cylinders.

Stricker has a vocabulary that is expressive, if not in dictionaries, and the disappointed driver had no hesitation about saying what he thought. The circulation fan was broken and Stricker got a hammer and tried to knock it off, his conversation with Conner, his mechanic, running something like this:

"Connor—bang—I think—bang—you are a—bang—old hoo—rip—doo. Well—bang—we'll get—rip—'em the—bang—next time—



HOT BRUSH ON A WELL GUARDED TURN

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bang, bang—Well, if this—bang—isn't a hell —bang—of a note!"

Then Stricker stoped his hammering to express himself more freely. Just then Robertson flashed by.

"Go on, old lightning! Go on while you can. You may get yours before long."

Hardly a second later the Mercedes caught fire. The small crowd that had been listening to Stricker's expletives made a bee line for the road. Stricker and Connor scooped up a bucket of earth and tried to smother the fire, but that didn't suffice and just that moment a thoughtless stand attendant rushed up with a bucket of water which he was about to dash over the flaming engine.

"You do and I'll kill you," said Stricker as he grabbed the pail of water in time to prevent the engine from being hopelessly ruined. A piece of heavy burlap brought by a thoughtful Diamond tire camp attendant finally smothered the flames.

Only a few minutes after the Mercedes had ceased smoking the news of Robertson's victory trickled in over the telephone. Plenty of Locomobile enthusiasm materialized at the instant, but there was a greater patriotic demonstration over the fact that an American driver in an American car had won the classic cup contest. Some of the Loco "rooters" had a big flag with the numeral "1" on one side and "16" on the other. An enthusiastic spectator grabbed the flag from the touring car where it reposed, waved it exultantly over his head and yelled:

"'Ray! 'Ray f'r Bryan an' zhe Locomobile. 16 to 1. 'Ray!"



LOCOMOTIVES PARKED NEAR GRANDSTAND



PARKING SPACE OF THE MAXWELL CARS

AMID ACTION ON THE BACK STRETCH

As a matter of fact, to one whose interest in the event lies quite as much in its spectacular value as in its action as a contest, it well repays the effort to make a personal tour of that section of the course which seems to promise a maximum of variety and incident. A good sample of varied effects was promised—and delivered—last Saturday on the stretch which lies along the Jericho turnpike between the railroad crossing and Woodbury.

At the railroad crossing, a momentary horror was caused when the first morning train on the Wading River Branch of the Long Lsland Railroad arrived about half an hour behind its schedule, and after slowing down, was given its signal to go ahead, just as a car came into sight. A quick change of signals however, brought it to a stop while the car cleared the crossing. A couple of minutes later, just as it was blocking the course, a few late arrivals were treated to the sight of another of the racers, Chevrolet's Matheson, in fact, bearing down on it at great speed. The driver's judgment was good, however, and the expected accident was averted by about six feet. Shortly after 8 o'clock, a train running toward New York became a target for Haupt in the Chadwick, but removed itself from the course in season to permit him to go on with but an instant's application of the brakes and far less actual peril probably than, as the crowd saw it, appeared to exist.

Throughout this portion of the course, oil had been used freely, and this fact, coupled with the presence of water standing over from the early morning rain, made the handling of the cars a matter of extreme nicety. The minor bends, which ordinarily could have been taken without risk of any sort and at high speed, even as they were later on in the race, proved more than deceptive, and during the early rounds the drivers were forced to exert an amount of effort at the steering wheels which must have been terribly fatiguing. Seldom did a car pass without leaning either to one side of the road or the other, and usually at the little rise just east of the crossing, more or less side switching occurred, according to the tendencies of the car and the skill of the pilot.

Haupt, Stricker, Salzman and Strang were among those who had trouble of this sort, particularly at the top of the slight rise just under the banner which marked the approach to the railroad crossing. Strang, in fact, seemed under a cloud in this respect, throughout his unfortunate career in the race. Judgment is hastily made at such times, but it seemed that the car must be ill-fitted for its work in some way, so badly did it behave in this respect. Hardly did it pass without showing a tendency to swing from side to side, and it was evident that the driver's skill was being taxed to the utmost to keep in the center of the road and still maintain anything like a telling speed.

Lytle, on the other hand, was blessed with ample security, for his driving was marked by no deviations from the slippery path, and though his early rounds appeared to be made at comparatively slow speed over this section of the course, it was unquestionable that he was destined to figure well up at the finish. Florida, Robertson, Luttgen and Kilpatrick all appeared to have good control of their cars, though now and then one or another would experience a ticklish little skid way out to the side of the road, just where there appeared to be nothing to cause it.

"What machine is that No. '1'?" inquired a little curly haired constable, shortly after Florida had passed on one of early rounds.

"No. Where is it made?"

"Bridgeport! American machine?"

"—— Well long's its made here, it's all right. Long's an American machine wins it, I don't care."

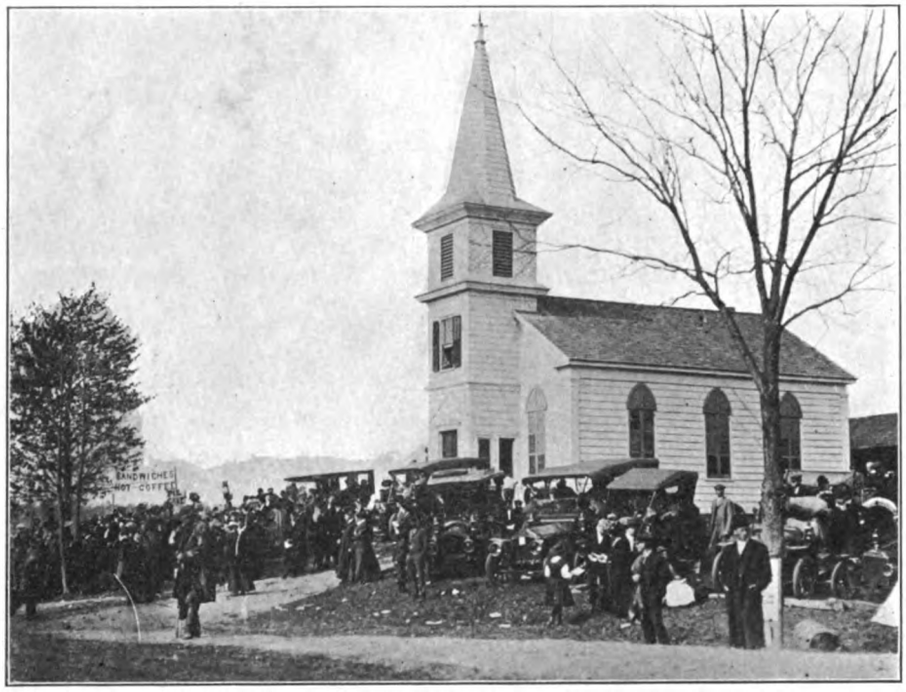
The sentiment was heard many times during the morning and at different points along the course, but mostly from the native population, whose interest in a Vanderbilt race never was keener than at this time.

Along this back stretch, the course was not over-crowded, which was fortunate, as otherwise the deputies would have been de-

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plorably unequal to the task of clearing a way for the drivers. There were few spots which had not their little groups, however, and where the woods came down to the road, touring cars would be found drawn up out of harm's way, while elaborate picnic layouts were spread in the undergrowth beyond, just within sight of the course and its action.

In contrast to the eager watchers of the race were sundry excited little knots of men which were to be seen here and there along the road toward Woodbury. At the very heart of the pack always, would be a mum-



CARS PARKED IN CHURCHYARD AT WOODBURY

my faced individual, hoarse voiced and slick, who deftly manipulated the three little shells, saying: "Nothing under this, nothing under this, nothing under this,"—which usually seemed to be true; or else shifting about the three delusive cards.

Inquiry as to why the deputy sheriffs paid so little heed to these hardy reapers brought out the statement that their instructions were confined solely to matters connected with clearing the course. About half a mile from the Woodbury turn, and just where Stricker was delayed for some time with ignition trouble during the middle of the race, a particularly thrifty quartette was plying the shell game and winning the "Fives, tens or twenties, boys." Less than a city block beyond, and over a knoll which was hardly high enough to drown the sound of their voices, were gathered together no less than eight hardy scions of the Long Island people, each bearing a special deputy's badge and number. The eight numbers were 302, 303, 304, 193, 294, 299, 297 and 298, and the proud wearers of the last three were seated side by side on a log and comparing score cards, while wreaths of strong blue tobacco smoke curled from their pipes.

Instances of constabulary inefficiency were numerous. Just to the west of the Woodbury turn, where the Chadwick car met its Waterloo in a broken driving chain, which delayed its passage for more than a half hour, two of these braves stood on the outside of the group which blocked nearly the whole of the road, and, beyond shouting a warning and themselves dodging out of the way, scarcely made any effort to get a passage free in season for other cars to pass.

At the Woodbury corner itself, toward the conclusion of the race, a native wearing the badge of a regular deputy sheriff of Nassau County, was found seated on a log directly in front of a large touring car which was headed out of a parking space inside the turn. Approached with the oft-repeated question as to whether he had any authority to quell gambling by the course, he replied that while the special deputies who were sworn in for the occasion, probably had no orders to look out for "crooks" of one sort or another, he was regularly on duty. "And I've stopped every game I've seen this morning," he added.

But when it was suggested that if he would but turn his head he would see another, which as a matter of fact actually was in vociferous progress directly back of the car, he replied that he had been posted where he was, and could not leave because the party in the car was trying to get across the course and he had been ordered to stop them, come what might.

In fact sharp badinage was even then in progress between the constable and a champion of the party who stood beside the car, and who explained confidentially to the former, that this was Police Commissioner Bingham's private secretary, Dan Slattery, who was more than anxious to get back to New York for the resumption of his duties. The deputy didn't care who he was, he said; his orders must be obeyed, and he stoutly refused to entertain the humorous suggestion that he turn his head, or go and apprehend a supposed pickpocket who was pointed out on the other side of the course.

As at every turn on the course, Long Island ingenuity was displayed to its utmost advantage in the luring of the visitor's coin. More than ordinarily luring, however, was the net spread by the followers of John Wesley, who worship on Sabbaths at the little white church just around the corner at Woodbury. Here large signs posted on trees and fences ran as follows:

PLACE YOUR
AUTOS HERE
ON
DAYS OF RACE.
APPLY TO
W. H. GILES, Sexton.

In addition to the income from the use of the lot as a parking place, chairs from the interior of the sanctuary were set out upon the porch and rented to the weary visitors at so much per sit, while against the fence of the adjoining grave yard a cooking range was installed, and several tables spread out and heaped with the good things of the neighboring farms. The cemetery itself also boasted a chair or two and a number of visitors who paid little heed to the epitaphs From a window well up toward the belfry leaned a muezzin, who, with book and watch called, not to prayer, but to witness the passage of the cars one by one, the numbers of which he could see from afar as they came down the incline beyond the turn. Half of what was made, went to Mr. Giles in his official capacity, it was learned, and the other half to the cause of the Methodist Episcopal church. How the venture turned out could not be learned, but one doubting sister who had pitched her tent just inside the corner and was serving a mysterious chowder to such as were anhungered, was inclined to question whether any great wealth had been accumulated. Because, as she said, most of the visitors "had fetched their own lunches, and didn't want nawthin' else."

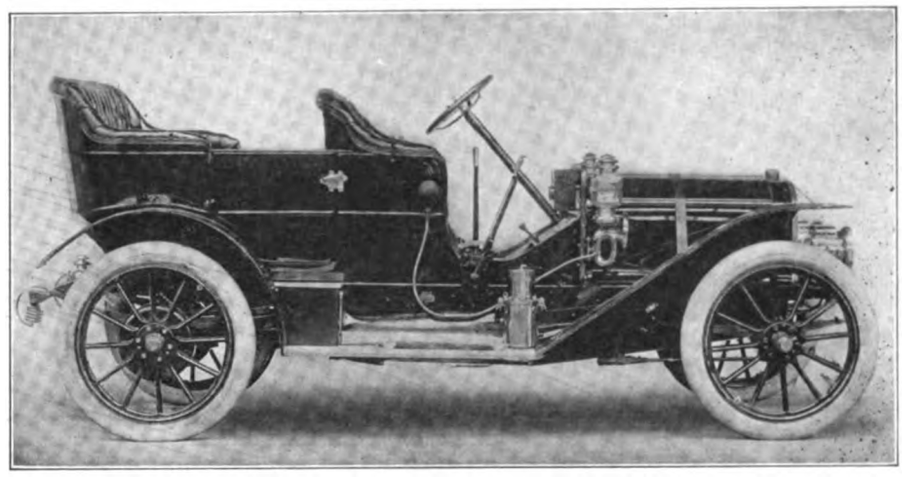
At about a quarter to 11 word was received that Robertson had won. Instantly there was a jubilation, as at all other points on the course, and a newsboy who had been vainly trying to sell a special edition of a New York morning paper burst forth with: "Full acount, Robertson wins Vanderbilt Cup Race." The crowd started to break up, but was held partly in check. Ten minutes later Denison came along in his Knox, and just after he had passed an attempt was made to flag him as another message had been received at the telephone, stating that the race had been called off.

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FOUR RAMBLER TYPES FOR 1909

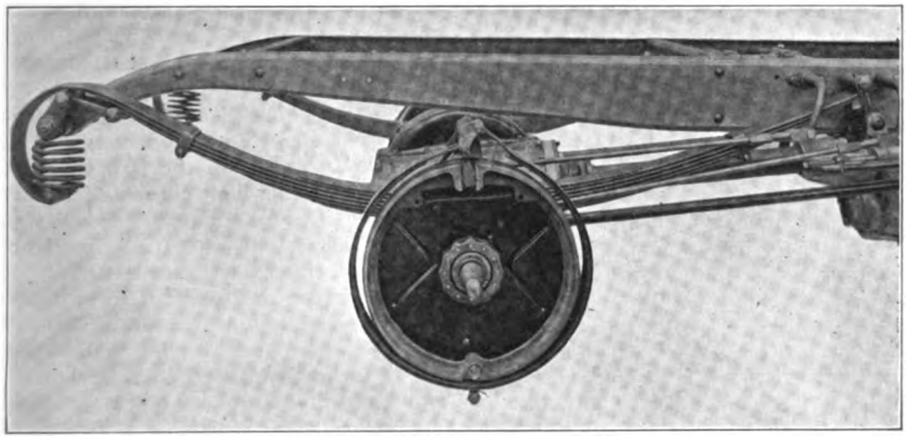
Announcements for the Coming Season Include One Entirely New Car—Important Changes in former Models.

Four distinct types of Rambler cars are forecasted by the announcement of Thomas E. Jeffery & Co., of their plans for the forthcoming year. In addition to the models already made one entirely new car will be produced at the Kenosha (Wis.) factory for the output of 1909. Other models, though given new designations, perhaps, are essentially the same in design and construction as at present. The leader of the line will be Model "44," successor to the Model "34" in current service. Second to this is the new Model "45," while at 22 horsepower, and driven by a twin cylinder, opposed motor, the Rambler "Utility car," as it is called, remains practically undisturbed in its field. The fourth member of the group



RAMBLER MODEL "44"

is the Model '47," which differs from the last-named car principally in having seats for two or three passengers instead of the full five of the other.

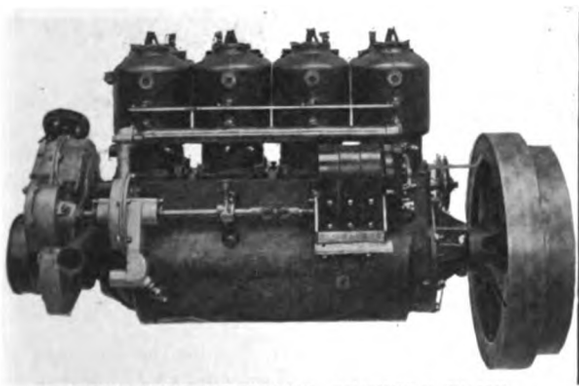


TRIPLE ACTION REAR SPRINGS AND BRAKES

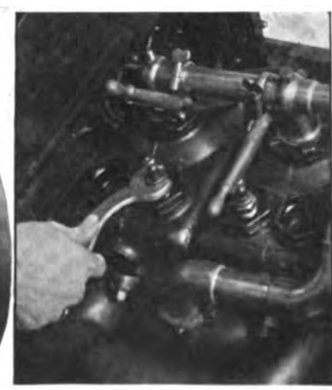
Except in the matter of size, power and price, Models "44' and "45" are alike. Actual differences between them exist in the engine dimensions, the wheel bases, tire sizes, and body capacities. The Model "44" engine is four cylinder in type, and of 4½-inch "square" measurement. In its previous form it had an output of 32 horsepower, but by increasing the valve diameters, as well as the carburetter capacity 2 extra horsepower have been added to that figure. As heretofore, one of the most distinctive features of the machine is the offset crank shaft. The flexibility thus secured has been extended in the latest motors by the addition of 26 pounds extra weight to the rim of the fly wheel.

Another important change is the doubling of the face width of the two-to-one driving gears. A single-piece crank case is used, and the crank shaft is inserted from the rear end. The bearings are so constructed that they may be adjusted from the hand hole opening in the case without the necessity of dismounting any parts. The hand hole is placed on the right hand side of the motor and is of sufficient size to afford ample opportunity for adjusting the connecting rod bearings as well as the main shaft bearings. A small added convenience, useful in this connection is the adoption of quick detachable front mudguards, so arranged that they can be quickly dismounted in order to give ready access to the lower portions of the engine. By elevating the exhaust manifold slightly in the new models further convenience is secured in more easy approach to the valve stem, adjusting nuts and screws. Other changes made with similar ends in view include the more elevated position of the timer and the use of flexible cable for the primary as well as the secondary current.

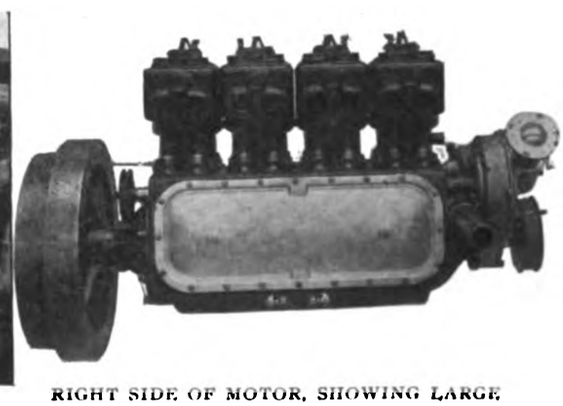
An entirely new method of connecting the high tension terminals with the spark plugs is worthy of special mention. Instead of the all too familiar loose-stranded arrangement of heavily insulated wiring, the leads terminate in a fiber block, which, is affixed to a suitable bracket mounted on the upper water pipe. A metal strip fastened to the lower side of the block is designed to



LEFT SIDE OF MOTOR, SHOWING PUMP AND MAGNETO



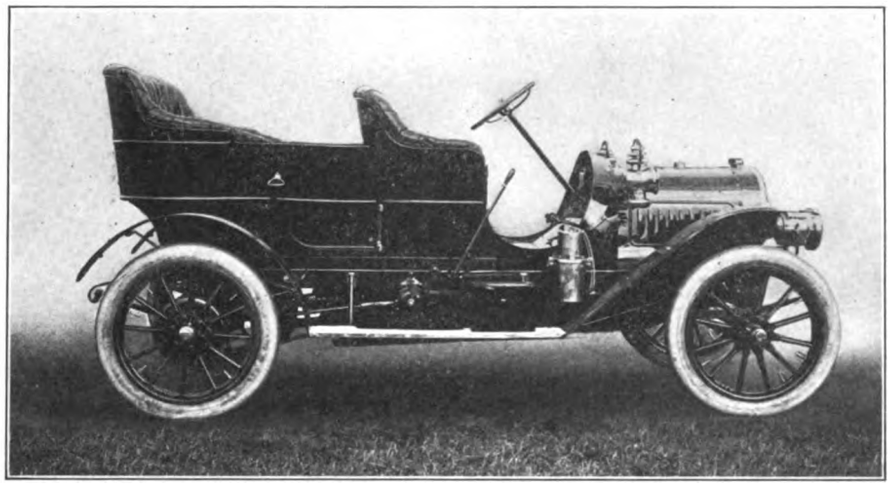
SPARK PLUG CONNECTION



RIGHT SIDE OF MOTOR, SHOWING LARGE HAND HOLE PLATE

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rest against the flat top of the spark plug, while the position of the block is secured by means of a thumb screw. Besides forming a convenient device for cutting out one or more cylinders for testing purposes, this arrangement also provides a partial cure

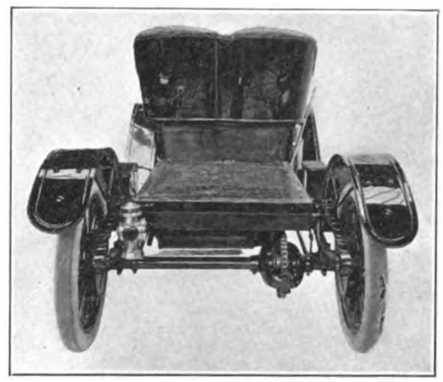


RAMBLER MODEL "41"—UTILITY CAR

for soot-fouled plugs, since by raising the blocks very slightly from the plugs, spark gaps of any desired width may be secured. To free the plugs in order to remove them from the cylinder, the blocks merely are lifted out of the way and the operation involves no handling of wires or terminals. Ignition is by jump spark, though the Bosch high tension magneto may be obtained on special order as an extra option.

The pump drive now is placed on the opposite of the crank case from the cam shaft, and the pump housing is made entirely separate from the crank case so that in the event of leakage at the stuffing box, no water can find its way into the motor. A new type of pet cock has been adopted, which is so contrived that a check valve, spring retained, prevents any possible loss of compression, while relieving any vacuum which may tend to occur in the cylinders when running down hill under closed throttle. A new location for the automatic oiler, as well as a 50 per cent. increase in its capacity, also improve the running of the machine not a little.

An improved form of direct-acting cone clutch has been made to supplant the balanced, inverted cone formerly employed, its construction involving the use of a pressed steel disc instead of the more common aluminum member. Easy means of adjustment is provided, while the use of a camel's hair pad in the bearing provided for releasing the clutch prevents spinning when changing gears. Improvements in clutch actuation include the shortening of the length of travel of the pedal, and an arrangement whereby the first 2 inches of brake lever movement secures the complete disengagement of the clutch. The change gear remains practically the same as heretofore. A minor exception is in the abandonment of the former method of gear shifting, by means of rocker arms and brackets located at the back of the gear box, and its replacement by a system of direct movement. To guard the reverse position a sort of gate lock is provided, which may be raised when desired, by pressing a button located in the foot board.

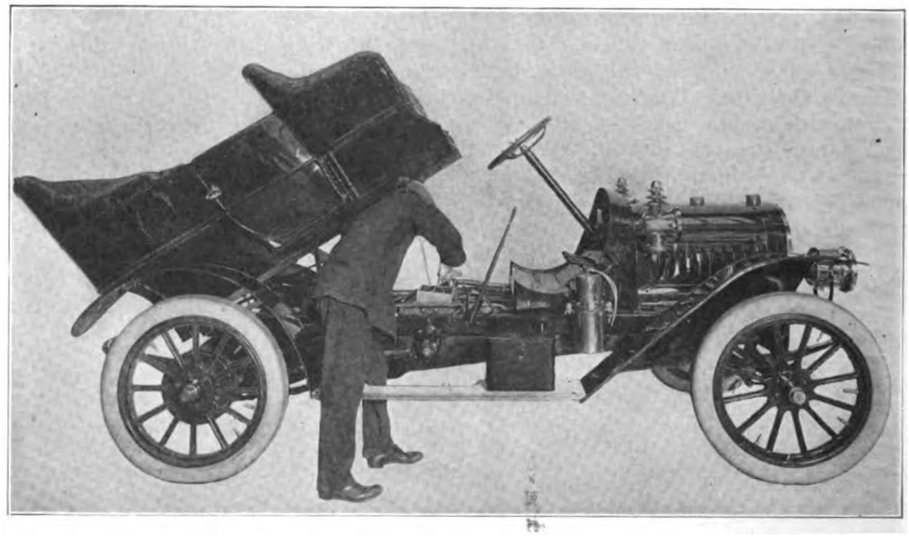


MODEL "41," SHOWING NEW REAR AXLE CONSTRUCTION

Such provisions as increases in brake leverage, the provision of a new method of hand adjustment for all the brakes, and increased size in the steering parts as well as improved methods of compensating for wear—are among the strong points which will be noticed in the new models.

The two two-cylinder models—"41" and "47"—have not been altered materially in preparation for the new season. The unit power plant, with its parts housed completely, in fact, is carried over without alteration. The floating type rear axle is mounted as heretofore on roller bearings at the hubs. A new feature of the construction, however, is the replacement of the aluminum housing which has been used on the models of the past two years, by a heavy forged yoke. This provides greater clearances and greater strength, without need for a thrust. Indeed its high road clearance is one of the strong points of the car. As the driven sprocket comes at one side of the center line of the car, it is enabled to dodge many obstructions which otherwise would interfere with it, thus giving the effect of a clearance even higher than it really is. The height of the wheels employed—34 inches—also adds to this desirable effect. The rear wheels are provided with pressed steel brake drums, which are 13 inches in diameter, and 2½ inches wide. A noteworthy convenience peculiar to this car is the tilting body which, as shown in the accompanying illustration, permits immediate access to any and all of the working parts of the power plant and renders the thorough care of the machine a relatively simple matter. The design of all the parts tends toward ease of access and simplicity of adjustment.

Among the few alterations which this model is undergoing may be mentioned the enlargement of the steering wheel from 14 to 17 inches, improved construction in the wheel itself, improvements in carburetter design and timing yielding a very material increase in power, despite the fact that the rated output still remains at 22 horsepower. The wheel base is 106 inches, and the tires are 34 by 4.



MODEL "41," SHOWING METHOD OF TILTING BODY TO MAKE REPAIRS

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PREVENTION OF EXCESSIVE WEAR

Proper Placing of Bearing Parts—Oil Retaining Devices and Protection Against Mud—Methods for Lubrication.

Within limits it may be said that the life of a motor car depends on the susceptibility of its parts to the destructive influences of abrasion, or in other words, plain wearing of connecting parts. Accidental causes of derangement aside, it may be considered that the broadest and most useful field for improvement in modern motor car practice lies along the lines of alteration which in one way or another tend to prolong the life of the bearings. Touching upon the causes and methods of prevention of wear, F. H. Royce, in a paper read before the British Association in Dublin, also takes occasion to score roundly the designers of many well appearing cars, who are inclined in his opinion to neglect many of the basic principles of mechanics.

"It is at first difficult to believe, but an examination of cars at an exhibition such as the annual show held at Olympia and the Grand Palais, Paris, makes it quite clear that, while a certain small proportion of chassis are obviously designed by men who are good engineers and who have taken great pains and care to make their designs as nearly mechanically perfect as the conditions will allow, there are many chassis which show that the designer is either extremely careless concerning, or has little knowledge or perception of, the science of mechanics," is his trenchant observation. "These latter chassis may, after a certain number of poor pieces have been eliminated, be more or less workable, and may, if well manufactured, satisfy the average purchaser's examination; but, owing to poor mechanical features, are bound to be costly in maintenance.

"For instance . . . . in such important features as connecting rods, shafts in change gear boxes, road wheels, and wheels running on studs, the bearings are so disposed that the load or pressure does not fall in the center of the length of bearing; or, in the case of two rows of ball bearings, does not fall between the two bearings; or, worse still, falls beyond and quite outside the bearing.

"Absence of regard for the mechanical canon that pressure should either be centralized on or equally distributed along the whole length of a bearing is undoubtedly the cause of wear in many motor cars.

"Road and other stresses cause twistings and deflections which may throw out of alignment various parts. Take, for instance, a comparatively rigid crank chamber fixed to the frame. The frame, owing to road irregularities, twists, and its side members thus act as powerful levers tending either to break the attachments or twist the whole crank chamber. In the latter case, the bearings of the crankshaft become deflected from true axial alignment, causing excessive load to fall on small areas. Rapid wear, if nothing worse, must result. . . .

"Again, there are crank shafts which have evidently insufficient support, such as double cranks with no bearing between them. In these cases, again, we have the distressing knowledge of crank pins bent out of true alignment. Excess of pressure on local spots, and the crushing out of lubricants at such spots, must, we know, be attendant under these conditions, and more or less rapid wear must result. . . . .

"Another instance of improper design is found in cars in which the torque rod, used to control the back axle, is so fixed that no provision is made to allow of the movement which must take place when one back wheel rises higher than the other owing to its surmounting an obstruction on the road, or owing to an uneven road surface. In such a case some slack must exist in the joints or the part must bend. . . . .

"Another point that may be mentioned in connection with design is the importance of arranging that parts which are subject to much friction (such as gears, road wheel bearings, and universal joints) should not only be fitted with oil-retaining devices, but also protected against mud and water.

"One sees universal joints on quite a number of expensive chassis which are not provided with any case at all, or perhaps provided with cases which cannot retain oil against the high centrifugal force engendered. It is hard to imagine the lubrication staying on a joint revolving at from 300 to 1,500 revolutions per minute, if it has the slightest chance to escape. In the absence of an effective oil-retaining case, these revolving joints may be trusted to get rid of any oil or grease which may be adhering to them, just as effectively as the hydro-extractor may be trusted to throw out the liquid. The same force will act equally well in either case. . . . .

"It must, however, be remembered that a case which is oil-retaining need not necessarily be water-excluding. Especially does this remark apply to road wheel hubs, which often allow water to be admitted. This is disastrous where ball bearings are employed.

"The choice of materials used in the construction of a motor vehicle are chiefly important for two reasons: 1. To avoid breakage; 2, To resist wear. . . . .

"If the film of lubrication could be perfectly maintained, the material used for the wearing surface would be quite unimportant. Aluminum, one of the worst wearing metals, might be employed; but one cannot rely on the lubricating film always keeping the surfaces out of contact. In the case of the crankshaft, the position of affairs is aggravated by the fact that the steel, in order to be really tough and reliable, is said to be in a state of pearlite, which, it is stated, under conditions of imperfect lubrication and in contact with hard bronze bearings is very likely to seize. Hence the success of such alloys as will run with such a steel shaft for a time fairly well without lubrication. Probably the most remarkable of these in that respect is lead, and alloys containing large proportions of lead, but the writer has always thought these too plastic to stand the severe mechanical stresses they are subject to in motor car work. Genuine Babbitt metal of tin, antimony, and copper seems excellent for crankshaft work if properly applied.

"In almost every other part of a car the wear is taken on ball bearings, or the parts are capable of being case-hardened.

"Excellent results can be obtained with a properly case hardened shaft or other surface running with bronze bush or bearing. This combination is not nearly so exacting with regard to perfect lubrication as when one of the surfaces is of unhardened steel. Care should be taken to secure that the case-hardening is of sufficient depth and is free from soft places, the shaft being ground down a few thousandths of an inch to exact size on a precision grinding machine, and well polished.

"Referring to gear wheels, which should in nearly all cases be thoroughly case-hardened, the selection of material is more important under the heading of breakage, because any mild steel will case-harden almost glass hard, but unless carefully selected and heat-treated, may be as brittle and weak as a zinc casting.

"Ball bearings carefully arranged and well made are wonderful things, carrying enormous weights and bearing considerable ill-treatment, but the materials for these deserve careful selecting. It seems that both balls and races should be made of a good high carbon steel (although even this is improved with a small percentage of chromium), but good results have been obtained with exceedingly deeply case-hardened mild steel. Really, this amounts to much the same thing as using high carbon steel, as the hard casing, to be satisfactory, should go nearly through. . . . .

"Next, let a warning note be sounded as to what kind of oil to use. This can be roughly outlined as follows: Do not use thin oil; do not use stiff grease; use oil of ample viscosity (body), and of good lubricating properties; and lastly, use the very thickest oil that will always be liquid, for all parts except the engine. . . . .

"Reverting for one moment to a question of design, it should be added that there are points where the film of lubricant cannot be continuously maintained. In these positions the ball bearing and the case-hardened surface come as a valuable aid to the designer."

The three points which the author regards as essential to success in the prevention of wear are: "Satisfactory (and, as far as possible, automatic) means of lubrication; ample or thoroughly case-hardened surfaces; protection against mud and water."

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TOWNS MAY BAR MOTOR TRAVEL

Massachusetts Supreme Court Sustains Closing of Roads—Denies Existence of Natural Rights in Highways.

It has been definitely decided by the Massachusetts Supreme Court that the selectmen of towns and the aldermen of cities have the right to exclude automobiles and motorcycles from certain streets of a town or city in addition to their full power to regulate the speed of automobiles in their localities. This important decision is the outcome of the test case of the Commonwealth vs. Arthur L. Kingsbury, of Northampton, Mass. The case reached the higher court on appeal from the district court of Franklin county, which found the defendant guilty of running his car over a closed road in Ashfield.

The contention of the defendant was that he had as much right to run his automobile through a town or city highway, as the driver of a horse-drawn vehicle and that the law under which the way in question was closed, deprived him of his rights guaranteed by the constitution of the state. It was further contended that there was nothing dangerous about an automobile as an automobile, and that with the laws now on the books regulating the speed of such vehicles, there was no reason for interfering with the reasonable running of a motor car on any public way.

District Attorney Irwin declared that the experience of the State had been such as to make it appear advisable to the Legislature that very full powers, as to the exclusion of automobiles from certain ways, should be delegated to the selectmen of towns and aldermen of cities. He contended that there was an element of danger in the automobile itself, due to the uncertainty attending its control by the driver, and that in view of that uncertainty, it was entirely reasonable that thoroughfares should at the discretion of the town and city authorities, be closed to travel.

The Supreme Court's opinion was written by Chief Justice M. P. Knowlton, of Springfield, and embodies the views of District Attorney Irwin, his fellow justices concurring.

The Kingsbury case began in September, 1907, when a complaint was filed with the district court of Franklin county, charging the defendant with having operated his car over Center street, Ashfield, which had been closed to automobiles in accordance with a notice posted in the street to that effect. The defendant admitted that he did operate an automobile over the road in question; that he knew that automobiles had been excluded therefrom; that he was conveying in his automobile a friend who desired to visit Mrs. Howe, his sister, who resided on that street; that Mrs. Howe's residence could not be reached without traveling over some portion of a "posted" highway; that the defendant took the shortest of three "posted" roads in going to Mrs. Howe's; that the highway was an ordinary country road, the traveled part of which was about 12 feet in width.

Kingsbury lost his case and appealed it in November, 1907; then lost again. The recent decision of Judge Knowlton upholds both of the former ones in every respect. The court holds that the selectmen of Ashfield in making the regulations in question, acted under the police powers delegated to them and the other selectmen, by the legislature.

A portion of the District Attorney's argument which the court upheld was as follows:

"The statutes are presumed to be constitutional. This presumption prevails until the contrary is shown. In the enactment of a statute good faith and knowledge of existing conditions on the part of the legislature are presumed.

"The operating of automobiles in the public ways may be regulated under the police power of the commonwealth. Nor is their regulation by the police power repugnant to the constitution as special or class regulation. The states have a right to enact laws applicable to a given class of individuals only, so long as the classification is reasonable and not arbitrary. The 14th amendment to the United States constitution does not control the states in the exercise of the police power.

"The police power is inherent in the state. It is the central force, the long and strong arm of organized society, compelling that which should and restraining that which should not be done. . . . . Through its operations the legislature has plenary powers over the public ways. . . . . The commonwealth exercises its control over the public way either by direct command or by delegating authority to local municipal authorities, specified commissions and boards.

"These matters are the concern of our legislature by the power granted to it by the organic law of the commonwealth. Chap. 1, section 1, article 4, reads: 'And further, full power and authority are hereby given and granted to the said General Court from time to time, to make, ordain and establish all manner of wholesome and reasonable orders, laws, statutes and ordinances, direction and instructions, either with penalties or without, so as the same be not repugnant or contrary to this constitution, as they shall judge to be for the good and welfare of this commonwealth, and for the government and ordering thereof, and of the subjects of the same.'

"In the view of the powers so granted, and of the way in which the same have been exercised by the legislature, with the approval of this court, may it justly be claimed that the ubiquitous meanderings of the automobile upon our public ways may not be regulated thereby?

"The defendant claims that 'the use of highways by automobiles is a natural, ordinary and reasonable use of them, and automobiles have as much right upon them as horse-drawn vehicles,' and that the "legislature has not, in the exercise of the police power, the right to make special regulations excluding automobiles from particular roads and ways.'

"Perhaps it may be permitted to suggest that the use of public ways by these machines has been unnatural, extraordinary and unreasonable; hence the legislature has undertaken to curb them a bit. In passing, it may be said that there are no natural rights in any person in public ways, such rights are developed from the state."

Court Defines Gasolene Storage.

In a verdict handed down by the Superior Court at Barnstable, Mass., on Saturday last, 24th inst., it was clearly established that a special license from local authorities to store gasolene is not necessary when the only gasolene on the premises is kept in the tank of an automobile. The decision was reached in the case of Henry C. Lambert, of Hyannisport, and is of especial interest to Massachusetts motorists who stable their own machines.

The case created no little commotion for Lambert had allowed as many as five motor cars, owned by summer residents, to be stored in his barn last July, despite the refusal of the selectmen to grant him a license. He was arrested in consequence. haled to court, from which he did not escape until he had been found guilty and fined $50. He appealed the case and continued to rent his barn for motor car storage in the same old way and the next month he was arrested again and fined $50 more on the same charge. Lambert went home and re-opened his barn for business once more and appealed the case for the second time —in this instance to the Superior Court

When a jury was finally impaneled, Justice King took the case under advisement on this statement of facts agreed to by District Attorney James M. Swift and Attorney Ellsworth: That Lambert rented his barn for the storage of automobiles, five in number; that buildings were within 50 or 100 feet of said barn; that each machine was propelled by gasolene and had gasolene in the tanks of the car, sometimes as much as 20 gallons in a car; that no gasolene other than that in the tanks on the cars was kept in the building; that he had no license to keep or store gasolene on the premises. Much to the chagrin of the indignant villagers from the "Port," the court ordered the jury to bring in a verdict of "not guilty."

Motor Races for Ohio State Fair.

A series of automobile races is to be held in Dayton, O., Saturday, October 31, at the State fair. In addition to the regular races, a number of novelty events, and motorcycle competitions will be on the program.

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WHO WANTS AN "ENDORSEMENT"?

Made to Suit While You Wait—It Looks Official and Comes Easy—How the Game is Worked.

The old familiar "United States Trade Reports," like its twin brother the "United States Health Reports," is still "doing business" in the same old way. The "Trade Reports" usually is being published whenever its proprietors get hold of a "good thing." Just now they appear to be looking in the automobile industry for things of the sort and any manufacturer who has either a motor car, a motor tire or even a platinum point which he desires to have "endorsed" as being "without an equal," or "undoubtedly the best on earth," or "the most hygienic in the world," will not have the least trouble in obtaining the "endorsement"—provided he invests in a sufficient number of copies of the "United States Trade Reports."

If the manufacturer is of the same stripe as the publisher of the alleged "reports" he will send reprints or marked copies of the "endorsement" to his friends and customers and if they are "easy" they will swallow the dose without a gulp; if they reside abroad they will not only swallow the puff but will become possessed of the idea that the "endorsement" is a more or less governmental endorsement, which idea is designed to be conveyed by the title of the publication, which usually consists of a lot of overripe standing matter into the midst of which each "endorsement" is dropped as the "good things" are gathered in.

The manner in which owners of these alleged "United States Reports"—which repeatedly have been exposed—operate is shown by the stuff they are now circulating in the automobile trade. When the "good thing" is selected he receives a letter of the following tenor:

The enclosed article is an editorial prepared on the subject of Auto Motors, which we intend to publish in our columns. Our policy of furnishing reports on any commercial matter about which our readers may request information, brings us numerous inquiries on all subjects pertaining to trade. This editorial gives facts that are needed and will be appreciated by a large number. As we have highly endorsed your make of ———, and as we desire to be as correct and comprehensive as possible, we ask that you add to or alter same as you may think best, and return as soon as possible. If you have any cuts that will illustrate the subject, kindly loan them to us and we will return them promptly.

As this is an editorial of course there is no charge for the publication and if in addition you can use any extra copies of the issue in which it will appear, we will be pleased to make you the following special reduced rates, as we are desirous that you should get as much benefit out of it as possible.

The price of the United States Trade Reports is 15 cts. per copy, but we can supply you with 10 at 12 cts., 250 at 10 cts., 500 at 9 cts., or 1,000 or over at 8 cts. per copy, shipped to you. Or, if you will send us a list of names of those whom you wish to reach, we will mail marked copies to such, without any extra charge to you for the postage, wrapping, addressing or marking.

Although the publication does not depend on an order for copies, such an order will be appreciated by us.

Awaiting an early reply with corrected copy we are,

Yours very truly,

UNITED STATES TRADE REPORTS.

The "enclosed article," which constitutes the "endorsement," almost invariably is as follows:

THE BEST MAKE OF ———

We fully appreciate the difficulties the prospective buyer finds in obtaining a truthful and correct answer to the question, "Which is the best make of ———?

In the first place, he himself cannot know all the different kinds, and therefore cannot decide for himself.

Second, he cannot depend on the opinions of others, as they, like himself, cannot know all the various makes, or may be prejudiced in favor of the kind they use.

Third, he cannot take his choice from reading matter and advertisements of manufacturers, since one and all believing they are right, and justified in saying so claim their respective make the best.

Fourth, he cannot expect to have his question answered by any journal devoted to the trade, for in so doing such journals would commit financial suicide, since all other manufacturers, except the one given as the best, would at once withdraw their advertising patronage.

In view of the difficulties to a correct decision, this paper decided to make a thorough investigation, the result of which would be a decided answer as to which is the best. We fully realize the responsibility of making such a decision, since we are aware that our readers will accept it as final and worthy of fullest credence. For the benefit of new readers we wish to state that such faith on the part of our old readers is caused by their knowledge of the invariable method pursued by the Reports by which we can conscientiously give an independent and unbiased report on any article manufactured. This method consists in examining closely all the various makes, by means of our editorial and reportorial staff, without the knowledge of any manufacturer interested, and, further without making any charges, accepting any gifts, or soliciting any advertisements from any one whose wares we may pass upon.

As a result we are prepared to state that there is no make of ——— on the market today equal to those manufactured by the ———, of ———. These ——— are made of the best material, are durable in use, perfect in construction and will give satisfaction at all times.

The company is thoroughly reliable in every respect and can be depended upon. Their business is conducted on a line that is pleasing to each and every customer, and promptitude is a special feature of their business methods. They also stand high commercially.

Our interested readers will do well in addressing them direct, as we are sure that all dealings with them will prove mutually beneficial and profitable.

Mexico Uses 1,600 Automobiles.

Mexico at present boasts the use of some 1,600 automobiles. Of this number 1,200 are in use in Mexico City alone.

PRICE CUTTERS GET A SETBACK

Accessory Makers Will Refuse Supplies to the "International Automobile League" —Curtin Blocks Its Game.

Many prominent makers of automobile accessories have writen to Thomas E. Curtin, of the Curtin-Williams Automobile Co., of Columbus, O., declaring that the International Automobile League, an alleged association, which promises cut prices on motor supplies, cannot obtain goods from them to be sold at less than the regular prices, and that they will prevent, so far as lies in their power, the sale of their products either to the league or its officials. The president of the league recently wrote Curtin offering to waive the $50 fee which the league says it ordinarily exacts, if his company would be the first to represent them in Columbus. Curtin replied that if he wanted to cut prices he could do so without paying for the privilege, and later addressed some remarks to the Columbus Automobile Club on the subject. As his remarks somewhat interfered with the league's negotiations with the club, Curtin was written to again and taken to task. His answer is the exhibit of the accessory makers' letters, showing their disposition toward the league.

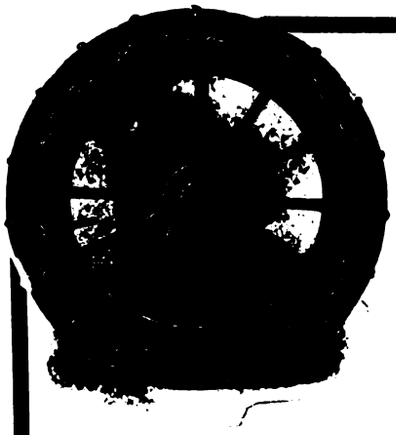
Boom in British Factory Sites.

According to American Consul Frank W. Mahin, of Nottingham, the effect of the new British patent law, which provides that articles produced under domestic patents be manufactured in England, already is manifest in arrangements which are being made for the introduction of new factories. The representative of a British firm making a specialty of securing factories and factory sites for applicants is quoted to the effect that many applications have been received from foreigners, induced thereto by the provision of the new law. An important feature of the applications already made is that the manufacturers demand works much larger than are necessary to make the patented article, giving as the reason that they can not run works in England on the patents alone, and therefore intend to make other wares which have hitherto been imported ready-made. Consequently, the volume of new manufacturing business brought into the country is expected vastly to exceed what is directly attributable to the influence of the new law.

Spain's Census of Motor Cars.

A recent estimate places the total number of motor cars in present use in Spain at 3,000. They are distributed as follows: Madrid and district, 500; Barcelona and district, 600; Gipuzcoa, including San Sebastian, 300; Vizcaya, including Bilbao, 200; Palma, Balearic Islands, 300; Seville and district, 100; all other places, 1,000.

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"Caught in the Rain"

When you're caught in the rain without

WEED CHAINS

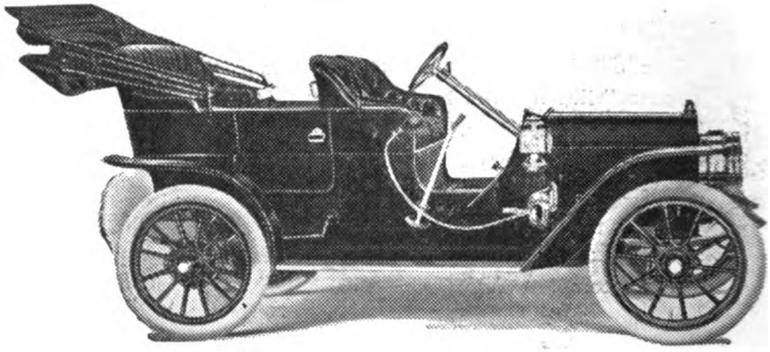
you are sure of a skid. Weed Chains are necessary equipment. Never leave your garage without them.

Write for Bulletin.

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35 Moore Street, New York.

OAKLAND



Model B Touring Car, price $1,250.00. Full equipment, including two gas lamps, two side oil lamps, one tail lamp, generators, horn, tools, jack, pump and batteries. Top, $75.00 extra. Runabout, $1,200.

¶ A combination of simplicity and efficiency designed for the man who scrutinizes the car he is to buy, who intends to himself operate it, and to whom economy in up-keep and running expense is essential.

¶ The live agent will find in the Oakland a car that appeals to a large and intelligent class of purchasers and that will justify the fullest confidence.

¶ Correspondence invited.

OAKLAND MOTOR CAR CO., Pontiac, Mich.

J. B. ECCLESTON, Sales Manager, 53 Franklin St., Buffalo, N. Y.

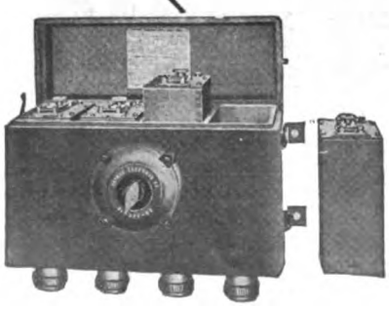
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Heinze ignition apparatus on your 1909 car and get

THE BEST MADE.



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The Week's Patents.

894,291. Vehicle Wheel Rim. Edwin C. Shaw, Akron, Ohio, assignor to B. F. Goodrich Company, Akron, Ohio, a Corporation of Ohio. Filed Feb. 20, 1907. Serial No. 358,460.

1. In a vehicle wheel rim the combination of a channel iron having a permanent tire flange mounted thereon, a transversely split ring carrying a second tire flange, downwardly extending lugs upon the terminals of said ring, a slot in said channel iron adapted to receive said lugs and means for securing said lugs within said slot, consisting of a bolt having a flaring head shaped to enter a recess in the split ring and a shaft adapted to pass through and to be secured beneath the channel iron.

894,292. Vehicle Wheel Rim. Edwin C. Shaw, Akron, Ohio, assignor to B. F. Goodrich Company, Akron, Ohio, a Corporation of Ohio. Filed Feb. 20, 1907. Serial No. 358,462.

1. In a vehicle wheel rim the combination of a channel iron having one tire flange permanently attached thereto, a second tire flange mounted upon a removable transversely split ring, a retaining flange upon said channel iron, downwardly extending lugs near the terminals of said split ring, and a key adapted to pass through perforations in said lugs, and to seat against the under surface of the channel iron.

894,293. Vehicle Wheel Rim. Edwin C. Shaw, Akron, Ohio, assignor to B. F. Goodrich Company, Akron, Ohio, a Corporation of Ohio. Filed Feb. 20, 1907. Serial No. 358,464.

1. A two-part rim for vehicle wheels comprising one member seated upon the wheel felly and provided with a retaining seat for the second member; said second member comprising a transversely split ring carrying a tire retaining flange; and means for pinning said second member to said first member, consisting of a bolt having a butterfly shaped head adapted to seat within a recess common to the terminals of the second member, and a shaft adapted to pass through said first member and to engage with a nut seating there-beneath.

894,327. Change-Speed Gear. John Johnston, Putney, London, and Harry W. Buddicom, Nannerch, near Mold, England. Filed May 9, 1905. Serial No. 259,622.

A change speed gear comprising a driving shaft, two sun bevel pinions, one loose on and one keyed to, the driving shaft, sun bevel wheels loosely mounted and having concave webs and sleeves integral with said webs, a sleeve integral with the loose sun pinion, planet pinions meshing with the sun wheels and pinions, radial pins for said planet pinions, a concave member keyed to the driven shaft and having bosses for supporting the outer ends of the pins, a sleeve integral with the inner ends of the latter, a light casing inclosing the gear wheels and pinions, and brake drums outside the casing and mounted on the sleeves of the sun wheels and of the loose sun pinion, said sleeves extending through said casing, substantially as hereinbefore set forth.

894,431. Shock Absorber for Vehicles. Edward A. Garvey and Christopher A. Garvey, St. Louis, Mo. Filed Sept. 23, 1907. Serial No. 394,136.

1. The combination, with a vehicle having a body frame, an axle, and a radial arm pivoted to said body frame and supported by said axle; of a saddle supported by said radial arm, a carrier supported by said arm, a pneumatic bolster mounted upon said carrier and a main spring connected with said radial arm and said saddle and yieldably supported by said bolster, substantially as set forth.

894,444. Controlling Device. Wellington P. Kidder, Boston, Mass. Filed May 18, 1903. Serial No. 157,525.

1. The combination of a pair of hand levers with an intermediate swing interlock, and connections whereby one of said levers is adapted to operate a brake and clutch and whereby the other of said levers is adapted to operate a change-gear mechanism.

894,473. Power-Changing Mechanism. Robert Symmonds, Jr., Kenosha, Wis., assignor to Thomas B. Jeffery, Kenosha, Wis. Filed Dec. 14, 1905. Serial No. 291,697.

1. In a power changing mechanism, the combination with a driving element, of a driven element, an eccentric rotated by the driving element, and means interposed between said eccentric and the driven element for rotating the latter in the direction of rotation of the driving element or in the opposite direction.

894,493. Pneumatic Cushion for Vehicles. Edward A. Garvey and Christopher A. Garvey, St. Louis, Mo. Filed Jan. 9, 1908. Serial No. 409,928.

1. A pneumatic cushion for vehicles having a cushion carrier, comprising a pair of cushion sections each having an open inner end, a main coupling having necks, means for securing the open inner ends of said cushion sections to the necks of said main coupling, and means for securing the main coupling to the cushion carrier.

894,526. Spring Wheel. Henry Neubert, Chicago, Ill. Filed April 27, 1907. Serial No. 370,579.

1. A spring wheel comprising a central structure including a hub and a felly, a plurality of semi-elliptical springs located between the felly and rim, guides secured to the rim and extending radially to the wheel and partly inclosing the springs and felly,

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Attach Warner Auto-Meter to the dash of your car. Its record is infallible in any weather—on any roads. Write for details.

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have already been sold for 1909 cars than all our competitors can sell. Sales to date total more than 15,000. And that's not all. More Remy High Tension Magnetos are now in use on American built cars than all others combined. The Remy is the **simplest** magneto—the magneto without brushes—the magneto that gives the car user no trouble. Write for folder giving complete description. We build magnetos for double ignition, and also alternating and direct current magnetos for all ignition purposes. Address Dept. 11.
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worth of experience behind the new
$1,500 MITCHELL
This price includes $300 worth of extra automobile value not included in other cars selling at this price. Learn what it is. Write to-day for detailed description.
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Standard Manufacturers A. M. C. M. A.

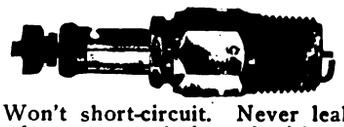
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15 cents per line of seven words, cash with order. In capitals, 25 cents per line.

WANTED—Position as advertising manager; have had years of experience in building catalogs, booklets, folders, etc.; also have a practical knowledge of printing values and all details in connection therewith. I hold similar position at the present time, but for good reasons desire a change. Address A. R. M., 1457 Wilson Ave., Chicago, Ill.

FOR SALE—300 sets 28x3 best grade artillery wheels, fitted with clincher rims, less hubs. Write for bargain prices on single sets of the lot. THOMAS B. JEFFERY & COMPANY, Kenosha, Wis.

The "Gotham" **STA-RITE** will end your spark plug troubles. Soot can't stick to the porcelain.



Won't short-circuit. Never leaks. Can be taken apart and cleaned with ease. Of dealers, or direct, $1.00.
THE R. E. HARDY CO., 25 W. 42d St., New York.

Listen for the knocks! The car they all knock is the one they are all afraid of The E-M-F. "30"— sure!

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The Simplest Automobile in the World.
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HESS-BRIGHT BALL BEARINGS
THE HESS-BRIGHT MFG. CO.
2109 Fairmount Ave., Philadelphia, Pa.

CLEVELAND SPARK PLUGS
"They Shoot a Flame."
CLEVELAND SPARK PLUG CO.
CLEVELAND, OHIO

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and blocks on the springs and movable in said guides.

894, 586. Pneumatic Pump. Albert Brest, New Castle, Pa. Filed Oct. 19, 1907. Serial No. 398,186.

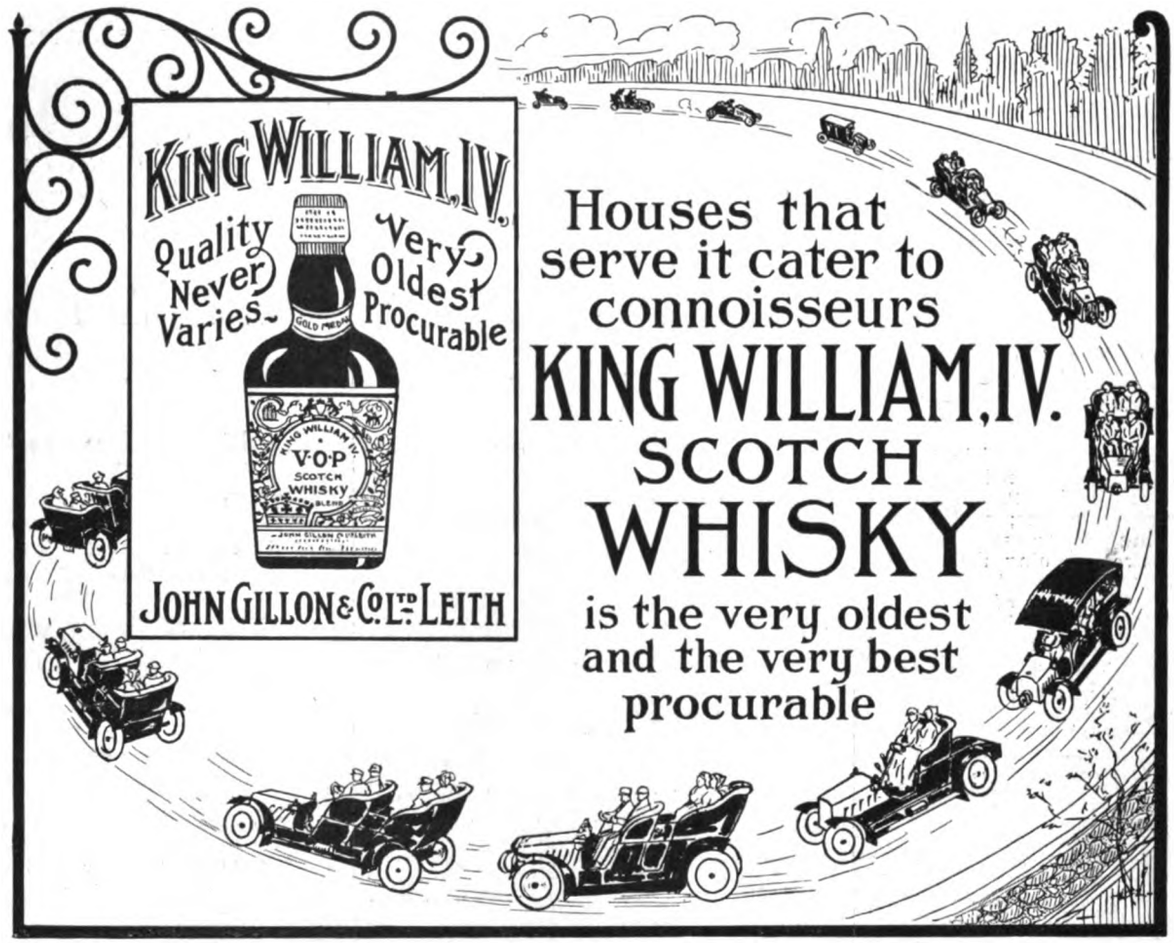
1. A pump attachment for pneumatic tires comprising a pump cylinder supported at one end on the wheel rim, a yoke sucured to the wheel hub centrally of the latter and to which the other end of the pump cylinder is connected, said yoke provided at its outer end with a bearing, a pipe communicating with said pump cylinder intermediate the ends thereof and having its outer end extended angularly and received in the bearing of said yoke, a frame fixed on the wheel hub adjacent one end thereof and provided near each end with a bearing, a shaft mounted in one of said bearings and carrying a crank, a piston within said pump cylinder to which said crank is connected, a piston arranged in the angularly extended portion of said pipe and having its rod extended through the other bearing of said frame, a clutch member rigidly fixed on the axle of said wheel, a second clutch member movably mounted on said axle and normally held out of engagement with the rigid clutch member of said piston rod, and a pinion on said shaft to engage with the movable clutch member when the latter is in engagement with the rigid clutch member whereby motion is imparted to the piston in said pump cylinder.

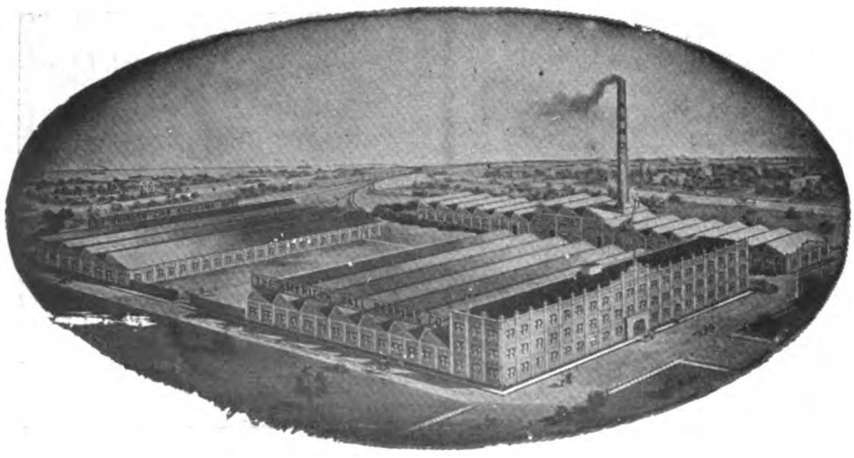
894,609. Wheel Specially Adapted to Receive an Auxiliary or Spare Rim. Thomas M. Davies, Llanelly, England. Filed Feb. 18, 1908. Serial No. 416,468.

1. In a wheel, the combination of a rim adapted to carry a pneumatic tire, and a laterally projecting flange fixed to such wheel and adapted to receive the clips carried by an auxiliary rim, substantially as set forth.

894,656. Carburetter for Internal Combustion Engines. John Johnston, Fulham, London, England, assignor of one-half to Harry William Buddicom, Penbedw, England. Filed June 3, 1907. Serial No. 376,948.

1. In a carburetter, a disc valve, a seating therefor, an air passage leading to the valve and oil holes leading to the face of the seating and adapted to be closed by the valve, said valve and seating having between them when the valve is open, a throat which first converges in the direction, substantially as described.





The output of complete Front and Rear Automobile Axles of this plant exceeds the capacity of all competition combined.

THE American Ball-Bearing Co.

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CLEVELAND, OHIO, U.S.A.

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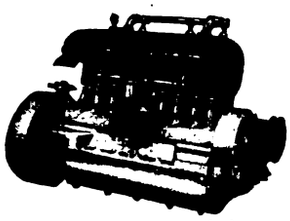
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which adds to the efficiency of the lamps, and keeps glare from blinding other users of the highways. Can be fitted to any existing lamp.

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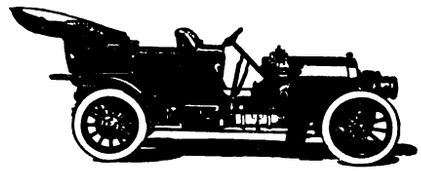
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"FIFTY"

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Touring Car, Baby Tonneau or Roadster bodies, with double ignition, $3,000.

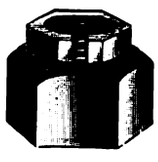
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SCHRADER
UNIVERSAL VALVES
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THE WORLD'S STANDARD
FIRESTONE TIRE & RUBBER CO., Akron, Ohio



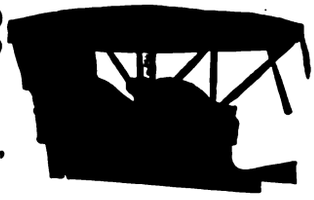
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New factory, Saginaw, Mich.
Complete catalogues now ready.
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Aluminum Bodies
SPRINGFIELD METAL BODY CO.,
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Full of Air.
Tire expense cut in two.
Cannot Blow Out, Rim Cut or Puncture.
As Flexible as Rubber Anti-Skid.
That part of a tire with a blowout or a rim cut in it will last longer than any other part if encircled by a few sections of steel.
Thousands in use.
Kimball Tire Case Co.
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Council Bluffs, Iowa

Why pay high prices
FOR ALUMINUM
Axle Covers, Engine Crank Cases, Transmission Cases.
Have these made of Pressed Steel
JUST AS LIGHT
Stronger. Much Less in Price.
Send Prints for Estimates.
A. O. Smith Co.
243 Clinton Street, MILWAUKEE, WIS.

Studebaker
Gasoline and Electric—for Pleasure and Business
Studebaker Automobile Co., South Bend, Indiana





Users of **INVADER OIL**
THE OIL THAT GRAPHITIZES
are responsible for its popularity
YOU NAME THE CAR WE'LL NAME THE GRADE
MADE ONLY BY
CHAS. F. KELLOM & CO.
113 Arch St., Philadelphia
Boston Branch: 284 Columbus Avenue.
New York Agents: Garford Motor Car Co., 1540 Broadway.

WE WILL NOT
accept your contract unless we can give you the delivery you require. We will not accept more contracts than we can fill with proper attention to each. We make Pressed Steel Frames and Automobile Stampings.
THE HYDRAULIC PRESSED STEEL CO.,
Cleveland, Ohio.

The PULLMAN
4-40 Roadster. Price, $3,000.
that made the run from Philadelphia to Savannah, Ga., March 5th to 18th, through mud up to the radiator, beating all previous records.
YORK MOTOR CAR CO., York, Pa.

MICHELIN
ENGLAND. ITALY. AMERICA.
MICHELIN TIRE COMPANY
MILLTOWN, N. J.

THE MARMON
"A Mechanical Masterpiece"
For catalog, address Dept. 16.
NORDYKE & MARMON CO.
(Estab. 1851) INDIANAPOLIS, IND.

Wico Adjustable Spark Plug
$1.00 Each
Guaranteed One Year



WITHERBEE IGNITER CO., 1876 Broadway, New York

THE MOTOR WORLD PUBLISHING COMPANY
154 Nassau Street, New York

Enclosed find $2.00 for which enter my subscription to
The Motor World
for one year, commencing with the issue of _____
Name _____
Address _____
_____

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THE National

WATCH FOR OUR 1909 ANNOUNCEMENT—It Will Interest You.

NATIONAL MOTOR VEHICLE CO., Indianapolis, Ind.

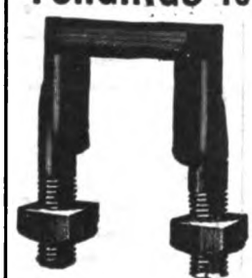


The Only Cure for Tire Troubles
The Only Genuine Spare Wheel
GET A
STEPNEY
AND KEEP GOING

Agencies in all the large cities. Catalogue B tells all about it. Write NOW.

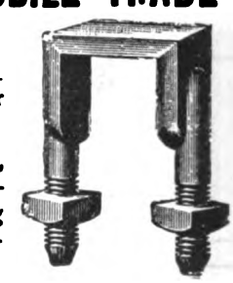
The Spare Motor Wheel of America, Ltd.
Main Office: 236 Michigan Ave., Chicago

FORGINGS for the AUTOMOBILE TRADE



Satisfaction Guaranteed

Thousands of our Spring Clips are now in use, having been supplied to the leading automobile manufacturers.



Have you secured our prices?

THE M. SEWARD SONS COMPANY, New Haven, Conn.



NEW ADJUSTABLE "S" PIPE

A very handy wrench for inconvenient places. Drop forged steel throughout, parts carefully hardened, and are interchangeable. Has patent nut locking device at side.

Write for new circular.

THE BILLINGS & SPENCER CO., Hartford, Conn.



For Automobile Bodies, Dashes, Guards, Bonnets, Battery Boxes, Drip Pans, Mufflers, Etc.

STRONG—DURABLE
SCALELESS—RUSTLESS
SMOOTH—PAINT ADHERES FIRMLY

A Metal That's A Time and Money Saver

THE STARK ROLLING MILL COMPANY, CANTON, OHIO

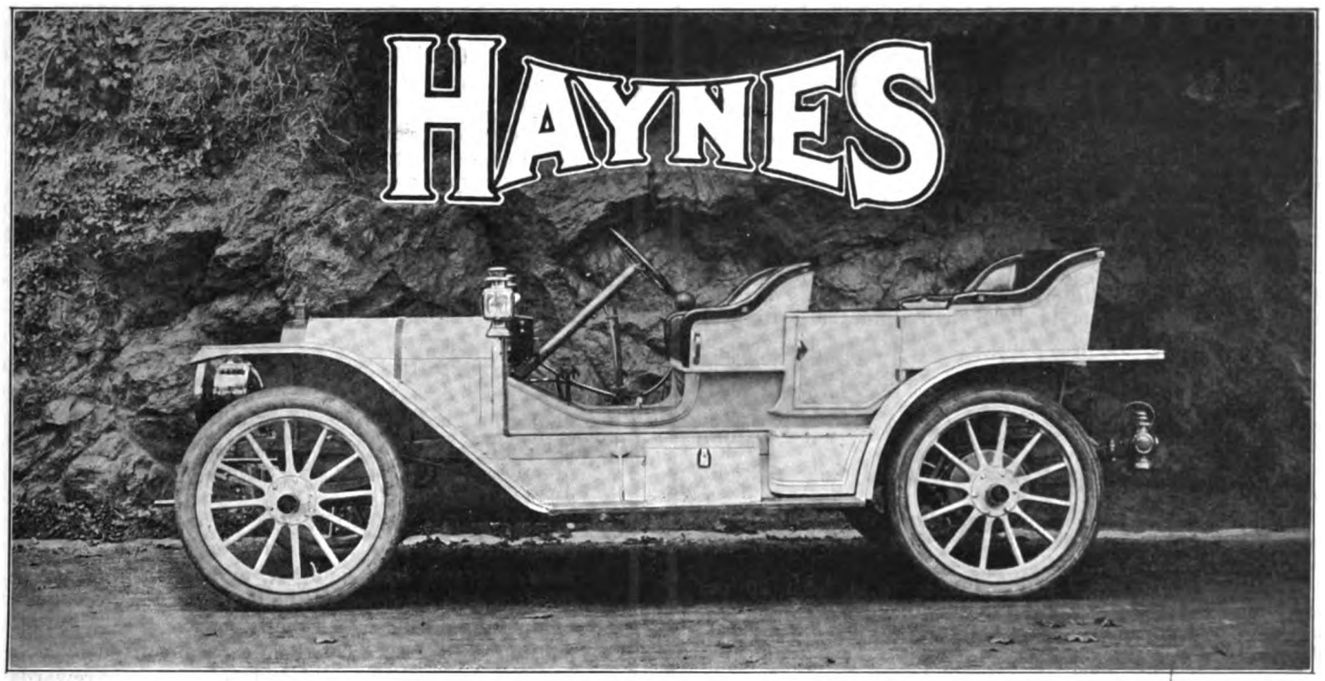
Model B—Brush Runabout

A CAR OF SIMPLE DESIGN MADE WELL
NOT A COMPLICATED DESIGN MADE CHEAPLY

Its records and the opinions of its users speak more loudly than self praise. Agencies for 1909 are being closed rapidly. Much good territory still open.

BRUSH RUNABOUT COMPANY, Detroit, Mich.

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1909 Model 45 H. P. Toy Tonneau, $3000

The Car They Copy

WHEN a car is only a copy of existing rivals, it is usually backed by inferior genius. The car to get is the one that is copied—the pioneer.

The Haynes is the oldest American car. Our model A was built in 1893. We gave to the world the large wheels, aluminum parts, side-entrance body, electric ignition and a host of minor features which are now universal.

The genius of Elwood Haynes who blazed the road of successful invention in the past is still with us, and the Haynes car is still ahead of them all in the superior development of various vital parts. The Haynes clutch, the ratchet gears, the roller pinion and sprocket direct drive, the two fly-wheels, the water-cooled brakes are all distinctive, and we expect that all automobiledom will copy them when the patents expire. But till then the Haynes is the car for the man who wants high power (45 H.P.) with direct drive, no vibration, ease of control and practically unending, unfailing serviceability.

AGENTS WANTED. If you have been agent for a maker that blew away in the late financial flurry, you will appreciate the opportunity to line up with a company that has survived the vicissitudes of fifteen years. Good territories this year for the right men.

SPECIFICATIONS OF THE HAYNES FOR 1909

Motor—4 cylinder, 4¼ by 5.
Water Cooled, with very large water jacket.
Drive—Shaft drive, with Haynes roller-pinion and sprocket at the rear axle, which minimizes friction and side thrust and eliminates noise entirely.
Clutch—Haynes patent contracting steel band upon bronze drum.
Carburetor—Latest type Schebler, water jacketed.
Lubrication—Gear driven McCord oiler.
Ignition—Bosch Magneto; also battery system with single coil and separate set of plugs.
Bearing—Roller bearings used throughout.
Tires—36 by 4 all around.
Transmission—Selective type, three speeds forward and reverse. Ratchet device makes gear stripping impossible.
Wheel base—112 inches. Tread—56 inches.
Body—Touring car for five or seven, or toy Tonneau, $3,000. Runabout or Hiker type, $2,900.
The Hiker type consists of two bucket seats with large gasoline tank on rear. Equipment includes Prest-O-Lite tank, baggage rack and tire holders.

HAYNES AUTOMOBILE CO., Kokomo, Indiana

Oldest Automobile Manufacturers in America. Member A. L. A. M.

NEW YORK, 1715 Broadway CHICAGO, 1702 Michigan Ave.

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The Truth About the Reduction in Tires

Some tire manufacturers, working in collusion, tell you that they are able to reduce the prices of their tires owing to a reduction in the cost of crude rubber.

It is a peculiar fact, however, that **other rubber goods** manufactured by these same firms **have not changed in price** for years.

Another of their arguments is "Increased Capacity"—and right here it may be interesting to note the prices of these concerns on September 1st., 1906, as compared with the present figures:

	Sept. 1, 1906.	Sept. 1. 1908.
28 x 3 in. tire complete	$34.32	$17.55
30 x 3½ in. tire complete	48.39	27.25
32 x 4 in. tire complete	60.00	38.80
32 x 4½ in. tire complete	73.35	49.20

Do you think increased capacity should make this difference? No!

Could the reduction be brought about through a reduction in the price of crude rubber? Yes. **But has rubber really been reduced?**

Crude Fine Up-River Para Rubber is at least **20 per cent. higher to-day than it has been any time for the past twelve months.** PECULIAR CONTRADICTION, isn't it? NOW FOR THE FACTS.

On August 12th, 1908, we refused to accept the proposition advanced by our competitors, to **muzzle free competition** in the tire trade by agreeing to adhere to a uniform discount—a scheme by which they attempted to recover from **dealers** and **consumers** and **losses entailed** by the conduct of their business in other quarters.

We were opposed to the Tire Pool; it was **we who fought** it and saw it "BUST" on September 1st, 1906, and we are still **opposed to every kind of tire combination.**

This short statement tells the TRUE story and the TRUE PURPOSE of the recent price reduction, which is to

Drive Out Competition

—Ajax competition we might add.

At the present prices of raw material neither the product of our competitors nor Ajax tires can be sold at the profit that is **legitimately** due the manufacturer. But in offering our own tires at correspondingly reduced prices we simply fight back with the **pocketbook argument.**

As far as our competitors are concerned, we warn the tire using public to

Look Out for the Cut In Quality

that usually accompanies the cut in price.

AJAX TIRES

ARE GUARANTEED FOR 5,000 MILES

A certificate signed by the President of our Company, and bearing the number of the tire, accompanies **every tire** sold, and on the back of the certificate is a table of adjustments by which every user of Ajax tires can compute the charge should a replacement be necessary.

There is no better recommendation for a tire than our 5,000 mile guarantee, because it puts the burden of proof upon us and we MAKE GOOD.

"See our exhibit at Grand Central Palace Show, opening in New York on New Years Eve."

Ajax-Grieb Rubber Co.

FACTORIES: TRENTON, NEW JERSEY

BRANCHES:

N. Y. City, 57th St. and Broadway.
Boston, 819a Boylston St.
Philadelphia, 316 No. Broad St.
Detroit, 743 Woodward Ave.
Chicago, 1418 Michigan Ave.
Kansas City, Mo., 1422 Grand Ave.
Denver, Colo., 1529 Cleveland Pl.
Seattle, 1102 Broadway.
San Francisco, 438 Market St.
Los Angeles, 1038 So. Main St.

Mongrel or Thoroughbred?

NOW IS THE TIME for you, Mr. Thoughtful Dealer, to decide what you will sell in 1909.

WILL IT BE A MONGREL? a car assembled from parts carried together from all over the country and hammered into shape as well as may be?

OR WILL YOU SELL THE THOROUGHBRED—a homogeneous mechanical masterpiece, every single part of which is the result of the same genius that devised the whole?

"ASTOUNDING," "MARVELOUS," "WONDERFUL," are the terms with which some assembled cars are now tagged, though they are astounding, marvelous and wonderful only to the assemblers, who like Rip Van Winkle, have been dozing in the growing woods of automobiledom and who now, bewildered by the progress that has been going on, seize upon time-tried and long-established practices and herald their adoption by the assemblers as brand-new discoveries.

LET'S REASON IT OUT: On the one hand you have the assembled car, with an engine bought from one manufacturer, a frame from another, and a transmission from a third, and so on down to the last rivet. The maker of the engine, the mill in which the frames are pressed, the transmission man, all derive their separate profits, leaving no other way to the assemblers to obtain their rewards than by skimping the quality of their "product."

AND THEY DO IT—THEY MUST! When you examine some of these astounding cars you will be truly astounded on finding that the four-cylinder engine is cast in one piece and has only two main bearings, whereas the Maxwell has four cylinders and five main bearings. You know well enough that making a motor with only two bearings is equal to leaving the engine to its own devices as far as alignment is concerned.

IT WILL BE A TOUGH JOB FOR THE DEALER to convince the purchaser who is wise that some four-cylinder engines of small dimensions will develop as high as 30 horsepower—because they can't.

MAXWELLS ARE A HOME-GROWN AMERICAN PRODUCT. The use of Maxwell features in Maxwell cars was neither a heaven-given inspiration nor the aping of foreign design, but the outcome of sound engineering sense.

WHEN 10,116 MAXWELL OWNERS testify to the excellence of their cars, all of which have been sold by Maxwell dealers, then the Maxwell proposition is one that you can't afford to pass by.

BEFORE HITCHING YOUR WAGON TO A STAR it will be wise for you to find out all about a dealership for Maxwells, the success of which is past and present, instead of lying in the dark and distant future that has swallowed so many wonderful cars that have been marvelous chiefly in their complete and rapid disappearance from the field of legitimate competition.

Benj. Briscoe

President.

MAXWELL-BRISCOE MOTOR CO.

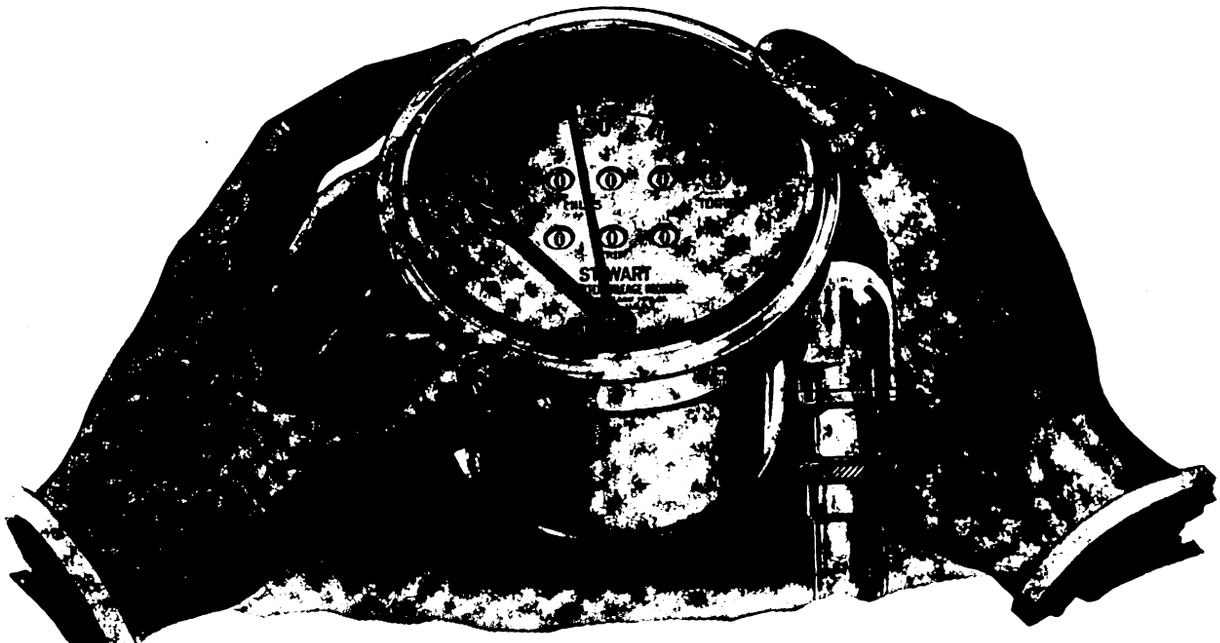
Standard Manufacturers A. M. C. M. A.

P. O. Box 106, Tarrytown, N. Y.

Factories: TARRYTOWN, N. Y. NEWCASTLE, IND. PAWTUCKET, R. I.

Address communications to Tarrytown, N. Y.

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Always On the Job.

Is It Always On the Job?

This is the only truly satisfactory test of a reliable speedometer. **Stewart Speedometers** are famous for being **"always on the job."** You can put them on your car and forget them, so far as attention is concerned, as **THEY WILL OUTWEAR THE CAR.**

One of our Cleveland customers writes as follows:

I have had one of your Speedometers on my car for the past two years AND FIND IT PERFECT. Before purchasing a Stewart I had a ..... indicator which went to the bad. Then I tried a ..... It was no time before the flexible shaft went to the bad. They put on another shaft which did no better.

I Then Got a Stewart

The Odometer today shows 35,462 miles and I have never touched it

WHEN YOU EQUIP YOUR CAR WITH A STEWART SPEEDOMETER YOU CAN FORGET YOUR SPEEDOMETER TROUBLES. "They are always on the job." That's why we can GUARANTEE them for five years. All models equipped with the famous Stewart flexible shaft and patented swivel joint, at $40, $25 and $15. Send for catalog.

Stewart & Clark Mfg. Co. **509 Diversey Boul., Chicago, U.S.A.**

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THE SELDEN CAR FOR 1909

Enters upon its second year with a clean record. No "first year" car has ever earned a better reputation or made a better showing.

THE CAR OF MODERATE PRICE

$ 2 0 0 0

Touring Car **Roadster**
Limousine **Landaulet**

4 cylinder, 28-30 horsepower, shaft drive, selective transmission, metal body, pressed steel frame, excellent hill climber, fine finish and style, roomy tonneau, luxurious upholstery, easy riding, smooth running, economical in up-keep, in fact, a high grade car in every particular.

The "Silent Selden"

1909 MODELS READY IN SEPTEMBER

Agency propositions now ready. Send for catalog and specifications.

Selden Motor Vehicle Co.

ROCHESTER, N. Y.

Member A. L. A. M.

Matheson

1909

Prices Reduced $1,000

And the Reasons Why

Heretofore the Matheson Car has been considered the highest priced as well as the highest grade American car on the market.

Millions of dollars worth of these cars have been delivered to customers who could afford to pay the higher price for the best.

Many other purchasers have been persuaded that some of the lower priced cars have been "just as good." Matheson owners who have used other makes of cars have answered that question satisfactorily. Send for their letters, which we have done up in a book.

In order, therefore, to still maintain the unequalled quality of the Matheson Car and at the same time give customers this magnificent car at the price of the cheaper cars, the makers have figured that by doubling the factory output and selling at a much closer margin of profit, the price of the Matheson Car equipped with Touring, Landaulet or Limousine bodies, could be cut $1,000, and the same chassis, equipped with Roadster or Tourabout bodies, cut $650.

Accordingly, the Company's working capital has been increased by $350,000, and after October 11, 1908, the purchaser can buy a genuine Matheson Car, the very finest of all motor cars of either European or American make, at the makers' former prices to the agent or dealer; namely:

	New Price	Former Price
50 H. P. 1909 Touring Car	$4,500	$5,500
50 H. P. 1909 Roadster	4,350	5,000
50 H. P. 1909 Tourabout	4,350	5,000
50 H. P. 1909 Limousine	5,500	6,500
50 H. P. 1909 Landaulet	5,500	6,500

VICTORIES

The great string of Matheson victories in the important speed, hill climbing and endurance contests of the past seasons, in competition with the greatest cars of Europe and America, can leave no room for doubt that the Matheson car has no peer on any market to-day.

GUARANTY

Every Matheson is guaranteed for 365 days. (Notice that most other cars are guaranteed for 60 to 90 days only.)

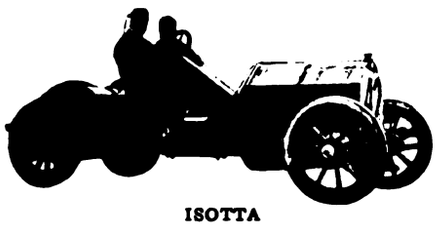
MATHESON AUTOMOBILE COMPANY

Main Sales Office, 1886-1888 Broadway, New York City

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Auto-Meter Wins Again

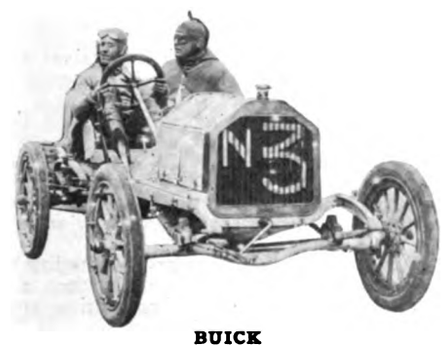
Once More Shows its Right to "First Place." In the Motor Park Way Sweepstakes the Auto-Meter assisted these winners in their respective classes.



ISOTTA



CHALMERS-DETROIT



BUICK



ALLEN-KINGSTON

Nassau Sweepstakes—Buick. Driven by Hugh Easter.

Jericho Sweepstakes—Chalmers-Detroit. Driven by W. R. Burns.

Motor Parkway Sweepstakes—Isotta. Driven by Herbert Lytle.

First; Meadow Brook Sweepstakes—Allen Kington. Driven by H. Hughes.

Second; Meadow Brook Sweepstakes—Rainier. Driven by L. A. Disbrow.

NOTE WHAT MR. DISBROW SAYS:

"I want to express my sincere appreciation of the wonderful accuracy and reliability of the Warner Auto-Meter, with which my Rainier car M 32, an entrant in the recent Meadowbrook Sweepstakes, was equipped. The car finished second, two minutes behind the winner, the distance, 211 miles over the Vanderbilt Cup Course, averaging 52½ miles per hour.

"I am enclosing the time by laps, and I wish you to note that the variations that for the nine laps is hardly a variation of one minute between them. Such consistent running would have been almost impossible without the assistance of your instrument. Its accuracy was simply wonderful, and I can assure you that the next race I drive my car will certainly be equipped with a Warner, as I consider it the most reliable and accurate instrument manufactured.

"Wishing you all the success you most certainly deserve, I am, sincerely yours,

"(Signed) LOUIS A. DISBROW."

PROOF OF AUTO-METERS SUPREMACY:

The man behind the wheel is the man who knows—take his word for it!

Think of the accuracy of the Auto-Meter in time for each lap—hardly a variation of a minute between them.

For reliability and accuracy the Auto-Meter has no rival; its record is never disputed now—the standard time and speed guage by which others are judged.



It is known throughout our motordom because absolutely dependable. The best cars everywhere are equipped with Auto-Meters because the Auto-Meter record is infallible. Not "nearly"; no guess work, but to the fraction of a minute or the fraction of a mile it is exact.

Write for more details and arrange for a trial of the Auto-Meter.

WARNER INSTRUMENT CO.

FACTORY AND MAIN OFFICE

296 Wheeler Avenue - BELOIT, WIS.

PHILADELPHIA—Cor. Broad and Race. LOS ANGELES—1124 S. Main St. CLEVELAND—2062 Euclid Ave. BUFFALO—722Main St.
SAN FRANCISCO—550 Golden Gate Ave. NEW YORK—1902 Broadway. PITTSBURG—3432 Forbes St. ST. LOUIS—3923 Olive St.
INDIANAPOLIS—330½ N. Illinois St. CHICAGO—1305 Michigan Ave. BOSTON—925 Boylston St. DETROIT—239 Jefferson Ave.

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DOES THE PUBLIC KNOW?

A Frank Talk Between Two in the Trade

A COMPETITOR SAID TO US the other day—he's one of the biggest manufacturers in the business and feels keenly the force of E-M-F. "30" success—"It's simply marvelous that you fellows can sell Blue Sky—'a car on paper'—as you do! Why, it's incredible—or would be if I didn't know from my own travels and observations that it's a fact.

"THE E-M-F. '30' IS THE RAGE EVERYWHERE—the buying public has simply gone foolish over it. In a dozen cities it is already at a premium—and not a dealer has a demonstrator yet, nor will have for ten days. We find it almost impossible to sell our stuff—those who havn't ordered E-M-F. Cars insist on waiting till they see it!"

THIS WAS A CANDID STATEMENT by one man in the trade to another. So we enlightened him—not too gently, perhaps, but frankly—telling him facts he knew in his heart to be incontrovertible. "You know and we know the E-M-F. '30' is the best value in an automobile the world has yet produced—that's the real reason."

"BUT OUR CAR HAS A REPUTATION," he said. "For what?" we asked. He didn't reply—for this was a candid conversation between two men in the trade. So we continued: "You tried to sell the same car last season for $2,000—and couldn't. This year you cut the price to $1,400 and sold a few—then the E-M-F. '30' was announced. The worst you can say about your this year's model is that it is like its predecessor."

"BUT THE PUBLIC DOESN'T KNOW what you and I in the trade know," he protested. "That's just where you miss the mark," we said; "the public—the automobile buying public—does know. They know the reputation of the men behind the E-M-F. Car, and the more they know of that the more eager they are for the car." Does not the public know—

SAY THAT HERRESHOFF WILL DESIGN A YACHT—the world will wager ten to one it will win the Cup. Say that Belasco will write a play—the ticket speculators will get busy. Say that Kipling will write a poem—the output of the print-shop will be contracted for before the first stanza is penned. The public does know!

SAY THAT "WILL" KELLY WILL DESIGN A MOTOR—the Automobile world will wager it will develop more power than any other combination of cast iron and aluminum any other engineer can design—and Kelly designed the E-M-F. "30." "But Kelly hasn't always—" "No; Kelly hasn't always had a Flanders to complete his work"—that's the answer.

SAY THAT FLANDERS WILL MANUFACTURE A CAR from Kelly's designs—every other manufacturer will brace himself for the contest of his life—they know their master.

SAY THAT EVERITT WILL FASHION THE GOWN—make the body—for Kelly's chassis; that's equivalent to saying the coach-work, the outward appearance, will be in keeping with the mechanical excellence of the car.

SAY THAT METZGER WILL MARKET THE OUTPUT—that guarantees every car will "stay sold"—if the Golden Rule in practice stands for anything.

THE PUBLIC DOES KNOW. That's a fact so firmly believed by the men who make the E-M-F. "30" car, every detail of design, every piece of metal that enters into the construction; every plank in the sales policy; is designed to withstand the bright light of day—the closest scrutiny of judicious buyers—the sharpest probes of envious rivals.

DO WE SELL BLUE SKY?—then did the Cunard Steamship Co. purchase a large chunk of that same commodity when, a few years ago, it contracted to pay fourteen or fifteen million dollars for two steamships of which not a trace was yet on paper—of which the only tangible thing was the reputation, the experience, the organization and the facilities—not to say mechanical and commercial integrity—of the men who contracted to deliver the goods.

A FELLOW BY THE NAME OF FROUDE—with the assistance of some other engineers and draughtsmen such as Kelly has—made the drawings and specifications. He didn't show the Cunard Company a blue print—didn't even agree to give the directors a demonstration. He said the two boats—which, by the way, were to be made in two separate yards by two companies, one at Clydesbank, in Scotland, the other at Wallsend-on-Tyne—would be bigger; carry more passengers more comfortably; and cross the Atlantic quicker than any other boats ever built. And the Cunard Company bit.

FROUDE TOLD THE CUNARD COMPANY that the empty hulls would draw 21 feet, 6 inches of water (figures may not be exact, but that's a detail). With engines in they'd draw 29 feet 4½ inches; and with maximum freight and passenger load, 37 feet 6 inches. He gave them the other specifications and told them to 'go ahead with the catalog.'

FROUDE BUILT THE BOATS; he painted them while on the ways; and he divided the colors, the blue and the red, at a point where he said the water-line ought to be. And lo! when they slipped from the ways and settled in the water, the blue of the boats just melted into the blue of the ocean at the point where Froude had said. Wonderful? —not at all—just knowing.

DID THE CUNARD COMPANY DOUBT at first that Froude and his associates would make good? Here's what they did:—called in the advertising manager and told him that three years from next September seventh a boat by name Lusitania would sail from Southampton for New York and on November sixteenth following another, Mauritania, would sail—and he'd better be getting busy on a new time-table.

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THE REST IS HISTORY; the two boats did sail—they did break all records; and to show you the Public does know, every state-room was booked months in advance by live ones who wanted to be in at the record making—same kind of people who have bought more than half the output of E-M-F. "30" Cars before the first one was shipped.

NO! THIS IS NOT A STEAMSHIP AD—it's an E-M-F. "30" Ad. We just want to tell you that automobile designing and manufacturing by men such as those who have agreed to deliver E-M-F. cars is just as much a science—is just as devoid of elements of guess and chance—as is steamship building from Froude's designs, by the big yards of England and Scotland.

THE ENTIRE 1909 OUTPUT OF E-M-F. "30's" IS SOLD—every car alloted to our various distributing agents, sub-dealers, and the Studebaker Automobile Company.

STUDEBAKERS BOUGHT 6,000 CARS—and the deal was closed before the drawings were complete. The Studebaker Company thereby backed the reputation of our own organization with its splendid reputation.

BUT WE ARE NOT HALF SO PROUD of the fact that 12,000 cars have been contracted for by dealers as we are of that other more startling fact that thousands of cars—fully half the allotment of every dealer—have been sold to individual users—$100 cash deposit paid and delivery date fixed for each car.

SAN FRANCISCO HAS SOLD 835 CARS—and the latest report is several days old. A man who has an order in there for an E-M-F. "30" Car, with delivery date any time in March can readily sell his place in line for $100. January deliveries are worth $200; and offers of $300 for December options go a'begging at the price.

PHILADELPHIA IS CALLED A CONSERVATIVE TOWN. It is conservative—it's the best E-M-F. town on the map. Foss-Hughes Company have sold over 125 of their allotment of 250 cars and are adding to the number at the rate of five a day.

BLASE BROADWAY—BROADWAY THE WISE—has simply gone into ecstacies over the E-M-F. "30." Herman Koehler, who has sold more automobiles in the last five years than any other retail dealer in the world, says he never saw the like before. Man came in the other day and said, "But I want to get one at once—next week anyhow." Koehler smiled; "just down the street a block—another place in the second block—you can get all you want. They have 'em in stock there—likely to keep them, too." Man tried to push his way out thru the crowd—couldn't.. Then it occurred to him why the crowd was there, and he gave Koehler an order for "earliest delivery you can make."

GITHENS BROTHERS OF CHICAGO—most conservative dealers on the Row they say—had sold 118 cars up to last Wednesday—rate they were going then Chicago will have overtaken Philadelphia by now. Walter Githens writes, "If our demonstrator doesn't arrive November 15th as scheduled we won't need it—we'll be sold out."

BOSTON—STUDEBAKER BRANCH—REPORTS: "We sell an E-M-F. "30" every hour on the average. That's going some. Boston won't need more than an eight-hour day to dispose of its allotment in short order at that rate. But Boston is naturally an E-M-F. town—always was strong on pedigrees, and down there they call the E-M-F "30" the Blue Blooded Car."

MINNEAPOLIS BOUGHT 400 with an option on 100 more "till New York Show Time." Sold out in 60 days. Took up the option a month ago and has sent three emissaries to Detroit the last week in efforts to persuade us Minneapolis has been slighted—ought to have 1,000; willing to compromise on 500.

WE MIGHT NAME 500 DEALERS who are handling the E-M-F. "30"—it would be the same story. Have to look at the postmark to see which one is asking for more—letters all read as if dictated by the same person:—"Over half our allotment sold already and no demonstrator—what will we do when it comes; can't we have just a few more?"

PORTLAND, MAINE—AND PORTLAND, OREGON—the same story. Atlanta—and Albany. Buffalo, Empire State—and Boone in the Corn Belt—E-M-F. "30" has the call—all others waiting till we have sold out." San Antonio—and Syracuse—ditto. Xenia and Youngstown and Zanesville all asking us to make 12,000 cars spread over a 25,000-car demand.

ARE WE SELLING BLUE SKY?—If we are, then we're selling it with the best guarantee that ever went with an automobile—a guarantee of entire satisfaction or your money back when you see the car—and a guarantee of fair, liberal, generous treatment afterward.

THE ONLY MAN WHO TAKES A CHANCE is the man who doesn't get a place in the line-up near the front—an option on early delivery. He can get out any time—get a premium for his position if he is willing to accept a later delivery. And he can get any one of the several competing makes on the minute—they have them on the floor now and most of 'em will stay there. The public does know—and it knows no other organization can compete with this one—none can deliver a car of this quality at anywhere near the price of the E-M-F. "30."

THE LUSITANIA WILL SAIL ON TIME—and every E-M-F. "30" will be delivered according to schedule—the only thing that can delay your car will be that you let too many get ahead of you in the line. Want a specification sheet and an order blank? We'll mail them if you ask. It'll be a satisfaction to say you were on board when the world's record was broken.

EVERITT-METZGER-FLANDERS CO.,
Detroit, Mich.

E-M-F. "30" **WITH MAGNETO, FIVE LAMPS AND GENERATOR** **$1,250**

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A CHALLENGE RACE~WON ON TIMKEN BEARINGS



AND FRONT AND REAR AXLES

These photographs show two examples of road conditions encountered by the York Motor Car Co.'s "Pullman" during its challenge race from Philadelphia to Savannah under the auspices of the Quaker City Motor Club. They say:

"The cars left Philadelphia March 5th, and covered a distance of 1,400 miles over such roads as photographs show you and which took them 14 days. In some places we could make only 10 miles a day. DURING ALL THIS TRIP WE NEVER RE-PLACED A BEARING OR HAD ANY TROUBLE WHATEVER WITH THE DRIVE SHAFTS. This car is still running and has possibly covered 10,000 to 12,000 miles. After the car was driven back to the factory without any work on it whatever, it made a trip from York to Philadelphia and New York and is still running in Newark, N. J. We were awarded the race, having covered the full course as laid out by the Q. C. M. C. WE CANNOT SAY TOO MUCH FOR THE TIMKEN ROLLER BEARING AXLE CO.'S PARTS."

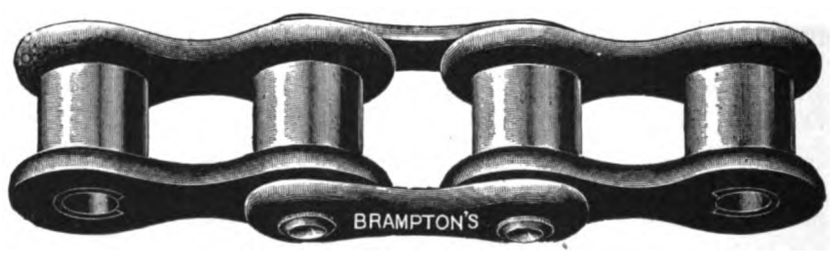
A Statement of Fact—Not Advertising Buncombe.

Every Manufacturer, Dealer and Owner should have our illustrated books and other information on Auto Friction Bearings, for every movable part, Power Axles, Brakes, etc. Free on request.

THE TIMKEN ROLLER BEARING AXLE CO. Factory and Main Office **Canton, Ohio**

New York Office, 10 East 31st Street. Chicago Office, 429 Wabash Ave.

THE BRAMPTON MOTOR CHAIN



All side plates on both sides of the Brampton Chain are stamped "BRAMPTON."

LARGE SALES and SMALL PROFIT with thousands of satisfied customers is our best advertisement. THE BRAMPTON CHAIN is made of self-hardening Steel; the strongest Chain in the World. All parts polished; fits sprockets (that are properly cut) without friction.

Some of the other chains may look like THE CELEBRATED BRAMPTON CHAIN because some of the other chain makers began to copy the design and shape of the BRAMPTON CHAIN links in 1904. They have improved somewhat on their copied design from time to time until these chains now look more like the BRAMPTON CHAIN than ever before. These chains somewhat resemble the BRAMPTON in appearance, but the manufacturers of such chains have been unable to copy the material —self-hardening steel.

NO CHANGE IN THE BRAMPTON

There has been no change in the design, construction, material or finish of the BRAMPTON MOTOR CHAIN in the past ten years.—"ENUF SED."

PRICE

The price being equal, it's presumable you want the best, and full value for your money. In such cases, the BRAMPTON FILLS THE BILL, and the prices are the same to manufacturers, jobbers, dealers and consumers as any other chain of equal size. We have in stock chains to fit all American and foreign cars.

YOUR 1909 CAR

You can have the new car that you order fitted with the CELEBRATED BRAMPTON CHAIN if you order it that way. No extra cost to either you or the manufacturer. All standard sizes in stock to fit American and Foreign Cars at the same price as the other chains.

SPECIAL CHAINS TO FIT THE INDIAN MOTORCYCLE.
Agents wanted in unoccupied territory. Catalog on request.

Manufacturer, Jobber, Exporter and Importer

CHAS. E. MILLER, Main Office: 97-99-101 Reade Street, **New York**

BRANCHES: 54th St. and 8th Ave., New York. 203-204 Columbus Ave., Boston, Mass. 318-320 N. Broad St., Philadelphia, Pa. 227½-229 Jefferson Ave., Detroit. 1829 Euclid Ave., Cleveland, O. 1392 Bedford Ave., Brooklyn, N. Y. 824 Main St., Buffalo.

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Locomobile

Establishes American Supremacy in Automobiles

Wins the Vanderbilt Cup

The Greatest International Road Race ever held in this country and the supreme test of reliability and endurance.

258 MILES IN 240 MINUTES

OVER A SLIPPERY COURSE

Locomobile No. 16 was first; Locomobile No. 1 would have finished in third place, but the race was called off after two cars had finished. At this unexpected announcement touring cars came out on the course, and as No. 1 Locomobile neared the Grand Stand on its last lap it came in collision with a car 25 YARDS FROM THE TAPE. The Cup Commission had notified the drivers before the race that five cars would be allowed to finish. Out of 19 entries, of which 7 were foreign cars, LOCOMOBILE RAN FIRST AND THIRD. Two cars placed. Something heretofore unknown in any contest for the Vanderbilt Cup. No trouble of any sort was experienced on either of the two cars except from the tires, which were of the anti-skid variety, necessitated by the slippery course.

Made the Fastest Lap

The Locomobile No. 16, driven by Robertson, made the fastest lap—23 45-100 miles—in 20 minutes and 17 seconds. It also ran 5 other laps in less than 21 minutes each. ITS AVERAGE SPEED DURING THE RACE WAS 64 3-10 MILES PER HOUR, INCLUDING ALL STOPS. THIS SMASHES ALL RECORDS FOR THE VANDERBILT CUP, no previous average reaching 62 miles per hour.

Both cars are of 90 h. p. and are substantially the same as our regular stock product, the difference being one of dimensions, so that the victory stands as a splendid triumph for Locomobile design and construction—a triumph for the Locomobile low-tension ignition system, the Locomobile magneto, the 4-cylinder motor, the selective transmission system and other features of the car. The material used in our regular product is everywhere as good and in some places even better than that used in the cars entered in the race AND WHICH WERE BUILT IN 1906.

The consistent performance of the two Vanderbilt Cup Locomobiles is but a repetition of the performance of the two entries in the great Founders' Week Stock Car Race in Philadelphia, October 10. This great race was won by a 40 h. p., 4-cylinder Locomobile, regular in every way.

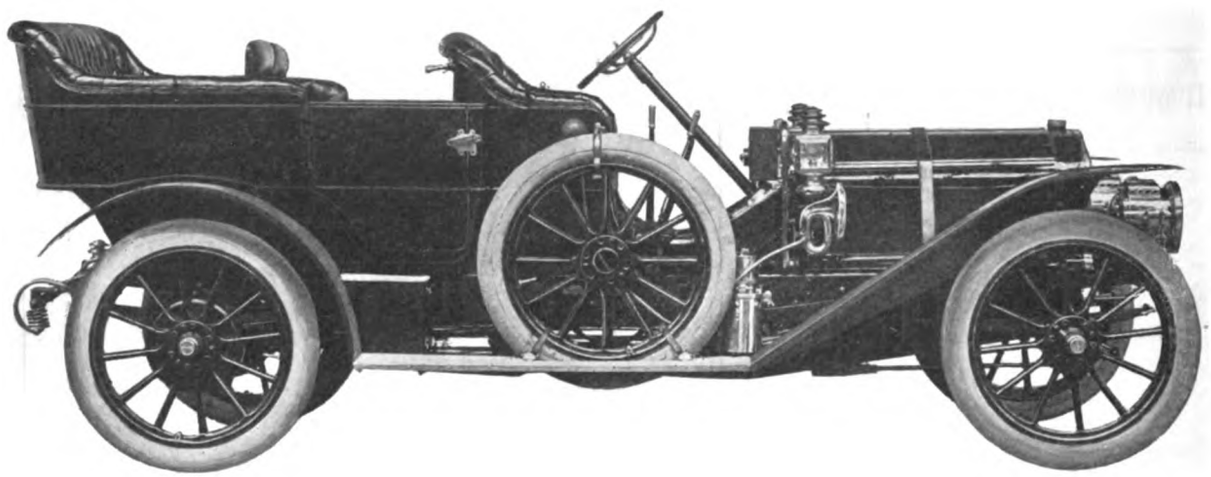
THE LOCOMOBILE CO. OF AMERICA

BRIDGEPORT, CONN.

MEMBER OF ASSOCIATION LICENSED AUTOMOBILE MANUFACTURERS

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THE Rambler SPARE WHEEL



Rambler 1909 Model Forty-Five With Spare Wheel Attached.

The Tire Problem Solved

The Rambler spare wheel for Ramblers only. An inflated tire attached to the rim ready for any tire difficulty; an extra wheel available in case of need.

Provision for instant change of wheel and tire; only six nuts to remove.

Wheel with inflated tire can be changed in three minutes.

The wheel, an inflated tire, brackets and straps and special tools to facilitate the exchange of wheels: for Model Forty-four, $74.00; for Model Forty-five, $85.35.

THE CAR OF STEADY SERVICE

THOMAS B. JEFFERY & COMPANY

Main Office and Factory, Kenosha, Wisconsin.

Branches and Distributing Agencies: Chicago Milwaukee Boston New York San Francisco

Representatives in all leading cities.

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, November 5, 1908. No. 6

MERGER RUMORS BRING DENIALS

Story of Combine, Backed by Morgan, Fails of Verification—Buick to Make Chassis for Olds.

Persistent but conflicting rumors of mergers involving the names of the Buick, Maxwell-Briscoe, Oldsmobile, Everitt-Metzger-Flanders, Cartercar and Pope-Toledo interests had a further stirring up last week by the publication of dispatches from Detroit, Mich., announcing the practical completion of an automobile combine by J. Pierpont Morgan, in which all the concerns mentioned were to be included. With much circumstantial account, the name of the consolidation was given as the General Motors Co., and its capitalization of $12,000,000.

Previous announcement of the proposed formation of the International Motor Co., to include the Maxwell-Briscoe, Buick and other interests and which was to have the support of Morgan's sons-in-law, while having no subsequent confirmation, prepared the way for the later rumor.

Negotiations looking to an arrangement between the Maxwell-Briscoe and the Buick companies are known to have been in progress for some little time, but a combination between them is not looked for at present. Whatever merger plans the Buick company may entertain just now appear to be in connection with the Olds Motor Works, at Lansing, Mich. It is known that for the coming year the relations between the companies will be so close as to include the making of the chassis for the Olds $1,200 model at the Buick factory. The presence of several mysterious visitors at the Olds plant, and the fact that the company has taken this time to close its books and take inventory instead of in December, as usual, has lent support to the idea that a sale or consolidation is likely, but two weeks ago F. L. Smith the president of the company, upon being consulted over the long distance phone by the Motor World, asserted that there was nothing for him to deny concerning a consolidation because nothing of the sort was in prospect.

In an endeavor to learn at first hand from the parties interested, their relations to the rumored merger, and to put each of them on record, the Motor World yesterday sent to each the following telegram:

"Any truth in Detroit news dispatches concerning your connection with General Motors or International Motor mergers? Please wire reply quick."

Replies had been received from three out of the five companies, at the time this issue went to press, as follows:

The Maxwell-Briscoe Motor Co., of Tarrytown, N. Y., replied: "No information here of any merger."

The Cartercar Co., of Pontiac, Mich., wired: "No. Reports without foundation."

The Everitt-Metzger-Flanders Co., of Detroit, Mich., answered: "Please say Everitt-Metzger-Flanders Co. has no connection whatever with General Motors or International Motor mergers."

Only the Olds Motor Works and the Buick Motor Co. failed to avail themselves of the opportunity to affirm or deny delations or prospects.

To Sell Hagerstown and Elyria Plants.

Offers have been made to the receivers of the Pope Mfg. Co., of Hartford, Conn., for two of the company's plants. For the Hagerstown (Md.) factory a bid satisfactory to the receivers has been tendered by the Montrose Metal Casket Works, of Philadelphia, and a court order will be asked permitting its acceptance. Negotiations are also in progress for the sale of the Garford saddle plant at Elyria, O.

Kesser is Hartford Sales Manager.

Franklin Kesser, formerly of the Philadelphia branch of the Hartford Rubber Works Co., has been appointed sales manager at the Hartford office. While having general direction of the sales campaign, his work will be under the direct supervision of the officers of the company.

RAINIER IN RECEIVER'S HANDS

Saginaw Factory Attached by Sheriff—Bankruptcy Proceedings Filed by Three of the Creditors.

Following a number of suits brought by creditors, a petition in bankruptcy was filed on Wednesday against the Rainier Motor Car Co., with salesrooms at Broadway and Fifty-sixth street, New York City, and factory at Saginaw, Mich. The liabilities are estimated at $200,000, of which $50,000 is secured. The factory at Saginaw has been attached by the sheriff, on a claim of the Auto Crank Shaft Co., and business there is entirely suspended.

The petitioning creditors are Pembroke C. Chrysler, $468 for commissions; J. J. Higgins, $549 for commissions; and the Hartford Suspension Co., $262 for merchandise, represented by Griggs, Baldwin & Pierce, attorneys. Judge Hough, of the United States District Court, has appointed Jesse Watson receiver.

John T. Rainier, president and treasurer of the company, previous to forming the present organization, was particularly successful in marketing a "Rainier" model made to his order by the Garford Co., of Elyria, O., the car enjoying great popularity in New York City at a very profitable retail price. Last year, however, the new company was formed to manufacture Rainier cars. It was incorporated March 7, 1907, under New York laws, with $1,000,000 capital, of which $800,000 is common stock and $200,000 preferred. Accepting a bonus and factory site offer from Saginaw, Mich., the company commenced making its own cars there.

George Carlton Comstock, attorney for the company, asserts that the concern is solvent, is only temporarily embarrassed and expects to come out all right if given a little time. He declares the normal assets to be larger than the liabilities and that the real assets are at least $200,000.

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In the Retail World.

A. Koyen and William Burtz have rented the Rees concrete building on Fifth street, Tremont, Neb., where a garage and a bicycle repair shop will be conducted separately. Koyen will manage the automobile department.

The Belmore, MacDougall, Moores Co., of Portland, Ore., has moved from Sixteenth and Alder streets to the corner of Seventeenth and Alder. The new garage has three floors and is much larger than the old one.

The ownership of the Central Garage, of Buffalo, N. Y., has changed. The establishment, which is located at 22-24 West Utica street and which was formerly known as the Utica Auto Station, has been bought by J. G. Lewis, and D. L. Walker.

The Jaynes Auto Supply Co., of Buffalo, N. Y., has expanded to "international" importance. W. C. Jaynes, the proprietor, has opened company branches at 19 Alice street, Toronto, Ontario, and 561 Main street, East, Rochester, N. Y.

Charles E. Miller, 1829 Euclid avenue, Cleveland, O., has been appointed a distributor for Continental tires. He will supply both the tires and demountable rims of the Continental Caoutchouc Co., of New York, at the prices obtainable at the home office.

The Consumers Auto Supply Co., Seventh avenue and Smithfield street, Pitsburg, Pa., has taken the agency for Empire tires, made by the Empire Automobile Tire Co., of Trenton, N. J. The arrangement is expected greatly to increase the demand for Empires in western Pennsylvania.

Chase & Ludington, agents in San Diego, Cal., for the Rambler, proclaim their new garage, on Second street near A street, as the finest structure of the kind in Southern California. The building is of concrete, and contains salesrooms, offices, storage floors and a well equipped repair department.

The Ellicott Garage, 988 Ellicott street, Buffalo, N. Y., in addition to general repairing and remodeling of cars, has branched out to build bodies. This branch of the business will be known as the Ellicott Body Co., and a two story brick building has been built, in which suitable machinery is now being installed.

Woods R. Woolwine and Charles S. Anthony have formed a partnership in Los Angeles, Cal., under the name of the Big Four Automobile Co. At present the company is located at 112 East Ninth street, but will later move to a building which is being planned for a site on Olive street, between Twelfth and Thirteenth streets.

The Berrodin Rubber Co., of Philadelphia and Buffalo, has been incorporated under a state charter, and under the reorganization has elected the following officers: Willard A. McCalla, president; Martin E. Brigham, vice-president; Henry K. Buck, secretary, and Frank Berrodin, treasurer and general manager. The management of the Buffalo branch has been given to William Q. Cramp.

Davis Takes Garford and Studebaker.

A. R. Davis has been placed in charge of the Metropolitan Motor Car Co., in Cleveland, O., which has been taken over for the sale of Garford, Studebaker and E-M-F. cars. Joseph D. Porter, formerly New York manager of the Wayne and latterly a traveler for the Everitt-Metzger-Flanders Co., has been engaged to take charge of the state territory on these cars. The Metropolitan Company's salesroom and garage is on East Nineteenth street, near Euclid avenue. Several changes will be made in the building to provide offices for the Garford staff and to afford larger show space.

Kiblinger Establishing Branches.

Four cylinder motor buggies are promised among the new models of the W. H. Kiblinger Co., of Auburn, Ind. To take care of increased business the company has opened branch offices in New York City and Kansas City, and in Orillia, Ont. The Canadian office will be known as the Tudhope-McIntyre Co., with a sub-office at Calgary, Alta. The eastern office, at 256 Broadway, New York City, will be under the management of H. H. Woodrough. At Kansas City, James H. Griffith, formerly of the Studebaker company, will be in charge.

Miller to Manage New York Goodrich.

H. C. Miller, general traveling representative for the B. F. Goodrich Co., of Akron, O., and one of the best known tire men in the country, has been appointed general manager of the B. F. Goodrich Co., of New York. He assumed his new duties this week.

Brock Again to Leave Autocar.

Marcus I. Brock, who after leaving the Association of Licensed Automobile Manufacturers, returned to the Autocar Co., of Ardmore, Pa., as its sales manager, has resigned. His resignation takes effect November 30.

To Handle Twentieth Centuries.

The selling agency for the lamps and generators made by the 20th Century Mfg. Co., has been given to the Stevens-Britton-Maurel Co., of 1783 Broadway, New York City. The latter firm will handle the business with automobile makers and importers.

Benjamin Back in Syracuse.

C. Arthur Benjamin, formerly with the H. H. Franklin Mfg. Co., and later with the Aerocar Co., has returned to Syracuse, N. Y., to go into business for himself. He has taken the agency for the E-M-F. and Packard cars.

The Week's Incorporations.

Chicago, Ill.—Automobile Supply Co., under Illinois laws. Increase of capital from $15,000 to $25,000.

Chicago, Ill.—Universal Wind Shield Co., under Illinois laws, with $10,000 capital. Corporators—M. J. Moran, George Remus, and Charles Lynch, Jr.

Chicago, Ill.—C. A. Coey Automobile Co., under Illinois laws, with $75,000 capital. Corporators—C. A. Coey, D. MacVichie and B. Levering.

Chicago, Ill.—Ford Automobile Equipment Co., under Illinois laws, with $2,400 capital. Corporators—Edwin Ford, Phillip Steele, and Edward Gale.

Portland, Me.—Safety Tire Co., under Maine laws, with $2,000,000 capital; to manufacture rubber tires. Corporators—C. E. Eaton, president; T. L. Croteau, treasurer.

Greensboro, N. C.—American Motor Car Co., of Greensboro, under North Carolina laws, with $25,000 capital. Corporators—H. L. Hopkins, L. B. Hopkins, and Thomas S. Beale.

Rochester, N. Y.—Omar Motor Car Co., under New York laws, with $50,000 capital; to manufacture juvenile automobiles. Corporators—S. H. Mora, W. W. Hibbard, and F. L. Sibley.

Pittsburg, Pa.—Co-Operative Automobile Co., under Delaware laws, with $25,000 capital; to manufacture and deal in automobiles. Corporators—L. E. Negley, J. P. Vance and A. C. Martin.

Hudson, N. J.—Maxwell-Briscoe-Cleveland Co., under New Jersey laws, with $25,000 capital; to manufacture automobiles and parts. Corporators—H. O. Coughlan, L. H. Guenther and John R. Turner.

New York City, N. Y.—Shepherd Motorcar Co., under New York laws, with $20,000 capital. Corporators—Irving R. Shepherd, Joseph A. Shepherd, and Fannie R. Shepherd, 106 Penn avenue, Brooklyn.

Cincinnati, O.—Herschede Motor Car Co., under Ohio laws, with $50,000 capital; to deal in automobiles. Corporators—L. B. Herschede, Joseph Linn, W. J. Herschede, Thomas Kelly, and A. T. Herschede.

New York City, N. Y.—Kayton Taxicar & Garage Co., under New York laws, with $100,000 capital. Corporators—Edgar M. Leaventritt, John F. Jacobs, and Walter F. Tracy, 111 Broadway, New York City.

New York City, N. Y.—Excelsior Storage Battery Co., under New York laws, with $10,000 capital. Corporators—Philip Horowitz, 35 West 115th street, Bela Robins and Aaron A. Feinberg, 150 Nassau street, New York City.

New York City, N. Y.—Rapid Motor Transportation & Maintenance Co., under New York laws, with $50,000 capital; manufacturing, garage and express business. Corporators—H. C. Hunter, 30 Church street; M. S. Couch, 81 West street, New York City; W. B. Banker, Passaic, N. J.

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SEPTEMBER EXPORTS SHOW GAINS

British North America Makes a Big Jump—Increases for the Month in Seven Geographical Divisions.

Marked improvement of the export movement of American motor cars and parts took place in September, the total for the month being $277,917 as compared with $211,873 for the corresponding month last year. The greatest increase took place in the trade with British North America, the total being $131,278 as against $50,250 a year ago. The United Kingdom purchased to the amount of $50,015 during the month as against $39,321, and Other Europe bought $22,924 as against its previous September record of $9,816. To offset these gains to some extent, losses are shown in Mexico, South America, British Australasia and Africa.

The September gain, however, was not sufficient to do more than to reduce the decline for that part of the fiscal year which has passed. For the nine months ending with September, the total is $4,282,728, as against $4,963,885 for the corresponding period of 1907. No small part of the total decline is ascribable to a temporary dullness in the trade with British North America, although the greatest drop of all for the period is that of Mexico, from $512,682 last year to $218,670. British Australasia likewise shows a continued falling off, making the total for the nine months $59,380, as against $154,496 for the same period last year. Gains are shown in the totals for the United Kingdom and for Other Asia and Oceania, as well as in the group given as Other Countries. The remaining divisions are close to the figures for last year, with slight losses prevailing.

While in the nine months' total only four of the fourteen divisions record gains, the showing for the month of September itself discloses gains in seven of the divisions.

The record in detail follows:

	September		Nine Months Ending September		
	1907	1908	1906	1907	1908
Automobiles and parts of	.....	.....	*$2,356,110	.....	.....
Automobiles	$179,041	$235,607	†1,178,187	$4,442,478	$3,805,569
Parts of	32,832	42,310	†109,882	521,407	477,159
Exported to—					
United Kingdom	39,321	50,015	1,021,908	1,503,791	1,541,480
France	4,130	7,011	271,319	532,383	533,334
Germany	5,338	7,693	111,767	158,274	145,732
Italy	655	304	239,744	242,191	219,533
Mexico	25,583	15,986	546,064	512,682	218,670
Other Europe	9,816	22,924	178,689	261,061	192,274
British North America	50,250	131,278	766,431	1,086,541	997,882
West Indies and Bermuda	12,589	9,895	203,169	222,311	121,473
South America	31,514	11,979	103,459	185,054	98,158
British East Indies	1,748	3,780	26,267	28,711	23,487
British Australasia	19,004	8,876	100,913	154,496	59,380
Other Asia and Oceania	10,379	6,101	57,189	59,863	104,833
Africa	1,438	223	10,672	7,489	6,081
Other countries	108	1,942	6,588	9,038	20,411
Total	$211,873	$277,917	$3,644,179	$4,963,885	$4,282,728

* Figures are for six months, January to June, 1906.
† Figures are for July to September, 1906, inclusive.

German Grotto at Palace Show.

Detail plans for the "Great White Show" which the American Motor Car Manufacturers' Automobile will disclose to the public on New Year's Eve at the Grand Central Palace, New York City, now provide for a German grotto concealed behind a stone wall effect. A Swiss chef, who can cook in all the chief Continental languages, has been engaged, while quaint paintings and mottos from famous rathskellars and wine cellars of Germany, together with roof decorations of grape clusters and vines, will suggest the further possibilities and inviting characteristics of the retreat.

Diamond Organizes a Racing Department.

In organizing a full-fledged racing department, the Diamond Rubber Co., of Akron, O., has secured Joe Tracy as its chief, who will also act as consulting engineer on all racing equipment matters. As a driver in Vanderbilt and foreign speed contests Tracy brings a large experience to bear, and it is anticipated that with the Diamond demountable rims, the new Diamond Grip and anti-skidding tires and an organization that can take care of racing matters on a large scale, the company will be well equipped to accumulate racing honors.

Preston Buys Factory in Buffalo.

The Preston Fabric Tire Co., of Buffalo, N. Y., which was recently incorporated to manufacture automobile and bicycle tires, has bought the property of the old King Spring Co., at the corner of Niagara and West Delavan avenues. The factory building is being remodeled for the Preston company's needs.

Kee-Lox to Build Automobiles.

Enjoying considerable prominence in the typewriter field, the Kee-Lox Mfg. Co., of Rochester, N. Y., is branching into the manufacture of automobiles. Specifications for its materials are already being put in shape.

ROYALTIES GO TO THE CREDITORS

Electric Vehicle's Income on Selden Patent Set Aside for Their Benefit—Bondholders do Not Share It.

That the general creditors and not the bond holders of the Electric Vehicle Co., of Hartford, Conn., are entitled to that company's income from royalties under the Selden patent was indicated last week when an order was passed by Judge M. A. Shumway, of the superior court at Hartford, directing the receivers to transfer $90,000 from the American National Bank at Hartford to the Chase National Bank of New York City. The money is the whole of the company's share in Selden royalties paid for the year ending last September. In being transferred to New York it is deposited to the credit of Halsey M. Barrett and Henry W. Nuckols, in their capacity as receivers in New Jersey, to be held subject to the order of the United States circuit court for the district of New Jersey for the equal benefit of creditors of the company residing in any jurisdiction.

Under the new agreement with the Selden licensees last spring the total income of the Electric Vehicle Co. from Selden royalties is limited to $150,000 per annum, of which a maximum of $60,000 per annum goes to George B. Selden himself, leaving a net balance of $90,000 to the company. Although entered into in the spring, the agreement was post-dated as of effect from the first of the fiscal year, commencing October 1, 1907, so that the $90,000 which has been ordered set aside for the general creditors represents the company's net income from the Selden patent for the year.

Studebaker Begins Absorption of Garford.

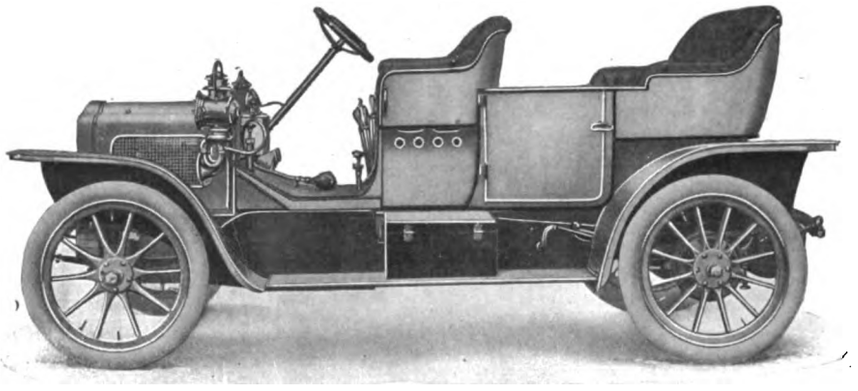
The first definite move in the absorption of the Garford interests by the Studebaker Co., and which is confirmative of the Motor World's exclusive story of the deal, occurred this week when W. B. Hurlburt, C. R. Teaboldt, and S. J. Wise, the officers of the Garford Motor Car Co., of New York, accepted the handsome offer which had been made them and disposed of their holdings. The effects of the New York establishment have been transferred to the Studebaker branch. Hurlburt and his two colleagues already have settled on their future plans which will assure their continuance in the industry.

Lasher General Manager for Koehler.

W. J. Lasher, a veteran of the New York City trade, has resigned from the Oldsmobile Co., of New York, to become general manager for the H. J. Koehler Sporting Goods Co. The latter company has the control of the E-M-F. cars for New York City, New Jersey and neighboring territory.

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A WHITE STEAMER FOR $2000



Not since 1904 have we made a car priced at so low a figure as $2,000. The White—"the car in a class by itself"—has thus been brought within the range of a larger number of purchasers than has been the case in recent years.

The new $2,000 White car, known as our Model "O," has none of the attributes of the "cheap machines." It is simply a "smaller edition" of our $4,000 car. The new model "O" is rated at 20 steam horsepower, which means that it can do the work of gasoline cars rated at much higher figures. The wheel-base is 104 inches; the tires, both front and rear, are 32x3½ inches. The car is regularly fitted with a straight-line five-passenger body. The frame is of heat-treated pressed steel. The front axle is a one-piece forging of I-beam cross section.

The nature of the steam engine is such that the engine of small power has all the desirable attributes of the engine of high power. In other words, as the weights of our small car and of our large car are proportionate to the power of their respective engines, the small car can do anything that our large car can do.

To summarize the features of our new Model "O" car—it is noiseless, odorless, smokeless and absolutely free from vibration. All speeds from zero to maximum are obtained by throttle control alone. The speed of the car responds instantly to the throttle; the engine can never be stalled. The directions for driving are summed up in the phrase, "Just open the throttle and steer." It starts from the seat—"no cranking." It is the ideal moderate priced machine. It is the best for the man who wishes to drive and take care of his own car. It is a result of our nine years of experience in building the White Steam Car—the only machine which finds a ready market in every portion of the globe.

Write for circular giving full details of this car.

THE WHITE COMPANY

CLEVELAND, OHIO

NEW YORK CITY, Broadway at 62d St.
BOSTON, 320 Newbury St.
PHILADELPHIA, 629-33 N. Broad St.
PITTSBURG, 138-48 Beatty St.
CLEVELAND, 407 Rockwell Ave.
CHICAGO, 240 Michigan Ave.
SAN FRANCISCO, Market St. at Van Ness Ave.
ATLANTA, 120-122 Marietta St.

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NEW YORK, NOVEMBER 5, 1908.

Odd Feature of the Rural Market.

Considerable distinction has been earned by the "farmer" market because of its strengthening influence on the sales of motor cars during the past year or two, and evidences are not lacking that in the minds of many sales managers it is reckoned as of equal if not greater importance than that developed within the corporate limits of cities and towns. At the same time, it may have escaped notice that the farmer market as such lacks proper definition and classification. To the average metropolitan reader, particularly if of the East, the broad areas of the middle West are supposed to furnish the "big" demand of the present day, while the agencies and branches of the cities and towns are thought to cater to a more limited demand which is purely local. A brief consideration of the great volume of sales credited to the latter, however, must be sufficient to show that this idea must be at least in part erroneous. Were all the sales credited to the city agencies placed directly in the cities the number of machines in actual urban service would be much greater than actually is the case. As a matter of fact the amount of city business which is placed in the surrounding country is astonishingly large and incidentally constitutes a most embarrassing element of the work.

The truth of this was forced home this week by the assertion of a well-known New York dealer that from forty to sixty per cent. of the inquiries, both personal and by letter, received at his store were from out of town prospects. Without knowing the exact ratio of sale to inquiry between the local and foreign applicants, it is easy to see that this must constitute a source of no small annoyance to the dealer, as well as a cause of more or less fruitless effort. For the salesman who is working on a commission basis cannot well be expected to work up any great amount of enthusiasm over a prospect which if it materializes at all is likely to do so through the manufacturer's main office, or perhaps even through some local agent.

Psychologically, the condition is easily explained. The prospect living in the country naturally places a high value on the advantages of coming to the city where the greater competition of a large number of agencies is likely to insure more thorough and careful treatment of the customer than is to be expected in a town which boasts but one or two agencies. This, together with the opportunities of observing a large number of cars in actual use, makes the great city a sort of mecca for would-be buyers, many of whom come merely for purposes of study, afterward placing their orders with local dealers or with makers who ship direct. The city agency thus becomes a valuable instrument of general education and publicity almost as much as a selling organ in itself. In this respect it may have an intrinsic worth which cannot be measured in terms of actual business consummated.

The handling of inquiries of this nature requires the utmost tact and diplomacy. Out-of-town customers, even those who actually place their orders with the metropolitan institution, frequently live so far away as to be completely out of the reach of possible repair and accessory sales once they have been equipped, and therefore such sales as are closed among this class of customers, frequently carry no subsequent interest to the dealer. In consequence there is a strong temptation to skimp them, and to receive the rural visitor coldly as a not over-profitable potential customer.

Effects of Misdirected Enthusiasm.

Among the multitudinous reflections engendered by an event of as great magnitude as the Vanderbilt Cup contest a question arises as to the wisdom of permitting interest in it to transcend all other interests for the time being, even to the exclusion of routine business. For days and weeks in advance of a great contest of this nature a spirit of feverish expectancy broods over all establishments which are in any way connected with the affair, and even permeates to a deplorable extent many which have no interest in it other than as one of the big happenings of the sport and its parent industry. During the days immediately preceding the event plans and preparations for witnessing it, speculations as to the outcome, idle gossip and, in the local agencies and stores, "visiting" with out-of-town acquaintances are permitted to absorb a generous portion of the time which otherwise would be devoted to routine work. In its entirety a big race, a big show, a big carnival, goes a long way toward assisting the progress of the industry—that is beyond question. Examined in detail, it would seem that frequently a sort of school-boy spirit of holiday-making is permitted to encroach upon legitimate effort at such times in a way which is not only demoralizing but directly injurious.

To cite a local instance, which it is to be hoped was an exception to the general rule, it is related that an old and valued customer of one of the well-known metropolitan establishments, himself not at all interested in racing matters, visited the store on the day of the Vanderbilt race with the intention of purchasing one of the latest models of the widely advertised car. Instead of the courteous reception which he anticipated, he encountered only the clumsy attentions of an office boy, who was much disgruntled at having been selected for the ignominious position of "housekeeper" on the great day. Of the new model, he knew little or nothing, and as a result of the brief and unsatisfactory interview the customer decided to visit further along the "row" in search of better treatment. The outcome was the placing of a provisional order for a rival make of car, almost equally famous for its excellence. As the buyer already had owned two of the first-men-

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tioneed machines and always had been a staunch ally of its makers, the loss brought about by an hysterical over-estimation of the importance of the big race, was more than that covered by the switching of something less than five thousand dollars worth of business to another concern.

Of course this is merely a convenient illustration of the effects of a condition which must have been very apparent to thinking men in the trade every time an event of more than passing interest has absorbed the attention of its people. It is debatable, perhaps, whether the wholesale renewal of interest resulting from such sweeping attacks of enthusiasm do not more than counteract losses resulting from incidents such as the one in point. At the same time it also is debatable whether the relaxation permitted at such times is of the sort likely to encourage enthusiasm of the earnest, fruitful sort, or whether it fosters merely the spirit of play and the spasmodic, jealous element of rivalry encouraged by competition which is purely sporting rather than commercial in its origin.

Location of the Gearset in Question.

"Standardization" and "refinement of detail," those mighty watch words of the press agent, have gone a long way toward removing the various sources of mechanical controversy over the points of motor car design which at one time made such valuable advertising matter. But it is to be noticed that as each ditch is crossed another presents itself, so to speak, so that as fast as one method of practice becomes accepted and is given an established value, other questions come up which have been introduced by it. The use of the method of transmission by means of the propeller shaft and floating or semi-floating axle for example, is fast gaining ground and the chain versus shaft drive controversy no longer exists as such, since the status of each type has been pretty well established. At the same time there has been developed the controversy of the two types of unit power plant and unit transmission, or axle mounted change gear, as it is variously described.

Primarily it appears more logical if the gearset is to be annexed to either the motor or axle groups, to place it in close relation to the motor rather than on the axle, and for a number of very good reasons. Thus, the motor being the more massive of the two units permits the gear shafts to be given a more rigid mounting than might seem possible otherwise, allows the elimination of universal joints or other self-aligning connections between the motor and the clutch or the clutch and the gearset, permits a compact and thorough system of lubrication to be established, and combines all the parts which are most liable to require adjustment or other attention in a position in which they are readily accessible, besides making the removal of the entire aggregation for purposes of overhauling or substitution, a comparatively simple matter. As objections to the system may be mentioned the increased load on the front wheels which results from crowding the gearbox forward, the concentration of this load on three points, usually well forward in the frame, and the necessity of careful construction in building the main bed and housing parts in such a way as to secure adequate strength without unduly increasing the weight.

Similarly it would appear on first sight that the unit transmission would suffer as a result of concentrating too much dead load on the axle. As a matter of fact, however, recent designs of this sort have been carried to such a high point of development that in one instance the rear axle of a thirty horsepower car turns out to be but 20 pounds heavier with the gearset than it was without it—the axle design remaining practically unchanged in other respects. Whatever the increase in axle dead weight may be, it has the effect of bringing about a more uniform distribution of weight on the wheels than otherwise would be possible, which of course, is of considerable advantage. Advantages accruing from the adoption of this system include the compact grouping of the gearing, the simplicity of the housing and the fact that both gearset and differential mechanism may be lubricated by a common oil bath; ease of inspecting, repairing or replacing the entire group when any difficulty exists; ease of interchanging the entire group, and accessibility—since it may be got at without interfering with the body or its load in any way.

Both systems fare alike in regard to ease of interchanging the complete units, and both are advantageous in respect to clearing the waist of the chassis of mechanism. In fact, the question appears to be whether it is better to separate the power plant between the clutch and the gears or between the gears and the differential. Actually, and with well thought out design, arguments as to weight distribution, durability of parts, simplicity of construction and economy of construction and upkeep remain to be worked out in a manner which will differentiate clearly between the two methods of arrangement. At the present time the unit power plant arrangement is in more common use than that of the unit transmission. Yet the latter system has among its strongest advocates so many cars of remarkably good reputation that the balance of advocacy is pretty nearly equal all things considered.

COMING EVENTS

November 6, St. Louis, Mo.—Manufacturers & Dealers Association's hill climb, Soloman's hill.

November 6-7-8, Detroit, Mich.—Detroit Automobile Dealers Association's three days endurance run.

November 7, Denver, Colo.—Denver Motor Club's economy test to Greeley, Colo., and return.

November 7-8, St. Louis. Mo.—Track meet, old fair grounds.

November 7-8, New Orleans, La.—New Orleans Automobile Club's two days race meet, State Fair grounds.

November 14, Philadelphia, Pa.—Quaker City Motor Club's race meet, Point Breeze track.

November 25, Savannah, Ga.—Automobile Club of America's 200 miles light car race.

November 26, Savannah, Ga.—Automobile Club of America's (New York), 400 miles race.

November 27, Denver, Col.—Colorado Industrial Exposition Association's race meet. Overland Park track.

December 31, Long Island Motor Parkway—Speed trials against time, auspices of the Long Island Motor Parkway, Inc.

December 31-January 7, New York City—American Motor Car Manufacturers' Association's annual show in Grand Central Palace.

January 16-23, New York City—Association of Licensed Automobile Manufacturers' annual show, Madison Square Garden.

January 23-30, Philadelphia, Pa.—Philadelphia Automobile Trade Association's annual show.

February 6-15. Chicago. Ill.—National Association of Automobile Manufacturers' Show, Coliseum and First Regiment Armory.

February 27-March 3, Hartford, Conn.—Automobile Dealers' Association show.

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FLETCHER "LIFTS" BRAZIER CUP

Only Nine Contestants in Philadelphia Automobile Club's Touring Contest—Legal Speed Over Short Course.

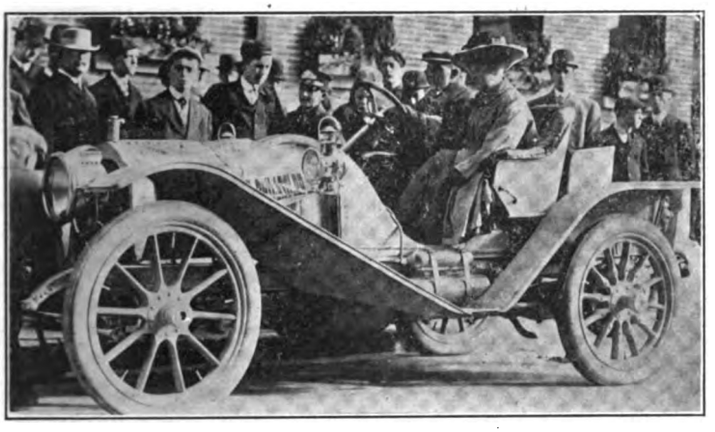
A touring contest over a course only 65 miles in length is quite a homoeopathic dose for the up to date motorist, and the winning of a trophy under such conditions does not seem a difficult matter. Nevertheless the nine members of the Automobile Club of Philadelphia, who set out on the sixth annual contest for the Brazier cup on Saturday, 31st ult., found occasion for some perplexity, and incidentally lost two of their number before going the full distance over the 64.9 miles route. Gustavus B. Fletcher driving a Packard runabout, carried off first prize. In doing so, Fletcher repeated his victory of three years ago, when he succeeded in lifting the trophy under more exciting conditions.

The contest was not one of endurance, high speed, reliability, or any other conditions very strenuous. Instead, the scheme was for contestants to adhere as closely as possible to a schedule that would exactly coincide with legal speed limits. A total running time of 3 hours 47 minutes 10 seconds was alloted, making the contestants reckon upon an average speed of about 16 miles per hour. Three blind controls were scattered along the route, which was through Lansdowne, Swathmore, Media, Devon and Norristown and back to the Quaker City, and the times of all the contestants were taken as they passed the three points. Penalizations were imposed upon cars passing controls behind or ahead of time—one point for each minute early or late. Repairs and adjustments were not taken into consideration.

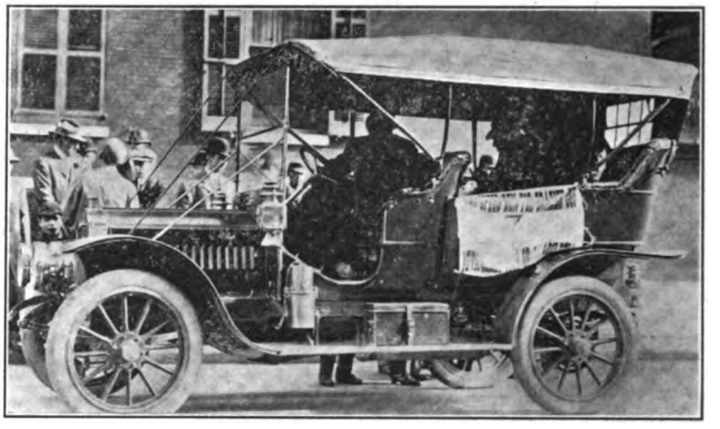
When the nine contesting cars checked in at the finish and the committee began the arithmetical process of putting down six and carrying two, Fletcher was credited with covering the distance with 17.5 points against him, which was just one minute better than his nearest competitor, H. P. Bailey (Winton). Frank Hardart, Jr., with an Elmore, and C. Y. Abbott, in a Pennsylvania, tied for third honors, each having a penalization of 22 marks. Seven of the nine starters finished the run within the five hours limit, J. R. Curtis's Franklin and W. S. Harding's Autocar being disqualified for staying out too late.

Most of the confetti which chickens did not eat, was swept in many directions by a promiscuous breeze, so that at forks in roads, it scarcely served its purpose. Contestants for the most part, however, had little difficulty in following the course. At Devon, there was a slight mix-up, owing to the regular road being torn up and this necessitated a detour. The roads were in very fair condition, barring a few bad stretches, and while the wind was a high one, it exhilarated, rather than annoyed, the competitors.

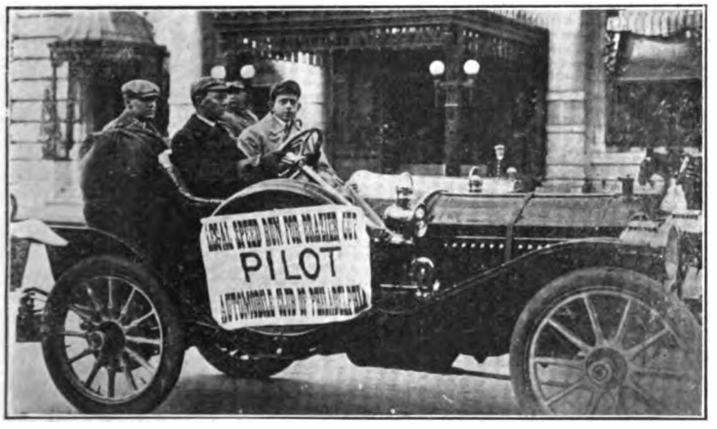
"The club's run for the Brazier Cup on Saturday was a farce," declared a prominent member. "It was really too sad to be amusing. Could anything be more ridiculous than a club enjoying a membership of upward of 700 owners of motor vehicles, mustering a turnout of as many as nine cars in its annual road competition? The conditions all favored a large representation—owners of cars holding membership in the club or members of their immediate families were called upon to drive, and this eliminated the possibility of any specially prepared manufacturers' car in the hands of factory experts coming into unfair competition with the bona fide amateur."



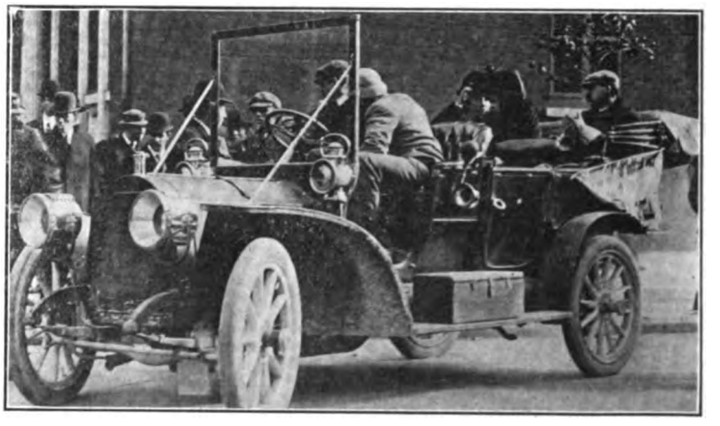
FLETCHER, PACKARD, THE WINNER



HARDART, ELMORE, WHO FINISHED FOURTH



PILOT CAR THAT SET THE LEGAL PACE



MILLER, PACKARD, PENALIZED 52 POINTS

The score of the day was as follows:

	Penalty. M. S.
G. B. Fletcher, Packard	17:30
H. P. Bailey, Winton	18:30
C. Y. Abbott, Pennsylvania	22:00
Frank Hardart, Elmore	22:00
Horace Allen, Buick	32:00
E. L. Miller, Packard	52:00
J. D. Avil, Pope-Hartford	71:30
J. R. Curtis, Franklin	Out
W. S. Harding, Autocar	Out

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MUDDLES MAR DAYTON RACEMEET

Regular Card Greatly Curtailed and One Contest Results in a Squabble—Confusion Attends Novelty Event.

It is to be hoped that the next time Dayton, O., promoters hold a race meet, their efforts will be crowned with a greater measure of success than on the occasion of their first attempt. A series of automobile track contests which was undertaken on Saturday last, 28th ult., resulted in a miserable fizzle. Fourteen events were scheduled as an afternoon program and only four were run off, one of which ended in a row and was called "no race." Few spectators turned out to witness the meet, and the grandstand and rails held but a small number of motor enthusiasts. Many of those present were so disgusted with the way things were run, that they departed before the races were over. Indeed, practically the only sucessful feature of the meet was L. B. Lorimer's performance in the Chalmers-Detroit "Bluebird." He shattered the one-mile record of that half-mile track (1:21½), made some time ago by B. Oldfield, the track "artist." Lorimer sent the Bird around for two laps in 1:16⅘ in an exhibition after taking a flying start.

After a 3 miles handicap motorcycle curtain-raiser, a few motor cars, selling at $2,000 or less, lined up for a 2 miles event. They kicked up the dust for a half-dozen laps to a successful finish, when the trouble began. Irving Knupp and Otto Wolveries in Buicks led all the way, the former crossing the line first. Following were W. R. Burns in his Chalmers-Detroit "30" and Lang's Overland, but instead of awarding the cup to Krupp, the judges gave the decision to Burns in the Chalmers, on the ground that the other entrants did not comply with the requirements, by not carrying three persons, including the driver. Howls of disapproval went up from the spectators and a small sized riot was threatened. After a few minutes, however, Hugh Chalmers of the Chalmers-Detroit Company, who was present, said he was willing that the event should be declared off, as he wanted nothing but a clean cut victory for his car, with no "ifs" and "buts" about its place at the finish. This settled the trouble, the judges officially calling the race off. It seems the race called for touring cars, of which the Chalmers was the only competitor; however, it was provided that runabouts might enter, provided they carried three passengers. This point, it was ascertained, was misunderstood by the Buick drivers.

The next "number" attempted was a 2 miles "special" event for Buick cars only, and Otto Wolveries captured it with Knupp second, in tame style, to the tune of 3:02. This was followed by an open novelty race, to which cars of any horsepower were eligible. The conditions were: that the operator drive his car for the first lap alone; at the end of the first lap pick up three men passengers; at the end of the second lap discharge all passengers; at the end of the third lap pick up passengers again; at the end of the fourth lap, discharge passengers; finishing the fifth lap alone. Cars had to be in bounds before loading and unloading passengers. In endeavoring to pursue this elaborate plan, most of the contestants became sadly confused. Wolveries won the event in 4:40 time, but the balance of the competitors were disqualified for not unloading their passengers properly.

Following this, general impromptu exhibition events were run off in an effort to comfort the disappointed spectators. After making his mile trial, Lorimer fought Paxon in a Jackson a mile match race. The "Bluebird" outdid its contestant, however, due in some measure to the Jackson having been damaged to some extent when it caught fire earlier in the day. Lorimer's time for the distance, one mile, was 1:30⅘.

Fred Huyck on an Indian motorcycle beat Knupp driving his Buick from a flying start in a 3 miles brush and John Lewis drove an exhibition mile with a heavy Speedwell truck, in 1:58. But watching a truck roll around all by itself was not very exciting, so a couple of additional motorcycle races were reeled off to wind up the affair.

Denver to Hold an Economy Contest.

On November 7, the Denver Motor Club, Denver, Colo., which was organized last summer, will conduct its first gasolene consumption contest on a run from Denver to Greeley, Colo., under conditions prescribed by the technical board of the American Automobile Association. Owing to the nature of the test, the rules adopted are not very stringent, the cars merely being required to adhere to a schedule not greater than that set by the pilot car, check in at the controls within a reasonable time, completing the round trip by not later than 5 p. m. Work on tires and other parts of the car necessary for safe running will be permitted without penalization, with the exception of carburetter adjustment or other regulation of the motor necessitating the breaking of hood seals. The score percentages will be determined by the formula: weight of car, including passengers, divided by the weight of gasolene consumed, expressed in half ounces. The Ralph W. Smith cup will be awarded to the contestant securing the highest percentage on this basis, while a second silver cup will be given to the driver completing the run with the least gasolene consumption, regardless of weight or percentage.

London Taximeter Cabs Worth $20,000,000.

Recent estimates place the value of London's taxicabs at $20,000,000. Many of the machines are owned by their drivers.

"BIG THREE" THRILL NASHVILLE

Oldfield, Christie and Soules Give Their Hair Raising Performances There—"Tennessee State Record" Falls.

That renowned trio of melodramatic thrillers and monarchs of the merry-go-round school of driving, namely, B. Oldfield, W. Christie and C. Soules, served a fine exhibition of "keen dare-devilish competition" to the awe-inspired spectators at Nashville, Tenn., on Saturday, the 24th ult. The "feature" of the afternoon was a two miles event between Soules in the "Red Devil" and Christie driving his "Record Breaker," in which the former won. Christie got away first and held the lead with his opponent almost touching his rear tires, until the last eighth of a mile, when Soules shot to the front and led the front-wheel drive car at the finish by half a length in 2:07.

As is customary wherever the "noble three" perform, Oldfield beat Soules a few moments later in a 3 miles spin. Soules led until the stretch very neatly, letting Barney pass him just in time to make the race another Oldfield victory in 3:02. Later Oldfield covered a mile in his Stearns racer in 0.55¾, claiming to lower the "Tennessee State record," whatever that was. The best that Christie could do was a mile in 0.59, which he accomplished after several attempts.

In a 5 miles exhibition, Soules skirted the track in lively fashion, covering it in 4:55⅘, while in a 2 miles race for touring cars with Butler and Conners, two local drivers, in a Buick and Stoddard-Dayton, respectively, Soules also triumphed.

Time Trials Carded for Motor Parkway.

That the Long Island Motor Parkway is not destined to remain long in idleness is evidenced by the anouncement that a series of speed trials against time will be held on Saturday, December 31, under auspices of the Long Island Motor Parkway, Inc. Cars which competed in the recent Parkway Sweepstakes event (for machines selling at $4,001 and over), Vanderbilt Cup cars and racers of the Grand Prize type, will be the only ones eligible. The trials are to be at one mile, two miles and one kilometer.

Owing to the lateness of the season, and in order that each car may have at least two trials, it is expected to start the events promptly at 12 o'clock noon. Arrangements are being made so that cars will be automatically timed for each of the three distances, the finishes of which will be uniformly at the grandstand.

Entry blanks will be ready for distribution this week, from the office of A. R. Pardington, vice-president tnd general manager of the Parkway, at 527 Fifth avenue, New York City.

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TWENTY-TWO GRAND PRIZE ENTRIES

America, Germany, France and Italy Represented—Savannah Makes Lavish Preparations for the Event.

When the entries for the Thanksgiving Day Grand Prize race, to be held at Savannah, closed on Monday, November 2. the list totalled up to 22 cars. The late entries of a Chadwick and a National—both six-cylinder cars—and a Simplex, completed the American team of half a dozen, while of the foreigners, France and Germany are each represented by five entries, and Italy with six. In the light car race, there are 17 contenders—a quartet each of Maxwells and Buicks, three Chalmer-Detroits, and one each of American Aristocrat, Cameron, Lancia, S. P. O., Gregoire and Isotta; the four latter being the only foreign cars entered in the shorter event. A trio of De Dions and two Gyroscopes, as well as the three Oldsmobiles previously entered, have been withdrawn. Two entries in the big class will not start; the Matheson and the B. L. M.—the latter following its usual custom.

The Chadwick entry, which Willie Haupt is scheduled to drive in the Grand Prize competition, was announced the latter part of last week and on the closing date, Charles A Singer announced that a Simplex car would be put into the fray with M. J. Seymour at the wheel, while the National Motor Vehicle Co. rushed in the formal entry of one of its "sixes," not naming the driver. The nomination of these three cars augments the chances of America's team considerably. Both Haupt and Seymour participated in the Vanderbilt Cup race on the Long Island Motor Parkway two weeks ago.

Foreign drivers have been arriving in goodly numbers during the past week. Wagner, Nazzaro, Duray, Hautvast and Rigal came in on "La Lorraine" last Saturday, the three former having visited America before to drive in Vanderbilt Cup races. Rigal and Hautvast are on their initial trip to America. Cagno and Piacenza, the two Italian pilots, reached here Tuesday before last and spent the week "seeing New York," although the former had seen it two years ago. When "La Touraine" arrives next Saturday, it will bring in a cargo of foreign cracks, among whom will be Hemery, Hanriot and Erle, the trio of Benz drivers; Szisz, of Renault fame, and Fournier, the third of the Itala crew, with their retinue of factory men. Fournier is known to many American motorists of the pioneer days, who recall his performance on the Coney Island boulevard. The first of the visitors to start for Savannah were Wagner and Nazzaro, on Tuesday, with Ralph De Palma, the third member of the Fiat team; also Piacenza and Cagno, of the Itala forces, and Duray, driver of the De Dietrich car.

There has been no change in the announcement of the American drivers in the big race at Savannah, with the exception that Louis J. Bergdoll has nominated H. F. Grant to handle his Locomotive instead of the entrant driving himself as originally planned. Patschke will have charge of the Acme; Michener, the Lozier, while Seymour and Haupt will pilot the Simplex and Chadwick, respectively. Strang and De Palma are the only two Americans who will be at the wheels of foreign cars. The interesting news was broken yesterday (Wednesday) that George Robertson will pilot the French Gregoire car entered by Henri Neubauer for the light car race. This nomination means that this voiturette, which is little known to Americans, will be closely watched on the 25th.

Savannah is continuing its elaborate preparations for the big event, not only upon the course, but with a view to accommodating thousands of expected visitors. A house to house canvas is said to have disclosed prospective accommodation for no less than 18,000 visitors, though this hardly seems creditable to those who witnessed the stock car race of last April.

Of course, country trails have been turned into 60-foot macadam roads. Turns have been banked; the course within a course—the 10 miles route over which the light car race will be run on the day preceding the Grand Prize, is now well on the way to completion.

In the neighborhood of $32,000 has been spent on the roads and the labor of a thousand convicts has been donated by the State to bring the course up to the requirements.

Altogether, Savannah still remains true to the conviction that the Grand Prize will be the grandest contest of the sort ever seen in the country, and there is small doubt that it will be a big and hard fought contest. Also, if the tourist agencies and their allies in the daily press have their way the endorsement of a huge popular attendance also will not be lacking. As a matter of fact, it is on this particular phase of the affair that the question of the venture really hangs.

Desert Race Scheduled for November 7.

November 7 has been set as the date for the "great desert race and sand battle" which is to take the form of a road race between Los Angeles, Cal., and Phoenix, Ariz., although there is a possibility of the contest being postponed until some days later. This affair which the Maricopa Automobile Club is agitating in the far southwest has but three entries so far, though others are in prospect. The entrants are: A. J. Smith, who expects to pilot his Elmore "Bulldog"; Leon T. Shettler, who is banking on his Kisselkar, and R. J. Leavitt, the local Locomobile agent, who will endeavor to score another Locomobile victory.

PLANNING THE NEW RACING CLUB

Initial Steps Taken for Organizing Body to Control Speed and Other Contests—Probable Leaders in Personnel.

Pursuant to the clause in the treaty between the American Automobile Association and the Automobile Club of America by which it was provided that the A. C. A. should retire from the management of racing affairs after this year, ceding its control of the Grand Prize to an organization to be formed under the control of the Long Island Motor Parkway, which also was to handle the future contests for the Vanderbilt Cup, announcement was made early this week that the initial steps looking toward the formation of such an organization had been taken and that its full composition would be announced within a short time. That arrangements for the complete institution of this body will be completed within a few weeks is to be inferred from the urgent necessity of getting out plans for the big contests of next year in season for the manufacturers who desire to enter cars, to be able to make ample preparations for the coming contests.

It is stated that the new club is intended to take the same position in automobile racing which the Jockey Club holds in horse racing affairs. The organization, nominally at least, will be non-partisan so far as the late differences of the A. A. A. and A. C. A. are concerned, but will fuse the interests now controlled separately by these two bodies in a common and exclusively racing management. Naturally, the powers behind the Long Island Motor Parkway are keenly interested in the venture, and it is even intimated that at some future time the headquarters named—will be located on that course. Whether the present Vanderbilt Cup Commission will be disbanded or whether it will continue its jurisdiction over the trophy in its new status, remains to be decided. Certainly the new body will in no way be a rival of the commission. In fact the membership of the two will hold several names in common. Of these, that of William K. Vanderbilt, Jr., donor of the cup, of course will figure most prominently. Jefferson De Mont Thompson also is interested in the movement, it is said, while Henry Sanderson, W. G. McAdoo, W. M. Hamilton and Robert Lee Morrell also are mentioned.

Campbell Heads New Orleans Club.

At a meeting of the newly formed New Orleans Automobile Club, held on Monday, 26th ult., officers were elected and the idea of affiliating with the American Automobile Association was talked over. Thomas C. Campbell was voted president; Theodore Grunewald, vice-president; and Homer George, secretary and treasurer.

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RACING PUTS DALLAS ON EDGE

Twenty-five Thousand Spectators Grow Excited Over Automobile Contests—Tone Captures Chief Event.

If any one entertains more doubt as to the popularity of automobile track racing in the Lone Star State, that person should have been at the State Fair meet at Dallas, Tex., on Sunday, November 1, when the cars buzzed around the saucer before an excited throng of fully 25,000 people. The interest was keen from the very first getaway, in a 10 miles brush between W. Gale (Buick); P. R. Plummer (Ford), F. Malone (Pope), and J. M. Girard (Packard). The latter, who was the favorite, captured the event in 13:58, after giving Gale a hot chase and not catching him until the tenth mile. The others were outclassed from the start and lapped before they had gotten very far.

This served to whet the appetite of the crowds for the second spasm, a 50 miles affair, which was won handily by Tone, driving an American Roadster, when George Clark's Pope and P. W. Willard's Stearns met with trouble.

Steamers were barred from competition events, but Seyfried, in a White steam stock car set out in an attempt to clip the track record. He was unsuccessful, however, his best time being 1:02½, which was the fastest time of the day. This, in view of the fact that the White was not allowed to enter competition events speaks for itself.

A 10 miles event for cars of 30 h. p., and over saw only two contenders—Clark, in a Thomas, and Hill, in an Oldsmobile. Clark got the jump on his opponent, and kept increasing the gap until the third mile, when something went wrong. The driver, however, kept up his nerve and presently had the car running well again, lapping Hill on the eighth round and taking first in 12:45⅞.

When the 10 miles free-for-all event was called, but two cars appeared at the line. Shortly after they left the tape it was noticed that Bertrand's Pope-Toledo had caught fire. When the flames were extinguished and the race re-started, Tone in the American toyed with the Pope driver until the last lap, when, satisfied with showing how easy he considered his opponent, he bid for the applause of the multitude, made a grandstand play and won in 12:28½.

Clark in a Thomas, won an amusing novelty race, and then Gus Seyfried, in the White, began to perform again. Inasmuch as no one accepted the White's challenge to a five miles bout, Seyfried did the next best thing and drove a five miles exhibition with his stock car; Dundee's specially built White Flyer having been wrecked in practice, when it went through a fence. Seyfried's time was 1:03½, 2:06, 3:10½, 4:14, 5:18⅗. Following which, Tone drove a 2 miles exhibition with the American in 2:08¾.

Strang to Star at New Orleans Meet.

Having billed Lewis Strang as the "world's champion auto racer" in the local press and on the fences in New Orleans, La., the promoters of a two days race meet to be held in that city on November 7 and 8 have agitated the public in that section of the south up to a point where they take it for granted that Strang will break all sorts of world's records and do much manner of wonderful things. His two Renault cars have reached New Orleans and the "dare-devil driver" who will pilot them, is reported as having headed for that city. The old Peerless "Green Dragon," which has gone through about as many processes of rebuilding and replacing of parts as the "original Florodora Sextette" did in its palmy days, will be an added attraction. This merry old car is now said to be the property of James A. Clark, a New York millionaire, and Strang is scheduled to whirl it around for a few laps. The newly organized New Orleans Automobile Club, under whose auspices the meet is to be held, has applied to the American Automobile Association for a sanction.

Racers Must Stop to Examine Tires.

In connection with the track meet scheduled for Denver, Col., on Thanksgiving Day, a novel suggestion has been made with regard to the 25 miles event. It is reported that after covering twelve miles of this race, contestants will be obliged to stop and thoroughly examine their tires. Just why it is deemed necessary to stop after going the short distance of a dozen miles, when in longer and faster races, such stops are not made as a rule, is not disclosed. Tires, it seems, will be the only things examined and if the expert eyes of driver or mechanician perceive that a set of tubes is about to blow out after the hard going over the dozen laps of oiled course, they will be changed and thoroughly healthy ones substituted.

Quaker City Plans a Race Meet.

That 24 hours race that was proposed by some of the members of the Quaker City Motor Club will not take place. A race of 500 miles or so, however, may be run at Point Breeze track on Saturday, November 14, or in lieu of that a number of short distance events. The board of governors of the club has empowered the racing committee to hold a race meet on that date, although it limits the time for such an event from 7 a. m. to 5 p. m.—very peculiar hours. Point Breeze has been definitely decided upon as the scene of the meet, but the rest of the details have not yet been announced by the racing committee.

CHICAGO CLUB PLANS NOVEL MEET

Ten Days Reliability Contest for Electric Vehicles to Cover 1,000 Miles—Rules of Penalization.

Provided the plans of the Chicago Motor Club go through as smoothly as the technical committee anticipates, its 1908 contest season will conclude with a ten days reliability test for electric automobiles, to take place in November. Frank Perley, of the Babcock Electric Co., recently made an application to the club for such a contest, to be conducted along lines similar to that of the recent 1,000 miles reliability test for gasolene and steam cars.

The various Chicago branches of the electric manufacturers, including the Studebaker, Columbia, Baker, Anderson Carriage Co., and Woods, appear to be strongly in favor of the proposed event, the like of which has never before been held. The technical committee is in favor of having the run cover a route of 1,000 miles or so, including an average of 100 miles a day, wth a varyng speed schedule—20 miles an hour for one day, 15 for the next, ten for the next and on other days a combination of speeds between different controls. Rules would provide penalties for replacements, repairs and work done on machines, with due allowances for recharging.

Following the Hounds by Motor.

Fox hunting with no red-coated equestrians and with a Gabriel horn, instead of a bugle, for summoning the hounds is the unpicturesque system employed by Professor J. F. Draughon, of Nashville, Tenn., who now uses a motor car instead of horses for this sport. His hunting ground is about 30 miles from Nashville, and in order to transport his pack of 37 registered dogs to the scene of action he has devised a large trailer which he couples to the back of his machine. When the scent has been struck, the trailer is left by the roadside and the professor's car may be seen scurrying up lanes and crossroads so that he may be in at the death. After the fox has been run down, Draughon returns to his trailer, toots vigorously on his exhaust horn for the wanderers of his pack, and after they are all assembled piles them into their cages on the trailer for the haul back to town.

St. Louis to Hold Three Days Carnival.

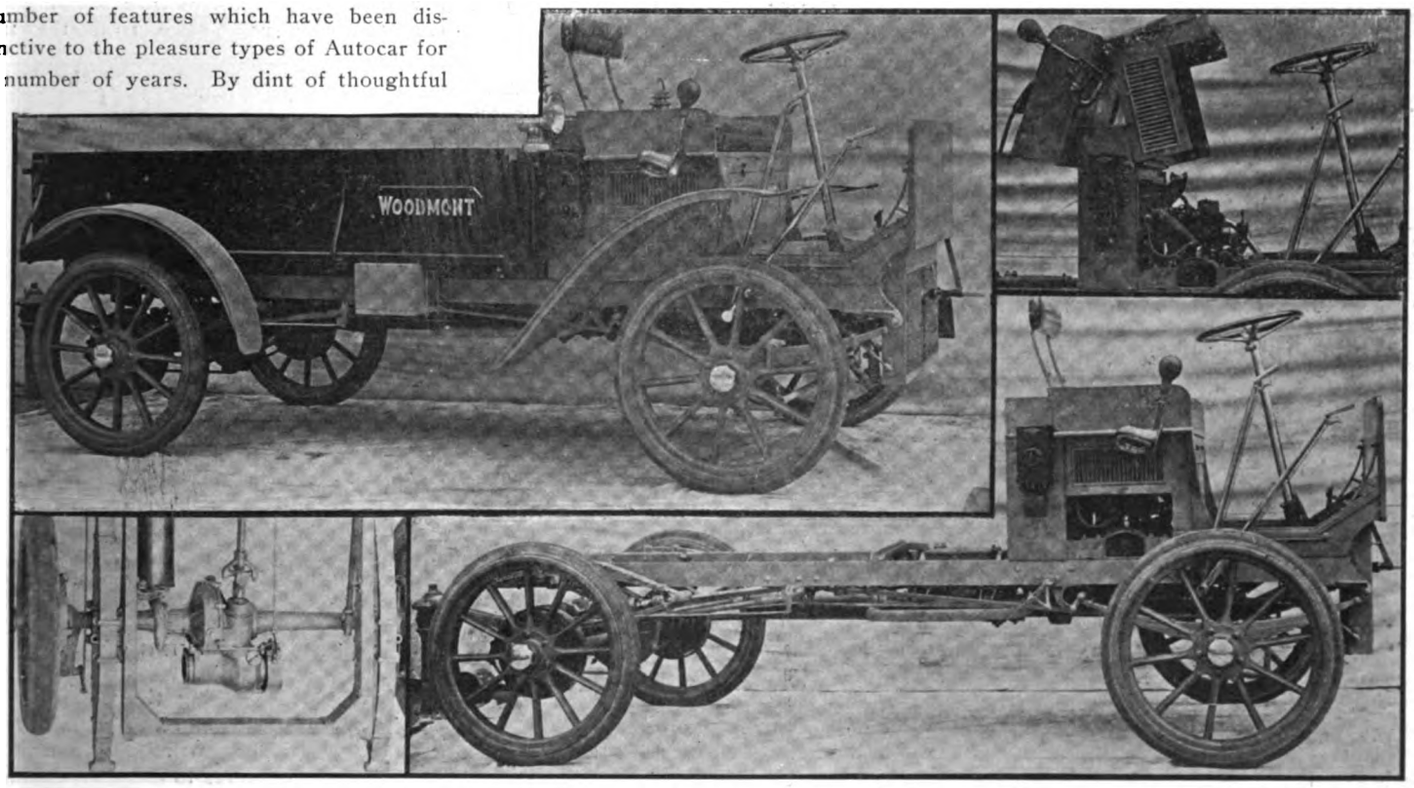
St. Louis (Mo.) motorists are arranging for a three-day carnival for Friday, Saturday and Sunday, November 6, 7 and 8. The Manufacturers & Dealers Association's hill-climb, which was scheduled for November 2, has been postponed to Friday, November 6, the opening day of the carnival. On the two following days, there will be a track meet at the Fair Grounds where Christie, Oldfield and Soules will appear.

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AUTOCAR COMMERCIAL VEHICLE

New Product Designed Along Independent Lines Adapted to Large Range of Use —Its Noteworthy Features.

On the sound principle that the duties of the purely utility vehicle are so radically different from those of the pleasure car as to permit of no confusion between the various components of the two types, the new line of commercial cars which recently was announced by the Autocar Co., Ardmore, Pa., has been built along entirely new and independent lines, though introducing a number of features which have been distinctive to the pleasure types of Autocar for a number of years. By dint of thoughtful handling of the design also, an unusually comprehensive range of purposes may be served by these machines, though they are made in but two lengths of wheel base, and otherwise conform to a single standard of construction.



AUTOCAR DELIVERY WAGON, OPEN BODY, CHASSIS AND DETAILS SHOWING REAR AXLE CONSTRUCTION AND ACCESSIBILITY OF MOTOR

In fact, but for this distinction and the different sizes of body which may be adapted to them they are practically identical. A single exception to this is in the specification for tires, which in the smaller chassis are pneumatic and in the larger, or rather longer, solid. The former has an 85 inch wheel base, and accommodates a body platform 48 inches wide and 68 to 90 inches in length, according to requirement. The latter has a platform 48 inches wide, and is capable of taking any desired body length between the limits of 80 and 100 inches. For the lighter work of the short wheel base machine, 32 by 4 inches pneumatic tires are employed, while the larger car is shod with 32 by 3½ inch solid tires. The shorter vehicle is intended primarily for commercial passenger work, while the other is capable of handling either heavier delivery work or light freight haulage, and is rated up to 2,000 pounds load capacity.

In the design of the machine—considering both vehicles as of uniform construction for the sake of brevity—the objects of working economy and interchangeability have been served by the use of a complete and independent power plant, which is given a three-point mounting on the main frame, and a driving axle construction which permits of ready removal from the chassis as a unit, or almost complete dissection without disturbing the body. This object, in the case of the power plant, has been worked out in such a way that when it is not desired to remove the plant as a whole, either the motor, gearing, gearset or clutch, or one or more of a number of important componants may be removed without disturbing the asemblage in other respects. The same result also is developed in the construction of the rear axle. Practically any part of the power plant or transmission may be dismounted without interfering with the adjacent parts except to disconnect it.

The power plant, though not mounted in a common housing, is carried by an independent subframe which is attached to the side members of the main frame at two points in front, and is carried in the rear by a single connection with a transverse yoke. The removal of the entire plant entails merely the relaxing of these three connections, and the disjointing of the necessary pipe connections.

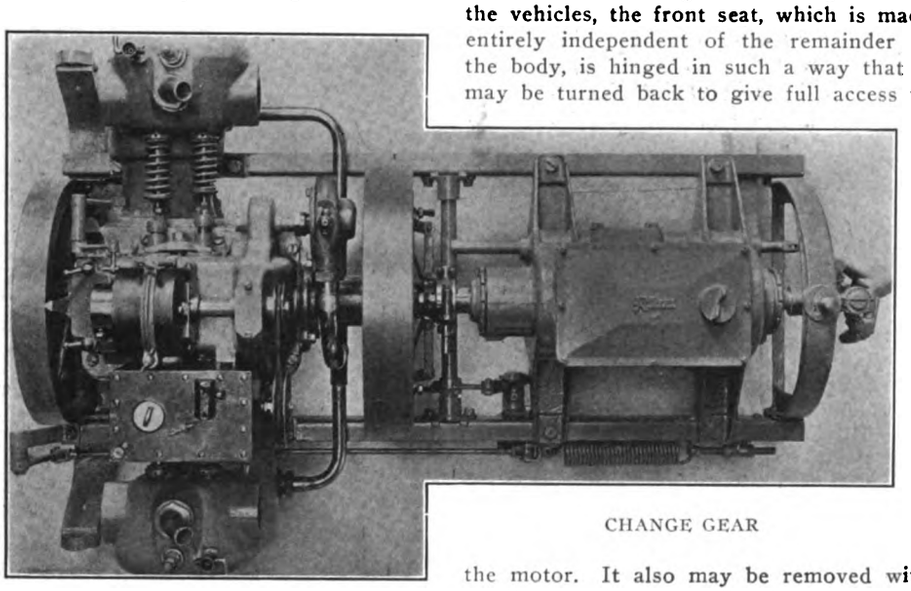
The motor is of the double-opposed type, measuring 4¼ by 4½ inches bore and stroke, and yielding an A. L. A. M. rating of 18 horsepower. The valves, which are interchangeable, are placed on the upper sides of the cylinders, and worked from a single cam shaft. The crank shaft, which is mounted on extra large, Hess-Bright ball bearings, carries two fly wheels, one at either end, so counterbalanced as to compensate all vibration tendencies as closely as possible, making an unusually quiet running motor. The forward fly wheel carries fan blades, and replaces the usual belt-driven fan in assisting the cooling system. In the larger chassis, this fly wheel also carries a governor which limits the crank shaft speed to 1,300 revolutions per minute.

Magneto ignition is a standard feature of the equipment, the magneto itself being attached to the top of the crank case by means of a couple of wing bolts. It is so arranged that it can be removed or replaced without disturbing the timing. As it is of the low tension type, the coil which also is included in the equipment may be used for ignition with batteries. The upper section of the crank case, which is divided into two parts, carries the push rods and guides for the valve gear, the water pump driving gear, the magneto and oiler—the latter being secured by means of dowel pins and a single wing nut.

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The rear fly wheel carries the clutch, which is of the three-plate pattern which has been employed on cars of this make for several years, with but slight modification. The central, bronze floating ring, is equipped with cork inserts. The change gear is of the progressive sliding gear type, affording three forward speeds, with a direct through drive on the high. It is mounted in a one-piece housing and both the lower, lay shaft, and the upper, driving member, are set in Timken roller bearings. The propeller shaft is equipped with two universal joints, and is arranged for a practically straight line drive under full-load spring deflection.

This is assisted by the design of the differential and reduction group mounted on the rear axle, which is of original and very unusual form, the usual simple bevel reduction being dispensed with in favor of a double reduction through bevel and spur gears. The propeller shaft, passing over the axle, drives a short counter shaft through beveled gears, while the latter is connected to the differential member by means of a pair of heavy spur pinions. Advantage is taken of the position of the countershaft, to mount upon its extension a wide faced drum for the application of the emergency brake. By eliminating the large single reduction which otherwise would be necessary and the consequent weakness of the smaller bevel gear, added reliability has been secured, while the use of the countershaft also permits a considerable variation in the final driving ratio as required. This may be anywhere between 3.71 and 5.57 to 1, according to the gear sizes employed.



AUTOCAR MOTOR

Considerable originality also is displayed in the construction of the rear axle itself. The driving stubs are squared at both ends, the inner end which is mounted on Hyatt roller bearings, slipping into the differential gearing, while the outer end is carried by Timken bearings. The latter bearings are so arranged that the inner member on a turn carries the end thrust of the wheels. The axle housing is in five pieces, no parts being riveted or brazed, and the spring seats and brake supports are made integral with the axle tubes. The central portion of the housing, which carries the countershaft, is removable, and all parts except the large gear on the differential may be removed from the axle without taking the latter from under the car. The front axle is tubular, equipped with Elliott steering knuckles, and the front wheels are mounted on Timken bearings. The frame is of armored wood, and is supported by semi-elliptical springs in front and full elliptics in the rear.

To return to the general arrangement of the vehicles, the front seat, which is made entirely independent of the remainder of the body, is hinged in such a way that it may be turned back to give full access to the motor. It also may be removed with small loss of time, while side doors give access to the working parts for minor adjustments. Control is accomplished by means of the usual double pedal-double lever arrangements, with motor controlling devices mounted on the steering wheel. By this arrangement, the style and disposition of the body is left entirely to the option of the purchaser, who in place of the stock type of body, may have any special type which he may require. Numerous varieties of freight-carrying bodies are adapted to the chassis, while the passenger arrangements may be made to include anything from a 12 passenger omnibus to a neat and unusually roomy little landaulette seating four passengers inside.

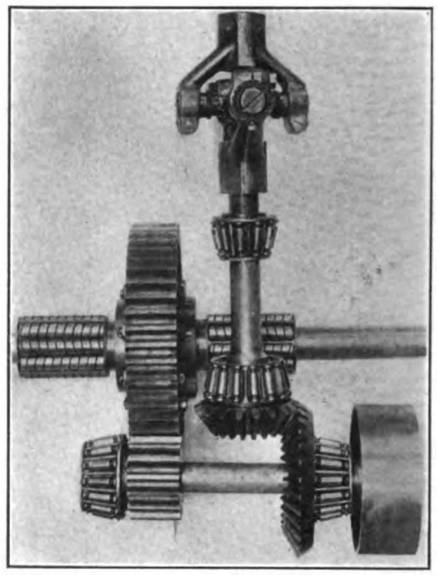
CHANGE GEAR

Regular Route for "Trouble Car."

"Trouble cars" or traveling repair shops are by no means novel as far as the basic idea of sending a heavy machine out on the road equipped with a full allotment of repair parts and tools is concerned, but the method of a British repairer in handling such a machine is commendable as well as novel in its enterprise. On Sundays and other holidays when the motor traffic along certain well known roads in the vicinity of Brighton is likely to be heavy, the machine in question is given a regular route to be covered and a schedule. In addition to this, telephone stations are established at points along its "beat," and the man in charge is directed to keep in regular communication with the dispatching point. By this means motorists anywhere within a considerable range of highway are enabled to secure efficient repair service within a short time, and as the wagon carries a full assortment of such supplies as are likely to be required, delays in consequence of the more common forms of accident are comparatively brief.

Clearing Tire Valves of Dirt.

One of the minor precautions which may have a great deal to do with securing the expected efficient service from the tire valves is that of giving the pump a few sharp idle strokes before attaching it to the tube preparatory to inflating a troublesome tire. This serves to drive all dust and dirt from the nozzle and tube, and thus prevents it from being forced into the valve when inflation commences.



REAR AXLE DRIVING GROUP

Automatic Air Valves Must be Clean.

Automatic air valves such as are an almost invariable accompaniment of so-called automatic carburetters, should be kept scrupulously clean. The slightest accumulation of dust, grease or dirt of any sort, either about their stems or seatings may be sufficient to upset their working and causing the most perplexing or running difficulties.

Glass Hoods on Demonstration Cars.

Glass hoods fitted with interior electric lights for displaying the motor to public view are growing popular with dealers who like to attract attention to their demonstrating cars. The moving parts of the mechanism catch the eye, and the plate glass panels of the hood suggest something particularly rare and fine underneath.

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RAMBLER ANNOUNCES SPARE WHEEL

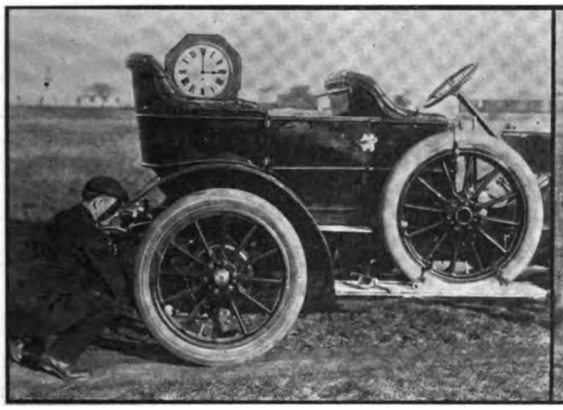
Particulars of New Optional Equipment for 1909—Ready Replacement in Case of Tire or Wheel Trouble.

As a sort of supplementary announcement to the forecast for the 1909 Rambler line, which was recently made by Thomas B. Jeffery & Co., Kenosha, Wis., the particulars of a unique added feature of the equipment have just been disclosed in a description of the spare wheel arrangement which is applicable as an option to the full line for the coming season. One of the first intimations that such an innovation was in contemplation came in connection with the Carriage Dealers' show in Grand Central Palace last month, when one of the new "fifth wheels" was shown in connection with the Rambler exhibit. Information as to its exact purpose and method of application was somewhat sparingly given at that time, however, and it was not until this week that full details of the system were made public.

From this it appears that the emergency wheel is a duplicate of the regular equipment of the car in every respect, carrying a spare tire ready inflated, and suitable for application to either of the wheels as occasion may demand. Special brackets are provided for carrying the wheels, and as it is a counterpart of the others, it may be used not only in case of tire trouble, but also in replacing an injured wheel. In general the spare wheel is carried on the running board with its extra tire, and when required as a substitute, the one which it replaces becomes the spare, no re-changing being necessary until demanded by roadside difficulties.

The wheel is secured to the hub center by six bolts. Removing the six nuts from these bolts, the wheel can be detached by means of special tools, a wheel puller and a socket wrench. Only three minutes are required to make the change.

In proof of this assertion the accompanying illustrations are exhibited as showing both the time-saving proclivities of the system and also the method of its application. In the first of the upper illustrations the operator is shown in the act of jacking up a wheel which has suffered a punctured tire, the hands of the clock indicating exactly 3 p. m. In the second illustration the nuts which held the wheel in place are seen to have been removed and placed on the running board, the wheel thus being made ready for removal. Two minutes have been occupied in the process. The first of the lower pictures shows the operator in the act of changing the wheels, the one mounting the new tire being all ready to go into place. In the fourth and last picture of the series, the new wheel and tire are shown in place, and the last of the securing nuts set home, the clock indicating that but 3 minutes have elapsed while the process was going on.



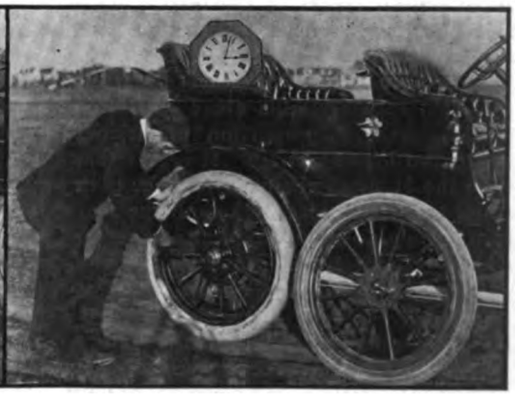
JACKING UP THE WHEEL



REMOVING NUTS



SUBSTITUTING WHEEL



SECURING THE FASTENINGS

Of the three methods of quick relief for tire trouble in present use, this has the advantage in a number of respects. The use of demountable rims alone, though conducive to ready replacement and gaining through the light weight of the extra equipment, is useless where the wheel as well as the tire is damaged. The so-called emergency wheel, which consists of an extra rim which may be clamped to the side of the wheel carrying the damaged tire also suffers from the same drawback. While the requirement for a complete extra wheel is the rarest kind of an emergency, the need is all the more imperative when it arises. Since it may be supplied with no more effort than is required to shift the ordinary demountable device the benefit derivable from its use is obvious.

B. & S. Offer Improved Tools.

With anything like a full set of angle wrenches, the motorist is generally able to take care of all the nuts and bolts that are to be found on his car. A new outfit, comprising seven such wrenches put up in a serviceable waterproof bag, is being offered by the Billings & Spencer Co., of Hartford, Conn., who have long been well known in connection with products of this kind. The wrenches are double ended, of 15 degrees angle, and the 14 sizes of milled openings range from 7-16 inch to 1¼ inches. Either semi-finish or full case hardened finish is provided for the shanks. The containing bag is made of duck or drill, and is arranged to keep each size in a place of its own.

Eleven sizes of a new and improved screw drivers are also being put out by the company. It is complete in one piece, except for the addition of the wood side pieces on the handle to provide an agreeable grip. A drop forging is used for the construction, and the point is carefully tempered.

Keeping Down the Tire Expense.

It has been declared that no less than three-quarters of the motoring public spends something like 20 per cent. more for tires than is really necessary. If care were taken to maintain the tire equipment as nearly as possible at the inflation pressure which is recommended by the makers, the cost of repairs and replacements would be reduced to a surprising extent.

Replacement of a Noisy Gearset.

When it is desired to allay the noise of a set of worn gears it must be remembered that the replacement of a single gear will have little or no effect in this respect. It is only by the renewal of both members of a noisy pair that the desired effect may be secured.

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SELECTION OF BRAKE MATERIAL

Comparative Braking and Driving Powers Shown by Tests—Asbestos Composition Gives Best Results.

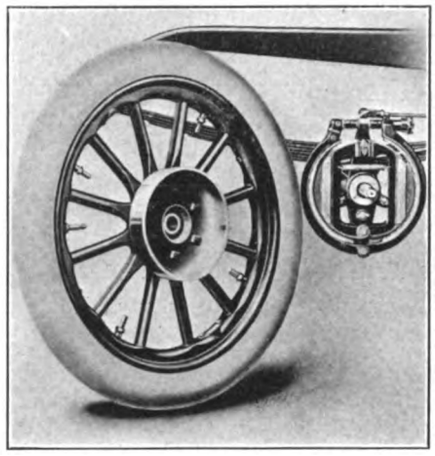
That it requires at least four times as much power to stop a car as it does to set it in motion, considering the averages of positive and negative acceleration, is a fact which when properly assimilated helps the average motorist to gain an added respect for the braking equipment of his car. This surprising testimony to the work which the braking equipment may be called upon to perform was brought out in a series of tests recently conducted by the Maxwell-Briscoe Motor Co., and was supplemented by a trial of various sorts of friction surfaces suitable for brake materials, conducted on the highways in the vicinity of the Tarrytown plant.

The relation between the power required to start a car under average conditions and that required to stop it, is based upon experimental data which has shown that about 300 yards are covered by the average machine before it can gain its full headway from a standing start. But no less than 75 feet will be required to bring the machine to a full stop when traveling at its top speed. From these distances, the ratio of the respective accelerating powers have been calculated.

The deductions from these experiments have led to but one conclusion as to the only proper place for a brake to operate, says an official report of the tests. Since everything between the brake and the wheel must be subjected to this enormous strain, the brake and the wheel must be constructed together; this alone will eliminate the great disproportion of driving strength and braking strain. It is this that has led the Maxwell company to place both the foot and emergency brakes on the rear hubs, the only position where all danger of breakage is entirely done away with, and where the full efficiency of the brake is guaranteed.

The road tests were held near the factory on the morning of Wednesday, September 23. A smooth stretch of macadam road was selected, with plenty of room for getting up speed, and a four-cylinder car with a passenger capacity of five persons chosen, equipped with a standard double external contracting rear hub brake, which is here illustrated. With passengers the car weighed about 2,850 pounds. The first trial was made with the brakes lined with the new asbestos preparation used in the Maxwell cars and with the tonneau empty. The machine was speeded up to 30 miles an hour, and when the road mark crossed the driver's line of vision with the radiator, the brake was applied in full strength. The wheels immediately locked and the car came to a dead stop in 14 feet 10 inches, the distance measured from the line to the rear axles. Again it was tried. This time with the tonneau occupied; the wheels again locked immediately and the car came to a dead stop at a distance of 61 feet 6 inches from the line.

When the brake was thrown the wheels locked immediately and silently, there was no loss of time, undesirable noise, nor slippage. The other materials for brake lining were found to lack several of the most desirable characteristics of the asbestos lining. It was found that when cast iron blocks were used the car traveled about 25 feet before the wheels locked, that during that time the friction gave rise to a disagreeable scraping noise, and that due



ARRANGEMENT OF THE MAXWELL BRAKE

to the delay in the locking of the wheels the car traveled a considerable distance beyond the 61 feet of the asbestos. Hickory blocks were tried, but they too gave rise to the same disagreeable noise, it was found they burned easily and that the car covered approximately 17 feet before the wheels locked. Hickory blocks boiled in parafine showed improvement in the matter of noise and seemed to grip without the jerking experienced with the other two; they were found too to be more immune from combustion than the dry hickory—but they failed to lock the wheels until the car had traveled a distance of a little over 20 feet.

Red fiber, a papier mache product, was found to be better yet in the matter of noise, combustion and slippage, but the 12 feet found necessary to ensure locking the wheels debarred it when measured according to the standard of asbestos. Camel's hair was found most admirable; it was noiseless, it did not jerk, its life was long. But it too required about 12 feet in which to lock the wheels. Cork too was tried With the exception of the asbestos it was the most desirable; its life is long, it was noiseless, it gripped nearly instantly, but the gripping was accompanied by a severe jerking.

The observers therefore ranked the different materials in the following order for general efficiency:

1, Asbestos; 2, cork; 3, red fiber; camel's hair; 4, hickory blocks boiled in oil; 5, hickory blocks dry; 6, cast iron.

Causes of Drivers' Headaches.

Inexperienced drivers and occasionally those who have served quite a long time behind the steering wheel, frequently are annoyed by headaches which result directly from the strain of driving. Contrary to the prevailing impression, these are said not to be caused by the strain of constantly focussing the eyes on the shifting patch of road directly under the nose of the car, so much as by the use of ill-fitting goggles, or perhaps a cap which fits the brow too snugly. Another alleged cause of the difficulty is the use of headgear which is not sufficiently heavy to prevent the constant pouring of a blast of cold air directly upon the frontal bone. In any case, constant and unaccustomed pressure on the temples is quite as apt to be the cause of such uneasiness and pain in the head, experienced by the driver, as the stress upon the visional powers.

Growing Use of "Set Spark" Ignition.

It is stated upon good authority that at least 40 per cent. of the better known French makers have now adopted the "set spark" system of ignition regulation in preference to the use of the variable timing and hand regulation system which is in more common use in this country at this time. The advantage secured in ridding the driver of one of the numerous matters to be attended to in handling the machine, is obvious. The practice is made possible by the use of magneto ignition. The voltage of the magneto current increases with the speed, and the intensity of the spark consequently increases proportionately. This effect is supposed to compensate for the lead which otherwise would be required, so that the regulation is thus made automatic and in direct response to the speed.

Avoiding Looseness in Planetary Gear.

It is a wise precaution to go over the bolts which secure the several sections of a planetary transmission occasionally in order to see that no looseness exists. While the loss of one or more of these bolts might not permit the gear to separate entirely, there is danger that it may so weaken the fastenings as to allow the gears to work slightly out of their proper mesh, or that the remaining bolts be sheared off as a result of being overloaded.

About Refilling the Lubricator Tank.

When refilling the tank of a mechanically actuated lubricator the engine should be stopped. Otherwise there is danger of the formation of air locks with consequent interruption of the feed, if not its complete cessation.

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THE PROBLEMS OF FIRE INSURANCE

Difficulties Attending Fair Adjustment of Cost to Risk on Automobiles and Garages—Fallacies and Absurdities.

Individual gambling instead of rational insurance methods appears to prevail in the writing of fire policies on garages and motor cars, with the result that in the majority of instances the rates are stiff enough to give the gamblers a more than ample surety of profit. The whole subject of this class of insurance is as yet wofully disorganized, and while some agents are busy writing policies at rates that are proving rich dividend payers, a great many companies refuse to touch garage and automobile risks at all, through a fear of gasolene and its vapor that would be ridiculous were it not of effect in keeping up the rates. Consequently, the insurance problem at present is one of most vague and unsatisfactory status, and affords all sorts of pitfalls for the unwary.

The insurance people plead that this field is so new that as yet there has not been sufficient time for any large statistical generalizations on the risks and losses, and that therefore it is difficult to determine any standards or basic rates from which to calculate. A few of the companies have fixed arbitrary bases of calculation, but these are subject to such haphazard methods of being added to for this and that item, as to make it impossible for a garage owner to find out where he stands.

Unfortunately the garage interests are even less organized than the insurance interests in the matter, and about the only representation that they have had before the insurance companies has been through the Association of Licensed Automobile Manufacturers and to some extent through the American Motor Car Manufacturers' Association. In an effort to prevent the National Fire Protective Association from adopting a set of "standard" garage specifications that would be so highly ideal that no practical garage could be built to meet them, Coker F. Clarkson, of the Licensed Association, met the members of the committee having the specifications in incubation and persuaded them to hold up any final recommendation or action until the subject could have a more thorough investigation than had been given it, and further that the garage and motor car interests might have opportunity to present their ideas as to what might be considered a reasonable standard.

The chief evil in the adoption of an impossible "standard" for garage specifications would be that every departure from the "standard" would be made the basis for further additions to the rate, so that the garages might better have no standard at all than one which would present such wide differences from the actual risks as to give an excuse for excessive charges. Particularly is this the case when the insurance companies themselves will not commit themselves to the point of saying that if "standard" specifications" are adopted by the N. F. P. A., they will grant a lower rate to those garages which conform to them.

Inasmuch as the National Fire Protective Association consists chiefly of local boards of underwriters together with architects' associations, building trades organizations and the like, and has no rate making power itself, the dangers presented by its making declarations of what should be standard practice in garages have no corresponding benefits. By earnest importuning Clarkson has succeeded in getting the association to hold off for the present, but he is in need of suggestions and support from the garage and motor car interests for whom he is endeavoring to secure fair treatment.

With a view to proving, if possible, that the average fire risk on garages in New York City is no more hazardous than the ordinary manufacturing risk, Clarkson has kept a fairly complete record of garage fires in New York City for about a year. An estimate of the total net loss as compared with the total premium that would be paid if the rate were the same as on ordinary manufacturing risks, shows the proportion of loss to premium to be about 59 per cent. This estimate would indicate that with practically no excess over the ordinary manufacturing rate, the companies could take the garage risks with safety and profit. Upon presenting these figures to the various insurance agents and general managers, however, he was politely told that they were far from correct, but no authoritative figures were produced to confirm the assertion.

Having obtained the names of practically all the brokers in New York dealing in automobile insurance, Clarkson is undertaking a canvass to learn from each the basis, if any, on which their rates are figured, and to learn, if possible, the proportion of loss to premium on this class of insurance in the past.

"The dangers of gasolene," he says, "have been so advertised and emphasized that many of the men responsible for the rates, through lack of actual knowledge, entertain a wholly unreasonable fear of it. Instead of attempting to base their rates on what actually occurs in the garages throughout the country, they figure on what might happen under unusual and improbable circumstances. The companies that have been bold enough to go after the garage business have not hesitated to demand big premiums, and the garage owners have not been in a position to fight for anything more favorable."

A distinction should be drawn, Clarkson thinks, between framing "standard" construction and equipment specifications and devising standard rules of garage conduct. In attempting the latter, the National Fire Protective Association would be doing a good work, he believes, since there are great possibilities of improvement in the enforcement of garage rules which would lessen the dangers of explosion and fire. It is a felony under the law even to enter shoddy mill with matches on the person, and in other lines of industry where there is a very high fire risk the employes have become trained in taking the necessary precautions, but the free and easy way in which gasolene and fire are juggled in most garages, while proving in its results that gasolene is not half so dangerous as most people suppose, undoubtedly adds to the risk and nullifies to a great extent whatever precautions may have been taken in construction and equipment. Standard rules concerning the use of safety cans, the extinguishing of car lights while the tanks are being filled, the provision of sand pails and pans, the forbidding of smoking, and similar regulations all might be incorporated in a standard set of rules for universal enforcement, whereas a standard of construction for garages would work great injustice in many cases owing to the widely differing conditions that obtain in various localities.

Even an extremely superficial inquiry into the present status of automobile and garage insurance and the regulations that are either enforced or proposed in connection with it, discloses many contradictions and absurdities. Most cities have regulations that forbid cars coming out on the streets after dark without lighted lamps, while proposed insurance regulations would forbid the lamps being lighted inside the garage, or even at the doorway. Automobiles are required to be emptied of their gasolene for transportation on some ferries and railroads. Experience proves that a full tank of gasolene presents no danger of explosion, while an empty tank, containing only gasolene vapor and air, has great explosive possibilities. The probable ground for demanding the emptying of the tanks, however, is that in case of collision the full tanks might be punctured and give a too ready flow of fuel if fire were present While the presence of gasolene in garages is the subject of special regulations and permits, yet a Massachusetts jury recently decided that no permit is required, no matter how great the amount of gasolene, provided that it is kept in the tanks of the cars themselves.

Policies on cars, which have been made a specialty by several companies, are examples of ingenious construction, and the methods of determining the risk are as yet very arbitrary. Among the latest proposals is the suggestion that risks should be calculated largely according to the make and model of the machine to be insured, it being claimed that certain makes, by reason of their strength and the superior arrangement of their fuel tanks, together with their very sparing use of wood, are entitled to a lower rate than others where

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the tanks are more exposed and the body work is chiefly wood. It is even claimed that tabulated lists of the losses in the past disclose some makes as being far less liable to fire damage than others.

The clause exempting the insurance companies in cases of "fire originating within the vehicle" has been the subject of much recent litigation where machines have burned on the road as a result of collision, the spilled gasolene taking fire from the lamps. With but little variance in the circumstances, the courts have decided both for and against the policy holders, respectively, so that in situations of this kind the holder of a policy can have no certainty as to how he will fare.

The apprehensive way in which the different phases of automobile fire insurance have been taken up by the companies and their agents, resulting in high rates and arduous exactions, has not as yet changed to a broader method such as obtains in the older and familiar lines. With the exception of the work done by Clarkson in representing the Association of Licensed Automobile Manufacturers before the National Fire Protective Association and some of the rate making bodies, and the interest taken by the American Motor Car Manufacturers' Association, little organized effort has been made by the interests most affected, to get as favorable terms as might be obtained by a united and determined resistance to premiums based on fear rather than fact. For the insurance companies it may be said that they have been obliged to tackle the subject as best they could, with very little enlightenment or assistance from the automobile industry, the result being that whatever the industry has failed to contribute in information it has paid for in money.

Substituting Motor Cars for Milk Trains.

Wherever the transportation problem is proving particularly troublesome, handlers of large volumes of merchandise are learning to grasp the possibilities of the motor vehicle, and it is significant that where such efforts are made in a careful and thoroughly practical manner, the experiment seldom proves unsatisfactory. A recent instance in point is the adoption of a trial equipment of motor trucks by the German Milk Dealers' Association. Just at present wholesale milk deliveries are badly disorganized as a result of delays to trains which are often sidetracked, or even lost to the schedule, while the big dairy centers are so far off the railway lines in some instances as to occasion tremendous losses through slow haulage to the shipping points. A double equipment consisting of two heavy lorrys and trailers, is to be put to work, with the expectation that it will be able to move no less than 5.000 gallons of milk per day over its route between Anhalt and Berlin. If it proves successful, a proposal to adopt the same method in all the big German milk centers will be made.

NOW ONE OF THE BIG INDUSTRIES

Reeves Presents Figures Showing Growth of American Automobile Interests—Demand Equals Production.

From time to time there are launched at the heads of the reading public sundry figures as to the magnitude and prosperity of the automobile industry, many of which, it is sad to relate, are without proper backing of authenticity. Of the two most complete sources of reliable data on this subject, however, one was tapped last week, when on the occasion of the opening of the new term of the school of automobile instruction which is maintained by the Young Men's Christian Association in New York City, Alfred Reeves, general manager of the American Motor Car Manufacturers Association, discussed the strength of the industry by way of encouraging a swarm of potential candidates for positions in its numerous branches.

"It is estimated," he said in part, "that the present capital of the automobile business is about $105,000,000, with an additional $36,000,000 in kindred trades, and $57,000,000 more in garages and retail sales rooms, making a total of $198.000,000. According to latest figures obtainable, there are 58,000 employes in the automobile factories in this country; about 29,000 employed indirectly in the making of parts, while there are 21,500 in the sales and garage establishments. This gives a total of more than 108,000 employes.

"The records at the office of the American Motor Car Manufacturers' Association show that there are in this country 253 builders of automobiles, of which at least 123 are beyond the experimental stage, and are placing practical cars on the market. There are not less than 500 different trades involved in automobile manufacture, running from leather, varnish, broadcloth and buttons, to steel, brass and rubber.

"Although the importation of automobiles is fast decreasing, it is a fact that some $28,000,000 worth of foreign cars have been sold here. The trend is now going the other way, and the export trade of the American maker is increasing rapidly. It doesn't take very much of an imagination to figure that with our business methods, our unexcelled mechanics, our wonderful automatic machinery and our perfect factory systems, America will continue its lead in motor car building, both here and abroad.

"With 52,000 cars as a conservative estimate for this year, it is safe to say that 175,000 automobiles have been sold here during the past eight years. They are big figures, but it is a big industry.

"During the past year 13,980 cars have been registered in New York City alone, making a total registration since the law went into effect of 63,338 cars. Above all, and of great interest to those about to enter the trade, is the fact that 9,386 new chauffeurs were registered during the current year. One cannot be a pessimist on the automobile's future in the face of such figures. . . . .

"Factory reports indicate a tremendous production in motor cars for next year, running from machines that range from $150 for the school boy to $11,000 cars for the luxury-loving and speed-fascinated millionaires. . . . . Yet there is no reason to believe that next year will see an overproduction, provided good cars are made and sold at reasonable prices. The tremendous buying power of this country is evidenced in a score of ways, and particularly by the absorbing of motor cars during the past two years. Possibly next year's production will reach 75,000 cars. Yet we well know for the past five or six years a million buggies a year have been made and sold by the carriage people. Just what becomes of them no one has been able to say, but the buggy manufacturers continue to turn out these great quantities of horse-drawn vehicles. They are now turning their attention to motor vehicles, for the farmer is demanding the more modern type, for which he is quite ready to pay the price. One of the largest concerns of agricultural machinery plans to make 20,000 cars next year, yet this will hardly give them one apiece for their agents throughout the world.

"Taxicabs are fast coming into use, and there is hardly a city of tny prominence throughout the country which will not have occasion to use them. . . . . Last Year, in Paris, I was told that some 3,500 cabs were in use, which now has increased to almost 5,000. There are 1,500 cabs in London, and the number is constantly increasing. . . . . Last, but not least, we have the unlimited field of the commercial vehicle. . . . . As there will be no horses to take up room, and as they will carry twice the load and travel at twice the speed, it will be like widening the streets threefold."

How Racing Consumes Lubricants.

Some idea of the quantities of lubricant which are used in connection with the running of a great racing event such as the Vanderbilt Cup contest, may be gained from standing quietly on the lee side of the course while the competing cars roar by. A more definite idea, however, may be gained from the statement of one well known manufacturer who contributed to the success of the contest in question, that the nine makers who used his product took delivery of an average quantity of about 100 gallons each. The fact that the total deliveries at the various training camps along the course, amounted to more than 900 gallons, gives an inkling as to the probable outlay involved in this as well as other respects, in contests where the feature is great speed.

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22,000 MILES WITHIN 24 HOURS

How Chalmers-Detroit Made Remarkable Election Day Record—Non-Stop Run Covers Many Cities.

Twenty-two thousand miles within 24 hours is the remarkable Election Day achievement which must be set down to the credit of the Chalmers-Detroit "30" car. It was run under "non-stop" conditions and further distinction must be added to the performance by the fact that though the accomplishment of this tremendous mileage would require an apparent average speed of about 916 miles per hour for the 24 hours. theoretically at least, not a single speed law was broken. The apparently paradoxical result was as a mater of fact, brought about by the ingenious device of allotting the task to about 108 demonstrating cars located in as many agencies throughout the country. Though each of the cars went but 200 miles or a little more, the total was a creditable performance for the car as a class, since all machines were duplicates; and the "record" is fully as legitimate as many that have been held up for distinction as 24 hours track performances.

All of the cars in their respective cities, carried disinterested observers, in most cases members of the press, to note the performance of the machine at all times. The self-imposed conditions were that not one of the motors should be stopped throughout the distance and that no repairs should be made to the cars, other than tire work.

In New York, the car from Carl Page's garage with William Knipper at the wheel, made an early trip to South Norwalk, Conn., and several subsequent runs to Yonkers and Mount Vernon. A Motor World man who was carried as observer for a good portion of the trip, was able to report that that particular car "ate up" its 201 miles with remarkable smoothness, more than justifying the claims of its makers in respect to power and speed. Twelve gallons of gasoline were required for the run, an average of 16¾ miles to the gallon, and the quantity of lubricating oil was limited to 3 gallons. No adjustments were required, and judging from the limited sections of the performance witnessed, the entire 22,000 miles must have been accomplished with little or no effort. Interesting disclosures as to the actual totals of distances, consumptions and costs are promised in a complete report of the undertaking soon to be issued.

Jackson, Mich., Greets Bangor, Me.

Carrying greetings from the Mayor of Jackson, Mich., to the Mayor of Bangor, Me., a Jackson touring car with F. L. Homes, general manager of the Jackson Automobile Company and three companions, is making a "non-stop" run between those two cities. The start was made on Monday, October 24, and the route laid out includes Detroit, Toledo, Cleveland, Buffalo, New York and Boston, a distance of 1,600 miles. Latest reports state that the car passed through Rochester in good shape, in spite of continuous rain and bad roads. The engine had not been stopped up to that point, according to observers, chiefly newspaper men picked up along the route. This car is the 1909 model "H" four-cylinder, 30 horsepower type, having a 4½-inch bore, 4½-inch stroke, motor rated at 30 horsepower, three speeds selective change gear, multiple clutch and bevel gear drive. It has a wheelbase of 110¼ inches and weighs with its five-passenger body, 2,400 pounds.

How Maxwells Parked at the Cup Race.

Among the numerous parking arrangements provided at the Long Island Motor Parkway in connection with the Vanderbilt Cup contest of last week, perhaps none was



more elaborately carried out than that of the Maxwell-Briscoe Motor Co., which included in addition to the space provided for the cars, lavish arrangements for the entertainment of the guests. Quite an interesting feature of the scheme, however, was the use of electric lights for illuminating the space and the tent. Current for this purpose was derived from a private and isolated plant.

While there is nothing particularly novel in the use of automobile engines for power purposes, even when they are utilized without being removed from the chassis, the production of current for electric lighting purposes in such a way as this is rather out of the ordinary. As will be seen from the picture, the arrangements were neither elaborate nor difficult to provide.

For the transportation of the mails between the various postal sub-stations and the railway in Nuremburg, Germany, three 16 horsepower, and six 28 horsepower vans are to be put in service on the first of next month.

FIXING FOR MEDDLESOME VISITORS

Innocent Tricks that are Better than "Hands Off" Cards—Indiscriminate Handling Rendered Harmless.

Preparing an automobile for service as a show car on the salesroom floor involves many little tricks of the trade. One of these consists in loosening the steering gear mechanism so that the steering wheel has considerable back lash and can be turned freely for quite a distance without communicating any motion to the knuckles or the front wheels. The reason for doing this, as given by the demonstrator for a New York salesroom, is that the majority of people who come into a salesroom to see a new car always give the steering wheel a yank or two, and a loosening of the mechanism saves a great deal of unusual and unnecessary strain, besides giving us a loophole for arguing the merits of the car.

"Few people can resist the temptation to handle the steering wheel," he said, "and when a machine is standing still it takes considerable effort to make the front wheels turn. In standing beside a car and tugging at the steering wheel nearly everyone will pull with all their weight if the wheel does not turn easily. Of course, this brings an awful stress on the pillar and the connections. Strangely enough if the wheel be loose enough to turn easily, most of those who take hold of it are satisfied, even if it does not turn the front wheels. Once in a while somebody will comment that there is considerable play, but it is easy to show that it exists for a purpose. In fact that very opening permits us to expatiate on one of the particular points about our steering gear and to make clear how our construction makes it possible to effect a perfect adjustment of the gear no matter how much wear it has.

"Everybody likes to handle the change gear mechanism, too," he added, "and in order to make it is easy and satisfactory for the experimenters we generally try to arrange the lay of the gears so that changes can be made just as the car stands. An easy shifting of the gears creates a very favorable impression with many people. There is an art in preparing a car for showroom purposes. To keep the machine looking well it must be roped off to prevent anyone sitting in the front seats but must be free in access to the tonneau. Small pads placed at suitable points along the running board will protect the latter from the wear of dirty shoes and boots that rest on it as their owners lean against the car and discuss its merits. Unless a car is properly prepared and looked after, two weeks in a busy showroom will do it more harm than two months of ordinary service."

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GRAND JURY URGES IMPRISONMENT

Drastic Presentment Made to Kings County Court—Stricter Enforcement of the Automobile Law Demanded.

Declaring that from facts presented to them it would appear that the motor vehicle law is constantly being set at defiance and that violators are not adequately punished, the Kings County Grand Jury in a presentment handed up to Judge Dike in the County Court in Brooklyn early this week, recommended a more strict application of the clause prescribing the penalty of imprisonment. This phase of the law has been allowed to become a dead letter, it was claimed, with apparent hostility.

"Our attention has been called to the fact that the press of this county are continually reporting cases where the residents are being maimed, injured and killed in the streets of our great city, as the result of constant violations of the Motor Vehicle law," says the presentment.

"We called upon the Clerk of the Court of Special Sessions to appear before us and supply data showing the findings of that court in such cases covering the period from September 1, 1907, to September 30, 1908, with the following result:

"During that time 416 cases came before that court for violation of said law. The court appears to have inflicted a fine of $50 in four such cases, a fine of $25 in 11 cases, a fine of $20 in 11 cases, a fine of $15 in one case, a fine of $10 in 15 cases, acquitted 15, dismissed 30, sentence suspended on 126, bond forfeited on two, for motion 26, trial date, 125; total, 416.

"You will note from the above that not a single offender appears to have been punished with imprisonment as a result of having violated that law.

"The findings of that Court appear to prove conclusively to us that the law in question has been allowed to become a dead letter. The lives of our citizens being in constant jeopardy as the result of such violations, we would recommend that the spirit of the law be revived, and that in flagrant cases or where a person has become an habitual offender that the culprit be punished with a sentence of imprisonment. Where a chauffeur or owner is found to be a frequent offender we would recommend that they not only be sentenced to prison, but that in addition to this that their license be revoked."

Dynamiting of Scorchers Suspected.

Dynamite traps to blow up speeders are thought by the Chicago police to be in existence in the Windy City's suburbs. A big red touring car was blown to atoms a short time ago, and no traces of the three men occupying it could be found. The only clew to the identity of the machine was the license tag, bearing the number 2923 Illinois, registered in the name of a Chicago millionaire. The latter had taken his car from the garage the night before, and his continued absence lends support to the police theory that he met death in a dynamite speed trap.

Rochester Club Urges Careful Driving.

"Drinking and driving a car should not be indulged in on the same day; if you must drink, do your driving in a hack," says Secretary Van Tuyle, of the Rochester Automobile Club, who thinks he ought to know. Van Tuyle's sentiments were expressed in connection with a resolution passed by the club on Saturday, 24th ult., regarding stricter observance of the traffic ordinances. The resolution urges members to slow down before turning corners; not to dart ahead of vehicles in a crowded street, and to stop or slow down when appoaching persons who appear to be confused, et cetera. It is insisted that if members will follow the suggestions outlined, fewer accidents will be reported. What the resolution did not say about looking upon the wine when it is pink, led the secretary to cover this ground himself.

Learning How to Stop the Car.

As his first and most important rule of automobile safety for inexperienced drivers, Winthrop E. Scarritt proposes: "Learn to stop your car." The rule is meant in a deeper sense than merely to know how to stop the car. As Scarritt explained in an address at the opening of the Y. M. C. A. Automobile School, in New York City, last week: "The young driver should repeat over and over again, What shall I do to stop quickly? Push out that clutch, pull on that brake. By constant repetition and practice one learns finally just what to do without lacking time to think. You have all day in which to start your car; your life may depend some day on how quickly you can stop it."

Oil Drippings May Cause Lawsuit.

Oil that dripped from automobiles upon the pavements at a prominent corner in Utica, N. Y., is alleged to be the cause of a horse's death recently, and the owners of the horse are threatening to sue the city for contributory negligence in not enforcing the ordinance designed to prevent machines from dripping lubricants on the roadway. The horse slipped on the oily pavement and broke its leg, so that it had to be killed. The prospects of suit have stirred the police to a strict enforcement of the ordinance.

Court Finds New Form of Insanity.

When a man gratifies his love of automobile rides by renting machines when he cannot afford it, he is held to be insane by the courts in Cleveland, O. A traveling salesman, Ellis Fischer, has been sent to Cleveland's insane asylum as a result of a mania in this direction.

BUFFALO RIGIDLY ENFORCES LAW

Prosecutions Under the "Lights" Section Develop Some Interesting Points—Status of Idle Cars.

Motorists of Rochester, N. Y., are more or less exercised just at present over the administration of that section of the state automobile law which relates to the use of lights at night. George J. Bauer was arrested last week charged with neglecting to show a red light on the rear of his car. When stopped by patrolmen Louth and Niedert, he said that as all of the lights on the car were burning when he left the garage he supposed they were still in proper order. The officers, however, claimed that they could not see the tail-light because the bulge of the tonneau cut off its rays. When fined by Judge Chadsey in the police court, Bauer gave notice of appeal. The case is the outcome of a campaign of special activity recently undertaken by the Rochester police in enforcing the lamp law. In addition to the question of the position of the lamp as determining whether or not the motorist is complying with the legal requirement, another point which developed in connection with other cases brought simultaneously with that of Bauer was as to whether a car standing in front of its owner's house is in use, technically speaking. One owner when brought into court, contended that he had to extinguish the light on his car to keep children away, and that as it was stationary no lights were required.

Massachusetts Association Chooses Bliss.

Members of the Massachusetts State Automobile Association, at a meeting held last week, elected officers for the ensuing year. A. E. Bliss, of Malden, is to be the next president; A. D. Converse, of Winchendon, vice-president; John C. Kerrison, of Boston, secretary. For the latter office, a number of the members wanted to elect the present incumbent, James Fortesque, but he flatly refused to accept the re-nomination. Chairmen of committees were selected as follows: Legislative, A. D. Converse; Good Roads, A. D. Chase; signboard, John P. Coghlin.

Middlesex County Motorists Form Club.

New Brunswick, N. J., boasts a new motor organization—the Middlesex Automobile Club, which was launched with 24 charter members last week. Its wheels were set in motion by W. C. Crosby, acting president, and H. A. Bonnell, secretary of the Associated Automobile Clubs of New Jersey, and it will be represented in the councils of the latter body as well as affiliating with the A. A. A. in the near future. L. A. Voorhees, of New Brunswick, was appointed temporary chairman, and Arthur W. Clark, temporary secretary.

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ADAPTING SHIPS TO MOTOR CARS

More Room 'Tween Decks Made Necessary by Increase of Automobile Touring—One Line Meets the Demand.

That the greatly increased use of American cars by motorists touring abroad has made it necessary to alter the arrangements of the steamers of at least one of the great trans-Atlantic lines is the surprising fact disclosed by a letter from the designing and construction department of the line in question to a prominent American maker who is credited with producing from 30 to 40 per cent. of the cars which are used in this way. The steamship company states that when Americans first began taking their cars abroad for touring purposes, they were content to land at Southampton, Cherbourg or Bremen. Now, however, many prefer to land in Italy and then tour northward, embarking for the homewtrd voyage from one of the northern ports. The distance between decks of this company's Mediterranean steamers was not sufficient to care comfortably for the crates used for the large suburban or entirely enclosed cars and now on all steamers of their line the distance between decks has been increased nine inches. This additional space will allow easily for the largest enclosed cars.

Compels Trip from Coast to Coast.

In a courageous and, thus far, apparently successful effort to regain lost health, Mr. and Mrs. H. A. Hover of Hover, Washington, two members of the Spokane Motor Club, arrived in New York City yesterday (Wednesday) after a long trip from the Western Coast in a 2 cylinder Maxwell car. On April 11 last, the outset of the tour, which is to take them around the globe, Mr. Hover dipped his tires into the Pacific Ocean at Tiajuana, a small Mexican village, and upon reaching the Metropolis, waded the car into the Atlantic, joyously completing the first long lap of the expedition, made entirely under the car's own power.

From New York the Hovers will sail for Algiers and penetrate through Egypt and Tunis, into the Sahara Desert and thereafter tour every country in Europe, and a good part of Asia, until the winter of 1911, when the homeward trip will be commenced, taking in the Philippines, Australia, New Zealand and Hawaii, motoring whereever possible. From the latter place they will sail for San Francisco in the winter of 1912. It is expected that more than 75,000 miles will have been covered by that time.

Motor Plow for Army Entrenchment.

One of the most recent acquisitions of the French War Department is a motor plow destined for use as a trench excavator for use in field manouvers. While ordinarily horse-drawn, when in action it is propelled by its own power, a 100 horsepower four cylinder motor being used for the purpose. A very heavy fly wheel which is driven directly by the motor carries four steel blades which perform the function of excavators. Other elements of the device are a plowshare, spades and a harrow. The system is the invention of a young engineer named Riester.

Helping Their Mail Carrier Buy a Car.

Instead of saving his pennies to buy a machine for himself, a negro mail carrier on rural route No. 1, of Argenta, Ark., has hit upon a much better scheme, which consists of having his patrons buy it for him. Two months ago the carrier, F. W. White, made a demonstration run in a motor buggy and completed the delivery on his whole route inside of three hours, where his horse and wagon method takes a day. Following this he mailed a circular letter to everyone on the route, asking them to contribute toward the purchase of the buggy, in return for which they would benefit by the improved service. So far he has received $475 and only needs $100 more to buy the vehicle.

Peanut Crop to Boom the Motor Car.

Peanuts, which long have been used as an example of cheap insignificance, loom up with considerable importance in the automobile business of Texas, according to W. F. Reynolds, southern representative for the H. H. Franklin Mfg. Co., of Syracuse, N. Y. "In Texas," he explains, "the forecasting of business for the coming season is now based to quite an extent on the outlook of the peanut crop. In one section a yield of 150 bushels per acre is reported, giving the peanut a lead over all other crops in that vicinity. If the peanut crop is good, the automobile business will feel the resulting prosperity."

Automobiles for Funeral Corteges.

Because San Antonio's graveyards are almost full, a new cemetery has been laid out, some distance from the Texas city. It is difficult of access, however, because the street car company has refused to extend its tracks to the new location, and so Mayor Bryan Callaghan has called upon all the automobilists of the city to assist whenever there is a funeral to the new place, by renting their cars to the mourners at a fixed rate. Being made as a call to civic duty, the mayor's request has met with a ready response.

More Municipal Cars for Chicago.

Three new Mitchell cars have been purchased for the use of the Building and Boiler Inspection Departments of the city of Chicago. Comptroller Walter L. Wilson ordered these purchases after a personal inspection of the company's factory, although he had been urged by his city hall associates to buy higher priced cars than those he selected.

INTERNATIONAL BUREAU OF ROADS

Paris Congress Establishes Permanent Body to Collate Information—Next Congress to Meet in 1910.

Aside from a bulky set of resolutions indicating the consensus of opinion as to the best methods of treating the problem of highway construction, the most important outcome of the recent International Roads Congress in Paris was the establishment of a permanent international bureau comprising one or more delegates from each country represented in the congress which will enable the results of the experience of road engineers the world over to be collated and put into useable form. In connection with the resolutions emphasis was laid upon the necessity of using great care in the construction of foundations.

A layer of concrete from four to six inches thick is especially recommended in the resolutions. As for the road itself, it should be composed of homogeneous materials which are hard, tough, resisting and not slippery. The use of tar, bituminous products, and deliquescent salts are effective for reducing the dust, but at present the results are far from permanent, and further experiments with these and similar compounds are invited. Tarring, properly carried out, is declared to be a remedy against dust, and to a certain extent a preservative against the wear and tear caused by all traffic, especially by fast motor vehicles. As for the plan of mixing the tar with the road material, no definite opinion was announced. Where motor traffic is not very heavy, it is considered that the present system of road making is sufficient, if it be carried out carefully and with proper materials. Roads should have the least amount of camber possible with easy drainage of rain water. The outside of curves should be slightly raised, and there should be no obstruction to the view at curves or at the intersection of roads. A uniform system of marking distances should be devised, and for the benefit of international automobilism a uniform system of road signals should be adopted. These should be limited to four kinds, respectively warning against obstruction, including dangerous hills, corners, level crossings—by night as well as by day—and dangerous cross-roads. It was resolved that the next Congress shall be held in Brussels in 1910. Incidentally, it was the general opinion that the automobile movement should not be censured for causing excessive road wear. As responsible for new traffic conditions, it was decided that where necessary, new methods should be devised to meet them.

"The A B C of Electricity." Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

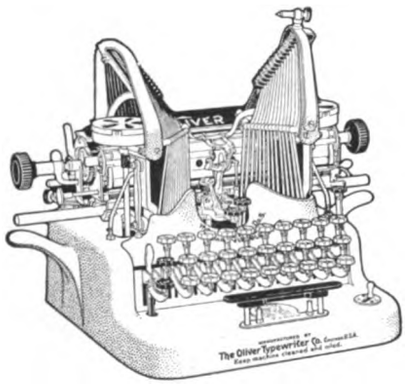
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Seventeen Cents a Day

Buys an Oliver Typewriter!

This amazing offer—the New Model Oliver Typewriter No. 5 at *17 cents a day* is open to everybody, everywhere.

Is's our new and immensely popular plan of selling Oliver Typewriters on little easy payments. The abandonment of *longhand* in favor of clean, legible, beautiful *typewriting* is the next great step in human progress.



Already—in all lines of business and in all professions—the use of *pen-and-ink* is largely restricted to the writing of *signatures.*

Business Colleges and High Schools, watchful of the trend of public sentiment, are training a vast army of young people in the use of Oliver Typewriters.

The prompt and generous response of the Oliver Typewriter Company to the world-wide demand for *universal typewriting*, gives tremendous impetus to the movement.

The Oliver, with the largest sale of any typewriter in existence, was the logical machine to take the initiative in bringing about the *universal use* of typewriters. It *always* leads!

Save Your Pennies and Own an Oliver

This **"17-Cents-a-Day"** selling plan makes the Oliver as easy to **own** as to **rent.** A man's **"cigar money"**—a woman's "pin money"—will buy it.

Clerks on small salaries can now afford to own Olivers. By utilizing spare moments for practice they may fit themselves for more important positions.

School boys and school girls can buy Olivers by saving their **pennies.**

You can buy an Oliver on this plan at the regular catalog price—$100. A small first payment brings the machine. Then you save 17 cents a day and pay monthly.

And the possession of an Oliver Typewriter enables you to **earn money to finish paying for the machine.**

Mechanical Advantages

The Oliver is the most highly perfected typewriter on the market—hence its 100 PER CENT. EFFICIENCY.

Among its sources of conveniences are:

—THE BALANCE SHIFT
—THE RULING DEVICE
—THE DOUBLE RELEASE
—THE LOCOMOTIVE BASE
—THE AUTOMATIC SPACER
—THE AUTOMATIC TABULATOR
—THE DISAPPEARING INDICATOR
—THE ADJUSTABLE PAPER FINGERS
—THE SCIENTIFIC CONDENSED KEYBOARD

Service Possibilities

The Oliver Typewriter turns out more work—of better quality and greater variety—that any other writing machine. Simplicity, strength, ease of operation and visibility are the corner stones of its towering supremacy in

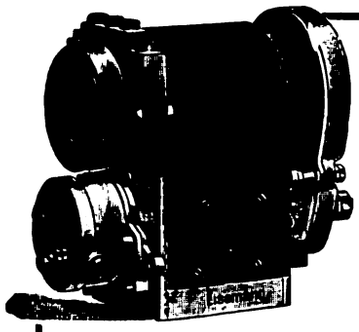
—CORRESPONDENCE
—CARD INDEX WORK
—TABULATED REPORTS
—FOLLOW-UP SYSTEMS
—MANIFOLDING SERVICE
—ADDRESSING ENVELOPES
—WORKING ON RULED FORMS
—CUTTING MIMEOGRAPH STENCILS

Can you spend 17 Cents a Day to better advantage than in the purchase of this wonderful machine?

Write for Special Easy Payment Proposition or see the nearest Oliver Agent.

THE OLIVER TYPEWRITER CO., **310 Broadway, New York City, N. Y.**

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MAGNETO

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VANDERBILT CUP RACE

The Most Reliable Ignition System in the World!
equipped on a Stock Car, 60 H. P. Isotta Fraschini, finished second, a few seconds behind a specially built 120 H. P. Racing Car

THE EISEMANN MAGNETO

ALWAYS A WINNER

WON

The Four Leading Road Races run in the U. S. A. in 1908

Savannah Race,	-	1st,	EISEMANN Magneto
Briarcliff Race,	-	1st,	EISEMANN Magneto
Lowell Race,	-	1st,	EISEMANN Magneto
Parkway Sweepstakes,		1st,	EISEMANN Magneto

WILBUR WRIGHT

won the world's records with the
EISEMANN MAGNETO
equipped on his aeroplane

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The Week's Patents.

894,676. Pneumatic Tire Protector. Rufus A. Mason, New Market, Iowa. Filed Sept. 9, 1907. Serial No. 392,019.

A pneumatic tire protector, comprising a series of plates having formed therein oppositely disposed apertures between which and the adjacent edge of the plate the metal is offset to form recesses or depressions on the inner sides of the plates, and a series of links adapted to be engaged to said apertures and depressed portions of the plates, whereby said links form projections or obstructions on the outer surface of the protector, while the inner surface of the latter is smooth or unobstructed, substantially as described.

894,709. Changeable Speed Gearing. Walter Scott, Sheridan, Wyo. Filed Nov. 26, 1907. Serial No. 403,892.

1. A changeable speed gear comprising a driven shaft, a plurality of concentric gear wheels secured to the said driven shaft, a driving shaft at a right angle to the said driven shaft, a plurality of normally loose pinions in mesh with the said gear wheels on one side of the axis thereof, a normally loose reversing pinion in mesh with one of the said gear wheels on the other side of the axis thereof, clutch mechanisms for engagement with the said pinions and mounted to slide on and to turn with the said driving shaft, shifting levers for shifting the said clutch mechanisms, pins fixed on sundry of the said shifting levers, spring-pressed swing arms pivoted on the remaining shifting levers, each swing arm carrying a pin, a controller shaft, and cam arms radiating at different angles from the said controller shaft and adapted to engage the said pins to actuate the corresponding shifting lever.

894,719. Gearing for Motor Vehicles. Frank Beemer, Philadelphia, Pa., assignor to Standard Roller Bearing Company, Philadelphia, Pa., a Corporation of New Jersey. Filed June 19, 1907. Serial No. 379,741.

1. In motor vehicle gearing the combination of a driven gear wheel, bearing supports for the same, and a pair of cam faced collars whereof one is pivoted with a latch and the other with teeth whereby the gear wheel may be shifted and held in proper position, substantially as described.

894,750. Road Vehicle Wheel. John Slee, Earlstown, Newton-le-Willows, England. Filed March 18, 1907 .Serial No. 362,985.

1. In a wheel, the combination with the felly, of a retaining ring on each side of and projecting beyond the felly, segments of compressible material between the rings and free to expand inwardly toward the felly and bolts passing through the felly and rings to cause the rings to laterally compress the segments, the inner faces of the rings which bear upon the segments being annularly grooved.

894,751. Tire Protector Holder. Frank O. Slanker, Pomona, Cal. Filed Dec. 20, 1907. Serial No. 407,317.

1. A tire protector comprising an annular rim provided with headed projections from its sides, opposite annular guard plates slotted to removably embrace said projections and extended inward to form a guard inclosing a portion of the spokes of a wheel intermediate of said rim and the hub thereof, and a yielding packing disposed at the opposite inner faces of the central opening in said plates to surround said spokes.

894,775. Sparking Device for Explosive Engines. Charles R. Greuter, Wilkes-Barre, Pa., assignor to Matheson Motor Car Company, Wilkes-Barre, Pa., a Corporation. Filed April 25, 1907. Serial No. 370,276.

1. A sparking device comprising a fixed and a movable electrode, a resilient spring connected to the movable electrode, oppositely disposed yielding members acting to hold the movable electrode normally out of contact with the fixed electrode, a cam located in operative relation to said spring, and means for shifting said spring to vary the time of contact of the cam therewith.

894,776. Vehicle Wheel. George H. Gruss, Goldfield, Nev. Filed April 18, 1907. Serial No. 368,871.

A vehicle wheel, comprising a hub having a cylindrical sleeve adapted to fit an axle, radial flanges at the ends of said sleeve, each of said flanges being provided with a row of perforations around its outer edge, two radial flanges surrounding the central portion of the sleeve, a resilient packing between said last mentioned flanges, an annular plate between said flanges and surrounding said packing, an inner tire shrunk upon the outer circumference of said plate, eyes carried by said inner tire, a plurality of spiral spring spokes connecting said eyes and the perforations in said first mentioned flanges, and an outer tire surrounding said inner tire and secured thereto, said outer tire having its outer surface provided with a plurality of grooves.

894,800. Power Translating Apparatus. Joseph Sachs, Hartford, Conn. Original application filed Sept. 19, 1903, Serial No. 173,801. Divided and this application filed July 2, 1904. Serial No. 215,092.

1. In a power translating apparatus, the combination with a prime mover and a driven member, of a generator armature, a motor armature, and means by which the shafts of said armatures may be connected whereby the driven member is always operated through the shaft of the motor armature.

894,958. Friction Drive Mechanism for Motor Cars. Charles C. Keyser, Washington, D. C. Filed Dec. 16, 1907. Serial No. 406,710.

1. The combination of a driving shaft and a driven shaft; a carriage slidable upon the driving shaft; a friction gear secured to said carriage; a friction gear secured to the driven shaft and adapted for contact with the first-mentioned gear; a pivoted arcuate guide connected intermediate its ends with said carriage; and means for swinging said guide bodily in one direction to impart a sliding movement to the carriage and the gear secured thereto, and withdraw the latter from contact with the last-mentioned gear.

894,980. Running Gear for Vehicles. George M. Phillips, St. Louis, Mo. Filed May 19, 1906. Serial No. 317,724.

In a running gear for vehicles, an axle; circular cushioned frames having concave peripheries; a circular pneumatic cushion mounted in the concave periphery of each of said frames; a suporting bar arranged above and parallel to the axle; housings carried by the supporting bar and concaved to register with the upper surfaces of the pneumatic cushions; projecting ears mounted upon the outer ends of the housing; a vehicle body; and springs upon which the vehicle body is mounted, said springs being supported by said projecting ears, substantially as described.

895,149. Universal Joint. Maurice E. Blood, Kalamazoo, Mich. Filed May 17, 1905. Serial No. 260,836.

1. In a universal joint, the two forks adapted to be secured to the ends of two shafts, the arms of said forks being perforated at right angles to the shafts; bushings for said arms; a cross formed by two pins, one passing through a hole crosswise through the other, the outer ends of said pins being journaled in said bushings in the forks, said bushings each having a threaded portion projecting beyond the face of the forks; and a grease cup, screw-threaded to fit each of said bushings, substantially as shown.

895,202. Compensating Gearing. David

DOW TUBES
The Best Tubes Ever Manufactured.
Are the most economical. Do not deflate when punctured.
DOW TIRE COMPANY,
2000 Broadway, New York.
889 Boylston St., Boston, Mass.

The "Gotham" STA-RITE will end your spark plug troubles. Soot can't stick to the porcelain.



Won't short-circuit. Never leaks. Can be taken apart and cleaned with ease. Of dealers, or direct, $1.00.
THE R. E. HARDY CO., 25 W. 42d St., New York.

The Genuine PIRELLI Costs No More than the Imitations

therefore you have no reason to be imposed upon. We will be pleased to send a small section of Pirelli Cable to any one interested—for comparison.



254 15 m.m. High Tension Rubber.

To Avoid Ignition Trouble, Specify PIRELLI Wire.

PIRELLI & CO., 296 Broadway, New York

For sale by MOTOR CAR EQUIPMENT CO., 55 Warren St., and 1727 Broadway, New York City.

It is not possible for any chain to be better than
BALDWIN CHAINS
BALDWIN CHAIN & MFG. CO.,
Worcester, Mass.

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E. Ross Brookston, Ind., assignar to Ross Gear and Tool Company, La Fayette, Ind., a Corporation of Indiana. Filed Oct. 27, 1906. Serial No. 340,808.

1. In a device of the character described, a plurality of members, means common to said members for furnishing power for driving the same, means connecting said members whereby they may be driven at different speeds and devices for automatically increasing the driving torque of one of said members as the difference in their speeds increases.

895,205. Water Radiator for Automobiles. Charles F. Schell, Buffalo, N. Y. Filed Jan. 9, 1907. Serial No. 351,556.

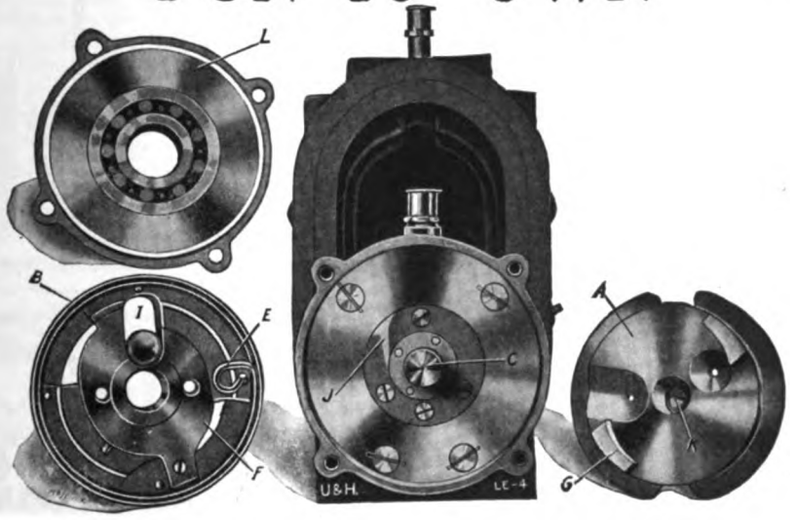
1. A tube for radiators formed of a single piece of metal folded upon itself at opposite ends and thence bent at right angles to the folded ends into the form of a tube.

895,222. Multiple-Cylinder Two-Cycle Explosion Engine. Alexander Winton and Harold B. Anderson, Cleveland, Ohio, assignors to The Winton Motor Carriage Company, Cleveland, Ohio. Filed April 13, 1908. Serial No. 426,875.

1. The combination with a multiple cylinder two-cycle explosion engine, of a single carburetter having a supply communication for each cylinder, and means for admitting air to said communications independent of the carburetter.

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The MAGNETO It's FUN TO OWN



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UNTERBERG & HELMLE

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ACCESSIBILITY

reaches its highest development in the

Unterberg & Helmle Magneto

You don't have to imitate the India Rubber Man in the Dime Museum to get at the interrupter adjustment—you take the interrupter right out and adjust it at leisure. Undoing one screw takes it out, and you can't make a mistake in putting it back. The condenser is likewise removable by taking out the interrupter.

The distributer is disassembled by taking out three screws, and is cleaned by removing a spring-held cover.

The firing position is determined by inserting a removable pin through the armature casing. You can take the magneto off bodily and replace it yourself without fear of upsetting the timing.

Type LE—The SELF-STARTING MAGNETO.
Type LB—WITHOUT the self-starting device; used with separate battery system. Other types for special uses.

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Sole Importers
TIMES BUILDING. NEW YORK

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15 cents per line of seven words, cash with order. In capitals, 25 cents per line.

WANTED—Young man of experience, with some capital, to take charge of St. Louis factory building automobile runabouts. Splendid opportunity to right party. Give full particulars as to your ability. Address C. M. V., care Motor World, Box 649, New York City.

WANTED—Position as advertising manager; have had years of experience in building catalogs, booklets, folders, etc.; also have a practical knowledge of printing values and all details in connection therewith. I hold similar position at the present time, but for good reasons desire a change. Address A. R. M., 1457 Wilson Ave., Chicago, Ill.

FOR SALE—300 sets 28x3 best grade artillery wheels, fitted with clincher rims, less hubs. Write for bargain prices on single sets of the lot. THOMAS B. JEFFERY & COMPANY, Kenosha, Wis.

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"The Oil in the Checkerboard Can"

Is the one perfect automobile lubricant. Panhard Oil is the only cylinder oil made that will lubricate at all temperatures. It insures against pre-ignition, pounding, and other costly engine troubles which are commonly caused by poor cylinder oil carbonizing in the cylinders.

The new Sealed Can protects you against the substitution of an inferior oil—always see that the seal is not broken.

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MICHELIN TIRE COMPANY
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Tourist $1,500 Roadster $1,250

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HAVE YOU SEEN
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The newest and best wrench made; all steel—great strength; instantly adjusted; easily and quickly operated; positive grip; immense time, trouble, and temper saver; best "all round tool" ever offered for sale.

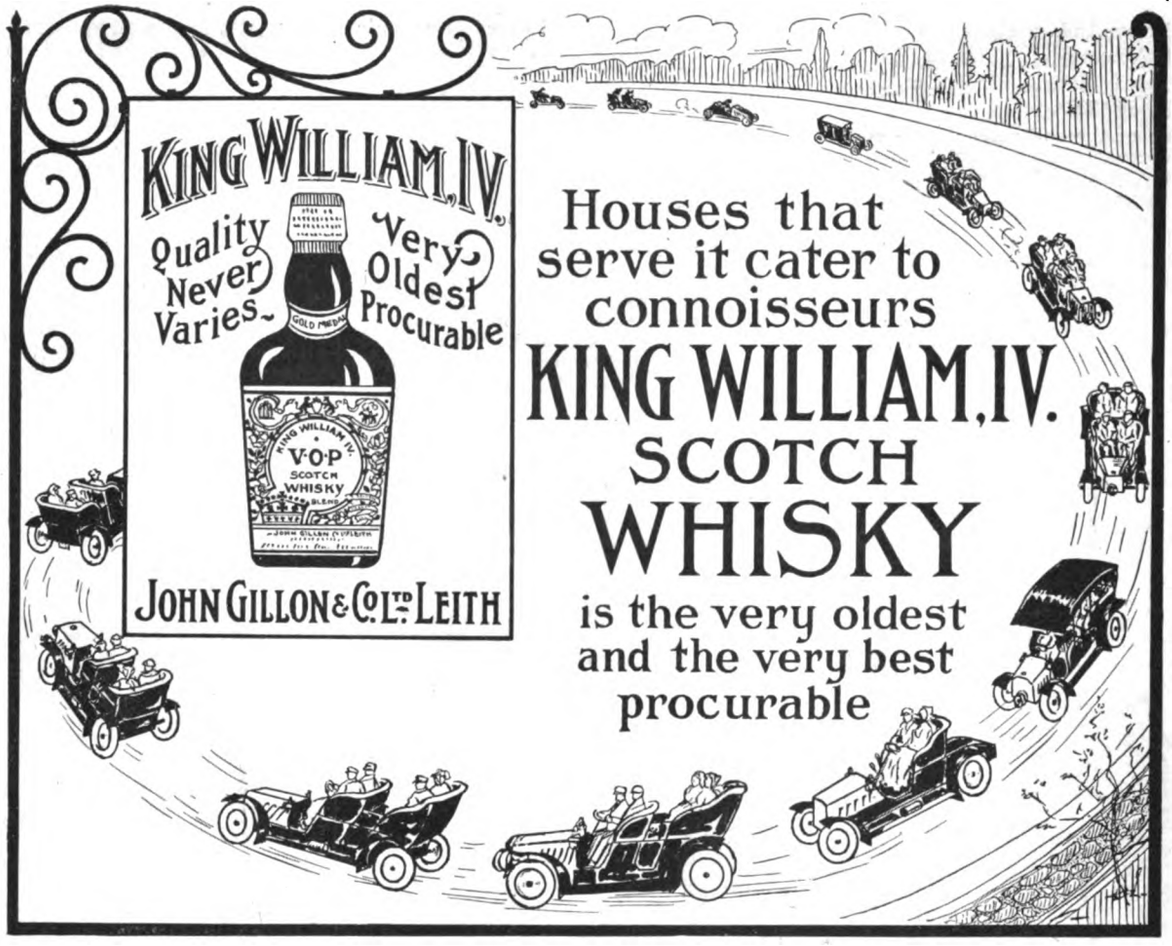
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For circular address,
THE PERFECTION WRENCH CO.,
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Columbia Gasolene and Electric Automobiles

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SUPPLEMENTARY SPIRAL SPRINGS

Change a bone-shaker and a spring-breaker into an easy riding, real automobile in which you can take pride and your passengers comfort. The use of S. S. S. change a near-good car to a real good car and add the finishing touch of luxury to the best cars. Our booklet tells you all about them, and is yours for the asking. Write for it.

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New York Branch, Removed to Motor Mart Building. (Larger Quarters.)

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IGNITION ABSOLUTELY SURE
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BLOOMFIELD, NEW JERSEY, U. S. A.
(Watsessing Station, D., L. & W. R. R.)

When your car wouldn't start it's aggrevating—when it wouldn't stop it's dangerous. Use
THERMOID BRAKE LINING

THE MARMON
"A Mechanical Masterpiece"
For catalog, address Dept. 16.
NORDYKE & MARMON CO.
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CLEVELAND SPARK PLUGS
"They Shoot a Flame."
CLEVELAND SPARK PLUG CO.
CLEVELAND, OHIO

THE 28-30 H. P. MITCHELL, $1,500
Includes genuine $150 Splitdorf Magneto (free) and ½ inch larger tires than you get with any other car at this price. To have other cars equipped with these tires you must pay $50 extra. Write for full information to-day.
MITCHELL MOTOR CAR CO.,
572 Mitchell St., Racine, Wis.
Standard Manufacturers A. M. C. M. A.

The PULLMAN
4-40 Roadster. Price, $3,000.
that made the run from Philadelphia to Savannah, Ga., March 5th to 18th, through mud up to the radiator, beating all previous records.
YORK MOTOR CAR CO., York, Pa.

THE GYROSCOPE CAR
The Simplest Automobile in the World.
$750—The Price—$750.
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Gyroscope Bldg.,
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Will YOUR 1909 Cars Have The Remy Magneto?

If not, you will be with the minority.

Because more Remy High Tension Magnetos have already been sold for 1909 cars than all our competitors combined can sell. The total to date exceeds 15,000. There must be a reason for this remarkable popularity of the Remy. You will find it in the more than 15,000 Remy Magnetos now in use.

More Remy Magnetos have been sold to manufacturers for American-built cars in past seasons than all other magnetos together.

Years of test with all kinds of gasoline motors, under all kinds of conditions, have developed the Remy to the highest degree of efficiency and certainty. And it is the simplest magneto made. No brushes to cause trouble, wear out or be replaced.

We are the Oldest Manufacturers of Magnetos in America

Our magnetos were giving splendid service on motors, gasoline tractors, etc., long before the automobile became practicable. The Remy is used in the 200 h. p. gasoline electric steel cars manufactured for the Union Pacific by the McKeen Motor Car Co.

The Remy is used with the powerful engines that operate the big Gerling gangs of fourteen plows in the West. Its efficiency has been proved in many automobile contests, as for instance, by the Buick cars equipped with the Remy, at Lowell, Mass., on Labor Day, and at Indianapolis, Sept. 18 and 19; by the Cameron at the Dead Horse Hill Climb, Worcester, Mass., June 6th; in the Economy and Hill Climbing Contests at Baltimore, Aug. 8th; by Knox cars, equipped with the Remy, at Norristown, Pa., Hill Climb, June 27th; Arrowhead Hill Climb, New York, July 11th; Shingle Hill Climb, West Haven, Conn., May 27th; Rockville, Conn., Hill Climb, June 30th.

The Remy is used on all the Buick Motor Co., Maxwell-Briscoe Motor Co., Apperson Bros. Automobile Co., Overland Automobile Co., Cameron Car Co., Midland Motor Co., Nordyke & Marmon Co., Kissel Motor Car Co., Olds Motor Works cars—and more Remys are being specified every day for the cars of other makers. Write for illustration and full description of our new magneto. We build them in such large quantities that we can make you very attractive prices.

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SOLAR LAMPS



Apperson	**Kissel**	**Pierce**
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They recognize that Solar Lamps have better light-giving qualities, are more durable and are better in construction than any other motor lamp on the market.

On all the best cars you will find the best lamps—

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Complete Catalog upon request.

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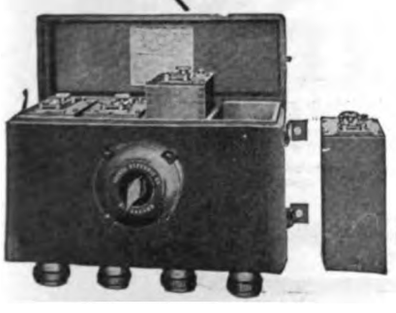
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Heinze ignition apparatus on your 1909 car and get

THE BEST MADE.

SPECIFY HEINZE COILS

Write us if your dealer does not carry them.



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The Supremacy OF Standard Bearings

is emphasized by the continued victories of the

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which is equipped fully with

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Their axles are also our work.

Standard Roller Bearing Co.

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MECHANICALLY——AND——ECONOMICALLY

Built in all sizes from 2 H. P. up to 60 H. P., in the largest and best equipped motor plant in the world.

Prompt deliveries assured. Send us your specifications and let us bid on your requirements.

Aurora Automatic Machinery Co., Builders of the most advanced type of Gasolene Engines

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New Model X Limousines

A town car of the most luxurious type. Every detail suggests elegance and refinement. Among the points that contribute to its beauty of design may be mentioned the rounded back and extension front with bent glass windows, a combination giving those symmetrical lines lacking in Limousines not having these features. The luxurious upholstering and interior conveniences leave nothing to be desired in the way of comfort. A dome electric light with switch affords an instant and brilliant light, toilet cases with accessories are at each side, and a speaking tube connects with the driver. Seating capacity of body: five passengers.

PRICE COMPLETE, $3,750.

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CHICOPEE FALLS, MASS.

Member of Association of Licensed Automobile Manufacturers.



Largely Because of the Best Ignition

A Knox Car equipped with a

SPLITDORF MAGNETO

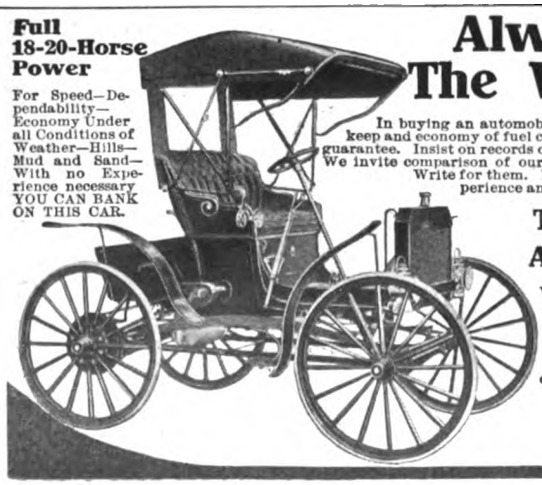
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If you want Ignition that you can bank on—Ignition that will give you more reliable, more efficient, more economical service than any other, specify the SPLITDORF Magneto and accept nothing else.

C. F. Splitdorf Walton Ave. and 138th St. Branch, 1679 Broadway. **New York**

Full 18-20-Horse Power

For Speed—Dependability—Economy Under all Conditions of Weather—Hills—Mud and Sand—With no Experience necessary YOU CAN BANK ON THIS CAR.



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In buying an automobile consider first cost, but hesitate longest to investigate upkeep and economy of fuel consumption. Buy a car where you can hold the maker to this guarantee. Insist on records of durability and the evidence of thousands of users' endorsements. We invite comparison of our catalogs—books—testimonials—which you can have for the asking. Write for them. But above all compare our factory facilities—expert workmanship—experience and the highest quality of every part of

The Invincible Auto-Runabout SCHACHT

with all others of this style car. Write us and investigate the meaning to you as an owner of a car like the Schacht. Full 18-20-horse-power—gearless—clutchless—Timken roller bearings throughout—easy riding long "Concord" springs—high, solid cushions, **Goodrich** rubber tires for economy of upkeep on all roads—Sheblar carburetors, etc.—Full high class equipment found only on high priced cars.

The Schacht is the easiest to run, simplest, most practical, most economical car you can buy—Let us show you all the reasons why. Write for literature. If interested as an **agent**—let us make you our **Special Proposition.**

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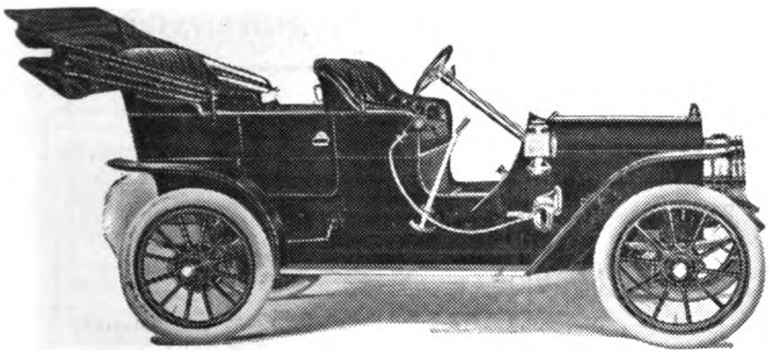
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Model B Touring Car, price $1,250.00. Full equipment, including two gas lamps, two side oil lamps, one tail lamp, generators, horn, tools, jack, pump and batteries. Top, $75.00 extra. Runabout, $1,200.

¶ A combination of simplicity and efficiency designed for the man who scrutinizes the car he is to buy, who intends to himself operate it, and to whom economy in up-keep and running expense is essential.

¶ The live agent will find in the Oakland a car that appeals to a large and intelligent class of purchasers and that will justify the fullest confidence.

¶ Correspondence invited.

OAKLAND MOTOR CAR CO., Pontiac, Mich.

J. B. ECCLESTON, Sales Manager, 53 Franklin St., Buffalo, N. Y.

The Oil You Can Feel At the Crank



The slightest "feel" of the crank proves the perfection of MOBILOIL. There is no possibility of anything but perfect lubrication in any gasoline engine, regardless of type. For different machines there are different grades of

VACUUM

MOBILOIL

Our booklet tells you which is the proper grade for *your* automobile—and why. A copy will be sent free on request. It contains much of interest to motorists.

MOBILOIL in barrels, and in cans with patent pouring spout, is sold by all dealers. Manufactured by

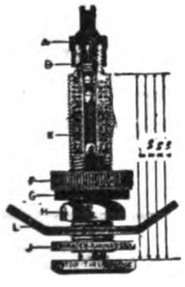


VACUUM OIL COMPANY
Rochester, N. Y.

ESTABLISHED 1844

SCHRADER UNIVERSAL VALVE

Trade Mark Registered April 30, 1895



SIMPLE AND ABSOLUTELY AIR TIGHT

Schrader Motor Tire Valves, as shown in cut, are the regular equipment for G & J Motor Tires, Hartford Dunlop Detachable Tires, Fisk Detachable Motor Tires, and New Goodyear Detachable Motor Tires.

Our No. 777 Motor Tire Valve is the standard for 2½ inch and 3 inch Tires and our No. 725 Motor Tire Valve is the standard for tires larger than 3 inches.

Supplied to the Trade by All Tire Manufacturers

Manufactured by **A. SCHRADER'S SON., Inc., 28-30-32 Rose St., New York**

Empire Tires

WEAR LONGEST

EMPIRE AUTOMOBILE TIRE COMPANY, Trenton, N. J.

New York, 148 Chambers St., and Broadway and 73d St.; Boston, 292 Devonshire St.; Buffalo, 724 Main St.; Fobes Auto Supply Co., Portland, Ore.; Fobes Auto Supply Co., Seattle, Wash.; Waite Auto Supply Co., Providence, R. I.; Chicago, 1301 Michigan Ave.; Atlanta, Ga., Dunham Rubber Co.; Denver Auto Goods Co., Denver, Colo.; Penn Auto Supply Co., Philadelphia, Pa.; Savell Rubber Co., Jacksonville, Fla.; Empire Tire & Rubber Co., Minneapolis, Minn.; The Motor Supply Agency Co., 1246 Euclid Ave., Cleveland, O.; The Consumers Auto Supply Co., 7th Ave. & Smithfield St., Pittsburg, Pa.

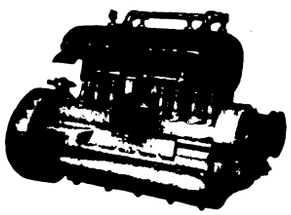
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Packard Ignition Cable

If your car is wired with **PACKARD ENAMELED IGNITION CABLE** you can be **dead sure** you will have no trouble so far as the wiring is concerned.

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"CONTINENTAL" MOTORS ARE STANDARD



Get our quotations on high grade two and four cylinder motors, 10 to 45 horsepower. They are equipped with self-contained oiling system and ready for attaching magneto. Highest grade workmanship, efficient, durable and simple. Also clutches and transmissions. Send for catalogue.

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K. FRANKLIN PETERSON, Western Representative, 166 E. Lake St., Chicago, Ill.

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Get Rid of Tire Troubles Try a Set of

G&J TIRES

TRUFFAULT-HARTFORD

Trade **SHOCK ABSORBER** Mark

The Device that made Safe, Speedy and Comfortable Automobiling Possible.

Write for catalogue, Department D.

HARTFORD SUSPENSION CO.,

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AVOID ACCIDENTS

by using the

Wridgway No Glare Shade

which adds to the efficiency of the lamps, and keeps glare from blinding other users of the highways. Can be fitted to any existing lamp.

PEERLESS MOTOR CAR CO.,

220 to 224 W. 41st St., NEW YORK

PALMER SINGER

1620-22-24 Broadway, New York

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PALMER & SINGER MFG. CO.

DIAMOND CHAINS

drive their cars more miles per dollar cost than any others

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150 W. Georgia St., Indianapolis, Ind.

"Firestone"

SIDE-WIRE SOLID MOTOR TIRES

THE WORLD'S STANDARD

FIRESTONE TIRE & RUBBER CO., Akron, Ohio

A SUPERB LINE OF CARS—

THE JACKSON

"No Sand Too Deep—No Hill Too Steep."
2-Cylinder and 4-Cylinder
Runabouts, Roadsters, Touring Cars,
18 H. P., 24 H. P., 30 H. P. and 36 H. P.
Prices, $850, $950, $1,250 and $2,000.

JACKSON AUTOMOBILE CO. Jackson, Mich.

DO YOU KNOW THAT MORE

Continental

Demountable rims are sold than all others combined. Write for information.

CONTINENTAL CAOUTCHOUC CO.,
1788-90 Broadway, New York City.

THE MAYO RADIATOR CO. HIGH GRADE

Rainier

1908 Model D. 50 H. P.
New factory, Saginaw, Mich.
Complete catalogues now ready.
RAINIER MOTOR CAR COMPANY,
Broadway, cor. 56th St., New York.

SUPERIOR Etched Name Plates

We are prepared to furnish you any kind or style as above. We shall be pleased to furnish quotations.

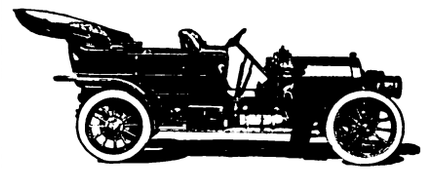
CHANDLER CO., Springfield, Mass.

Type C.

PENNSYLVANIA

"FIFTY"

We had the best car in America. We thought for a long while how to improve it and left it alone. You think that over.



Touring Car, Baby Tonneau or Roadster bodies, with double ignition, $3,000.

Pennsylvania Auto Motor Co.

BRYN MAWR, PENNSYLVANIA

A DUPLICATION, NOT AN IMITATION OF LEATHER.

AUTOFOID is a peculiar name. Try to remember it when next you are ordering material for tops, cushions, etc.

AMERICAN LEATHERETTE MFG. CO
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ONE Quality for ALL Models
ONE Price for ALL Buyers
Write for 1909 Catalog.
THE DAYTON MOTOR CAR CO.,
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FRANKLIN Automobiles

Franklin light-weight construction is stronger than ordinary heavy construction—and does a lot more. Write for catalogue.

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A Necessity On Automobiles—WHAT?

COLUMBIA LOCK NUTS

CANNOT shake loose. They add an important factor of safety and give a feeling of security. Columbia Lock Nuts are the best kind of accident insurance. Used by most makers of the best cars and by leading railroads, etc. Send us a two-cent stamp, size and thread of the bolt, and we will forward a Columbia Lock Nut for it.



COLUMBIA NUT & BOLT CO., Inc., Bridgeport, Conn.

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INTAKE. EXHAUST
Whitlock Coil Pipe Co.
RADIATORS
AND WATER PIPES
Hartford Conn.

Users of INVADER OIL
THE OIL THAT GRAPHITIZES
are responsible for its popularity
YOU NAME THE CAR
WE'LL NAME THE GRADE
MADE ONLY BY
CHAS. F. KELLOM & CO.
113 Arch St., Philadelphia
Boston Branch:
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Garford Motor Car Co.,
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TRADE MARK
REGISTERED

PERFECT FITTING HEAT TREATED
CLEVELAND-CANTON VANADIUM SPRINGS
MAKERS OF SPRINGS
FOR AUTOMOBILE PURPOSES
CLEVELAND-CANTON SPRING CO., CANTON, O.

Why pay high prices
FOR ALUMINUM
Axle Covers, Engine Crank Cases, Transmission Cases.
Have these made of Pressed Steel
JUST AS LIGHT
Stronger. Much Less in Price.
Send Prints for Estimates.
A. O. Smith Co.
243 Clinton Street, MILWAUKEE, WIS.

The Acme
JUSTIFIES ITS NAME
THE ACME MOTOR CAR CO.
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WE WILL NOT
accept your contract unless we can give you the delivery you require. We will not accept more contracts than we can fill with proper attention to each. We make Pressed Steel Frames and Automobile Stampings.
THE HYDRAULIC PRESSED STEEL CO.,
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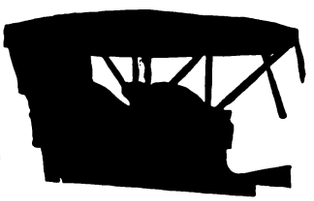
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LUBRICATORS — RADIATORS
"Marks of a Good Motor Car"
McKIM COPPER-ASBESTOS GASKETS
McCORD & COMPANY
NEW YORK—Hudson Terminal, 50 Church Street.
Old Colony Building, CHICAGO.

FRICTION DRIVEN
The car which has no clutch to slip—no gears to strip—no grease—no noise.
THE $1350 CARTERCAR
The Motorcar Company, Detroit, Mich.



Studebaker
Gasoline and Electric—for Pleasure and Business
Studebaker Automobile Co., South Bend, Indiana

SPRINGFIELD TOP (Pat. 1895)
Aluminum Bodies
SPRINGFIELD METAL BODY CO.,
306 Birnie Ave.,
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Steel Tires
Full of Air.
Tire expense cut in two.
Cannot Blow Out, Rim Cut or Puncture.
As Flexible as Rubber Anti-Skid.
That part of a tire with a blowout or a rim cut in it will last longer than any other part if encircled by a few sections of steel.
Thousands in use.
Kimball Tire Case Co.
172 Broadway
Council Bluffs, Iowa

THE MOTOR WORLD PUBLISHING COMPANY
154 Nassau Street, New York

Enclosed find $2.00 for which enter my subscription to
The Motor World
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THE National

WATCH FOR OUR 1909 ANNOUNCEMENT—It Will Interest You.

NATIONAL MOTOR VEHICLE CO., Indianapolis, Ind.

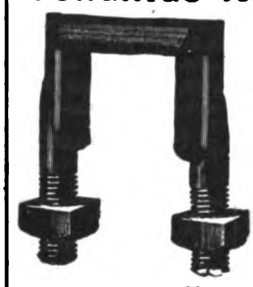


The Only Cure for Tire Troubles
The Only Genuine Spare Wheel
GET A
STEPNEY
AND KEEP GOING

Agencies in all the large cities.
Catalogue B tells all about it. Write NOW.

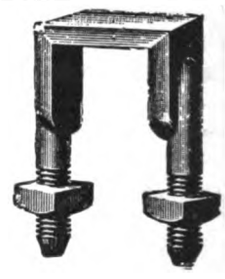
The Spare Motor Wheel of America, Ltd.
Main Office: 236 Michigan Ave., Chicago

FORGINGS for the AUTOMOBILE TRADE



Satisfaction Guaranteed

Thousands of our Spring Clips are now in use, having been supplied to the leading automobile manufacturers.



Have you secured our prices?

THE M. SEWARD SONS COMPANY, New Haven, Conn.

NEW ADJUSTABLE "S" PIPE



A very handy wrench for inconvenient places. Drop forged steel throughout, parts carefully hardened, and are interchangeable. Has patent nut locking device at side.

Write for new circular.

THE BILLINGS & SPENCER CO, Hartford, Conn.



For Automobile Bodies, Dashes, Guards, Bonnets, Battery Boxes, Drip Pans, Mufflers, Etc.

STRONG—DURABLE
CALELESS—RUSTLESS
SMOOTH—PAINT ADHERES FIRMLY

A Metal That's A Time and Money Saver

THE STARK ROLLING MILL COMPANY, CANTON, OHIO

Model B—Brush Runabout

A CAR OF SIMPLE DESIGN MADE WELL
NOT A COMPLICATED DESIGN MADE CHEAPLY

Its records and the opinions of its users speak more loudly than self praise. Agencies for 1909 are being closed rapidly. Much good territory still open.

BRUSH RUNABOUT COMPANY, Detroit, Mich.

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Locomobile

Establishes American Supremacy in Automobiles

Wins the Vanderbilt Cup

The Greatest International Road Race ever held in this country and the supreme test of reliability and endurance.

258 MILES IN 240 MINUTES

OVER A SLIPPERY COURSE

Locomobile No. 16 was first; Locomobile No. 1 would have finished in third place, but the race was called off after two cars had finished. At this unexpected announcement touring cars came out on the course, and as No. 1 Locomobile neared the Grand Stand on its last lap it came in collision with a car 25 YARDS FROM THE TAPE. The Cup Commission had notified the drivers before the race that five cars would be allowed to finish. Out of 19 entries, of which 7 were foreign cars, LOCOMOBILE RAN FIRST AND THIRD. Two cars placed. Something heretofore unknown in any contest for the Vanderbilt Cup. No trouble of any sort was experienced on either of the two cars except from the tires, which were of the anti-skid variety, necessitated by the slippery course.

Made the Fastest Lap

The Locomobile No. 16, driven by Robertson, made the fastest lap—23 45-100 miles—in 20 minutes and 17 seconds. It also ran 5 other laps in less than 21 minutes each. ITS AVERAGE SPEED DURING THE RACE WAS 64 3-10 MILES PER HOUR, INCLUDING ALL STOPS. THIS SMASHES ALL RECORDS FOR THE VANDERBILT CUP, no previous average reaching 62 miles per hour.

Both cars are of 90 h. p. and are substantially the same as our regular stock product, the difference being one of dimensions, so that the victory stands as a splendid triumph for Locomobile design and construction—a triumph for the Locomobile low-tension ignition system, the Locomobile magneto, the 4-cylinder motor, the selective transmission system and other features of the car. The material used in our regular product is everywhere as good and in some places even better than that used in the cars entered in the race AND WHICH WERE BUILT IN 1906.

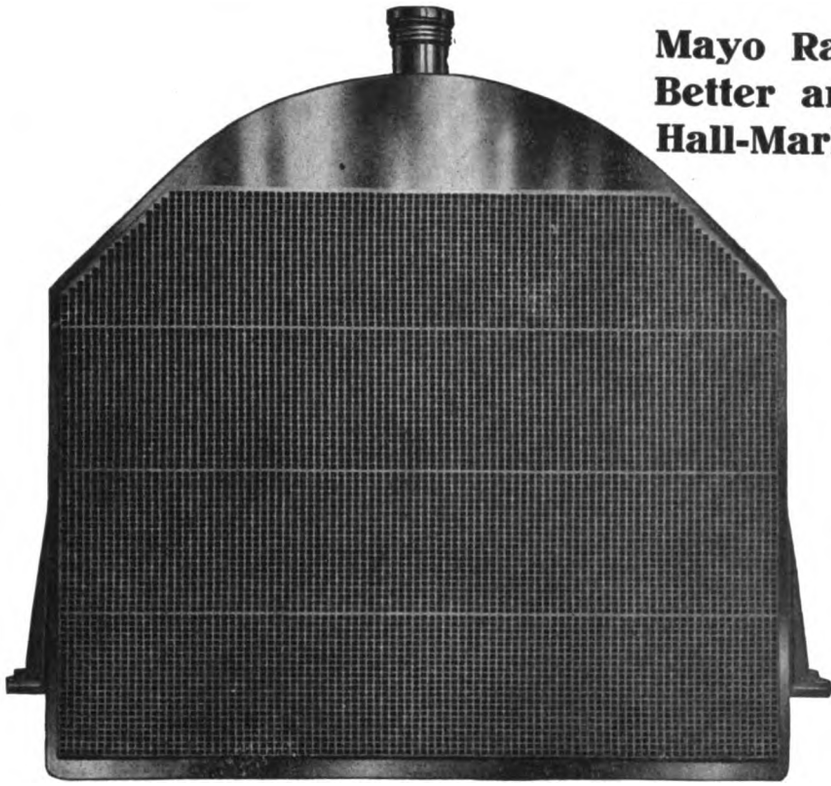
The consistent performance of the two Vanderbilt Cup Locomobiles is but a repetition of the performance of the two entries in the great Founders' Week Stock Car Race in Philadelphia, October 10. This great race was won by a 40 h. p., 4-cylinder Locomobile, regular in every way.

THE LOCOMOBILE CO. OF AMERICA

BRIDGEPORT, CONN.

MEMBER OF ASSOCIATION LICENSED AUTOMOBILE MANUFACTURERS

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Mayo Radiators Make a Good Car Better and Their Use on a Car is a Hall-Mark of Quality.

¶ Mayo Radiators are made in a quality shop. In their construction no expense is spared, no crude methods obtain. In their use complete satisfaction results.

¶ Mayo Radiators perform their functions well under all conditions—and conditions at times are exacting. It is at just such times that Mayo quality asserts itself.

¶ The engineer can eliminate possible radiator troubles from his calculations by the adoption of the best possible radiator. The test of years and use has proved that we make it.

¶ Our capacity limit on new contracts is rapidly being reached.

MAYO RADIATOR COMPANY, New Haven, Conn.

LARGE SALES AND SMALL PROFIT

with thousands of satisfied customers is our best advertisement, and makes it possible for us to import

The Celebrated Brampton Chain

from ENGLAND (paying Freight and Duty) and sell it at **THE SAME PRICE AT WHICH THE OTHER CHAINS ARE SOLD TO AUTOMOBILE MANUFACTURERS, JOBBERS, DEALERS AND OWNERS.**

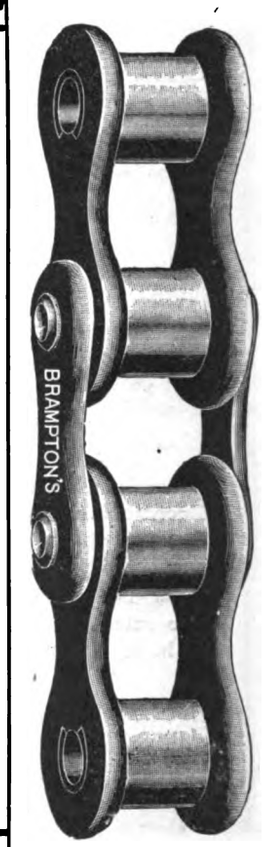
Price Being Equal, Which Would You Prefer? The Best?

Several of the manufacturers now equip their cars with **THE BRAMPTON CHAINS.** Others will do so, if you will order your car that way. No extra cost to you or the manufacturer.

There is an increasing DEMAND for **THE BRAMPTON CHAIN** and it is now being sold by the live jobbers and dealers throughout this country. Agents wanted in unoccupied territory.

PRICE THE SAME—QUALITY. THAT'S DIFFERENT

We are Sole U. S. Agents. Write for proposition. Catalog on request.



CHAS. E. MILLER, MANUFACTURER, JOBBER, EXPORTER AND IMPORTER
Main Office: 97-99-101 Reade Street, New York

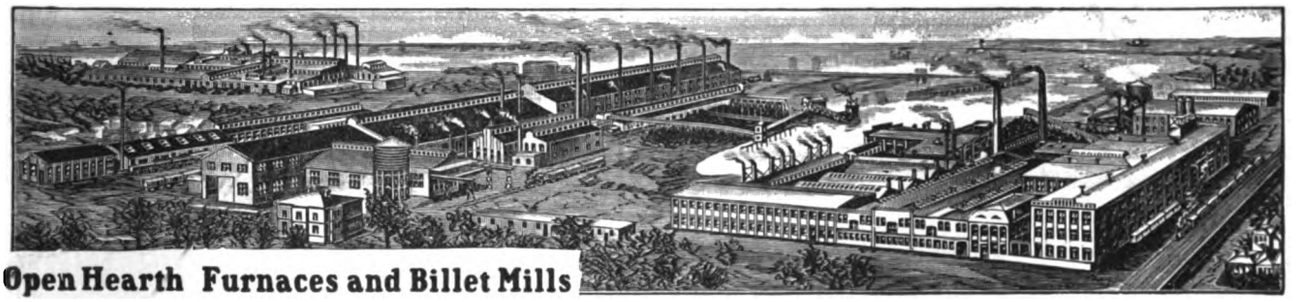
BRANCHES—54th St. and 8th Ave., New York; 202-204 Columbus Ave., Boston, Mass.; 318-320 N. Broad St., Philadelphia, Pa.; 227½-229 Jefferson Ave., Detroit; 1829 Euclid Ave., Cleveland, O.; 1392 Bedford Ave., Brooklyn, N. Y.; 824 Main St., Buffalo.

The Largest Automobile Supply House in America

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The Home of "Swedoh" Spring Steel Rims

Its size is eloquent testimony to the merits of its product.

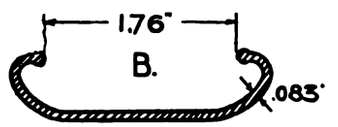


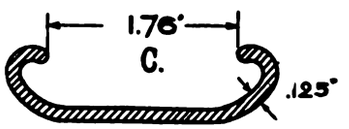
Open Hearth Furnaces and Billet Mills

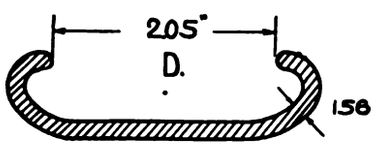
"TRUE AS ('Swedoh') STEEL"

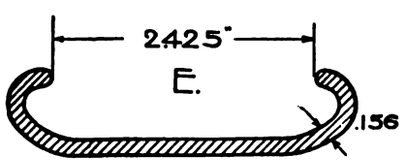
has an added significance when applied to rims, meaning **A TRUE CIRCLE OF STEEL THAT STAYS TRUE.** See that they are on all your automobiles.

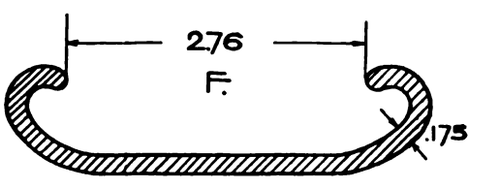
Rims for Wood Wheels











We also manufacture a complete line of **COPPERIZED AUTOMOBILE OILERS**—the kind that last.

AMERIOAN TUBE & STAMPING CO.
N. Y. Office. 100 Broadway — BRIDGEPORT, CONN.

CLINCHER RIM MEASUREMENTS.

Size.	Rim Section.	Inside Diameter of Rims for Wood Wheels.	Diameter of Rims at Tire Seat for Both Wood and Wire Wheels.
26x2½ in.	B.	20.834 in.	21 in.
*28x2¼ " interchangeable	"	21.834 "	*22 " interchangeable
*30x2¼ " "	"	23.834 "	*24 " "
32x2½ "	"	26.834 "	27 "
34x2½ "	"	28.834 "	29 "
36x2½ "	"	30.834 "	31 "
26x3 "	"	19.834 "	20 "
*28x3 " interchangeable	"	21.834 "	*22 " interchangeable
*30x3 " "	"	23.834 "	*24 " "
32x3 "	"	25.834 "	26 "
34x3 "	"	27.834 "	28 "
36x3 "	"	29.834 "	30 "
26x2½ "	C.	20¾ in.	21 "
*28x2¼ " interchangeable	"	21¾ "	*22 " interchangeable
*30x2¼ " "	"	23¾ "	*24 " "
32x2½ "	"	26¾ "	27 "
34x2½ "	"	28¾ "	29 "
36x2½ "	"	30¾ "	31 "
26x3 "	"	19¾ "	20 "
*28x3 " interchangeable	"	21¾ "	*22 " interchangeable
*30x3 " "	"	23¾ "	*24 " "
32x3 "	"	25¾ "	26 "
34x3 "	"	27¾ "	28 "
36x3 "	"	29¾ "	30 "
28x3½ "	D.	20 11-16 in.	21 "
30x3½ "	"	22 11-16 "	23 "
32x3½ "	"	24 11-16 "	25 "
34x3½ "	"	26 11-16 "	27 "
36x3½ "	"	28 11-16 "	29 "
28x4 "	E.	19 11-16 "	20 "
30x4 "	"	21 11-16 "	22 "
32x4 "	"	23 11-16 "	24 "
34x4 "	"	25 11-16 "	26 "
36x4 "	"	27 11-16 "	28 "
28x4½ "	F.	18 21-32 "	19 "
30x4½ "	"	20 21-32 "	21 "
32x4½ "	"	22 21-32 "	23 "
34x4½ "	"	24 21-32 "	25 "
36x4½ "	"	26 21-32 "	27 "
28x120m-m & 5 in.	"	17 21-32 "	18 "
30x120 " & 5 "	"	19 21-32 "	20 "
32x120 " & 5 "	"	21 21-32 "	22 "
34x120 " & 5 "	"	23 21-32 "	24 "
36x120 " & 5 "	"	25 21-32 "	26 "
40x120 " & 5 "	"	29 21-32 "	30 "
		Circumference at Tire Seat.	
750m-mx 85m-m	D.	69 5-16 in.	
800 " x 85 "	"	76 1-32 "	
760 " x 90 "	"	70 3-16 "	
810 " x 90 "	"	76 in.	
870 " x 90 "	"	83½ in.	
910 " x 90 "	"	88½ "	
1010 " x 90 "	"	101⅝ "	
820 " x120 "	F.	70 "	
850 " x120 "	"	74½ "	
920 " x120 "	"	82¾ "	
1020 " x120 "	"	94 15-16 in.	

* Note that the 28x2½ and 30x2¼ tires are made interchangeable with the 28x3 and 30x3 tires. m Millimetres.

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THE SELDEN CAR FOR 1909

Enters upon its second year with a clean record. No "first year" car has ever earned a better reputation or made a better showing.

THE OAR OF MODERATE PRICE

$ 2 0 0 0

Touring Oar **Roadster**
Limousine **Landaulet**

4 cylinder, 28-30 horsepower, shaft drive, selective transmission, metal body, pressed steel frame, excellent hill climber, fine finish and style, roomy tonneau, luxurious upholstery, easy riding, smooth running, economical in up-keep, in fact, a high grade car in every particular.

The "Silent Selden"

1909 MODELS READY IN SEPTEMBER

Agency propositions now ready. Send for catalog and specifications.

Selden Motor Vehicle Co.

ROCHESTER, N. Y.

Member A. L. A. M.

Matheson

1909

Prices Reduced $1,000

And the Reasons Why

Heretofore the Matheson Car has been considered the highest priced as well as the highest grade American car on the market.

Millions of dollars worth of these cars have been delivered to customers who could afford to pay the higher price for the best.

Many other purchasers have been persuaded that some of the lower priced cars have been "just as good." Matheson owners who have used other makes of cars have answered that question satisfactorily. Send for their letters, which we have done up in a book.

In order, therefore, to still maintain the unequalled quality of the Matheson Car and at the same time give customers this magnificent car at the price of the cheaper cars, the makers have figured that by doubling the factory output and selling at a much closer margin of profit, the price of the Matheson Car equipped with Touring, Landaulet or Limousine bodies, could be cut $1,000, and the same chassis, equipped with Roadster or Tourabout bodies, cut $650.

Accordingly, the Company's working capital has been increased by $350,000, and after October 11, 1908, the purchaser can buy a genuine Matheson Car, the very finest of all motor cars of either European or American make, at the makers' former prices to the agent or dealer; namely:

	New Price	Former Price
50 H. P. 1909 Touring Car	$4,500	$5,500
50 H. P. 1909 Roadster	4,350	5,000
50 H. P. 1909 Tourabout	4,350	5,000
50 H. P. 1909 Limousine	5 500	6,500
50 H. P. 1909 Landaulet	5,500	6,500

VICTORIES

The great string of Matheson victories in the important speed, hill climbing and endurance contests of the past seasons, in competition with the greatest cars of Europe and America, can leave no room for doubt that the Matheson car has no peer on any market to-day.

GUARANTY

Every Matheson is guaranteed for 365 days. (Notice that most other cars are guaranteed for 60 to 90 days only.)

MATHESON AUTOMOBILE COMPANY

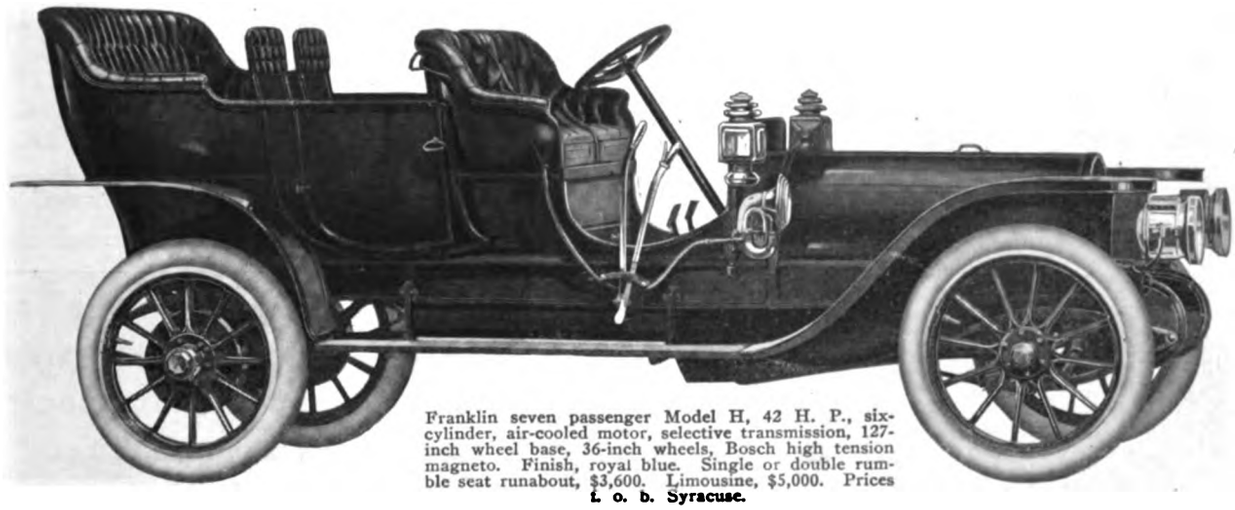
Main Sales Office, 1886-1888 Broadway, New York City

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Franklin Automobiles

Certain manufacturers of water-cooled automobiles are advertising that light-weight is the greatest fallacy of the automobile age. In support of their contention that great weight is necessary in automobile construction, they compare their automobiles with railway locomotives and with Pullman passenger cars. This adds to the gaiety of nations.

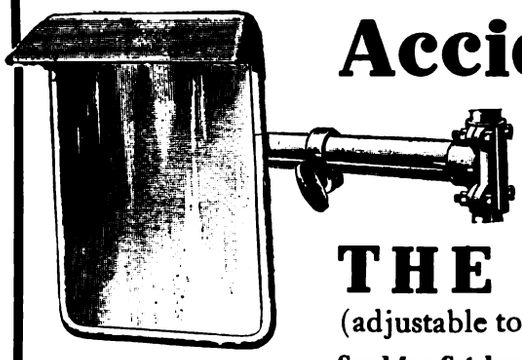
H. H. FRANKLIN MFG. COMPANY
Makers of the light-weight, air-cooled Franklin Automobile.
Syracuse, N. Y.



Franklin seven passenger Model H, 42 H. P., six-cylinder, air-cooled motor, selective transmission, 127-inch wheel base, 36-inch wheels, Bosch high tension magneto. Finish, royal blue. Single or double rumble seat runabout, $3,600. Limousine, $5,000. Prices f. o. b. Syracuse.

The only light-weight large automobile. No other combines such extreme refinement and such flexibility of power with simplicity and great strength.

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Accidents Can Be Avoided

See what's coming from the rear. If you could always do this, there would be few smash-ups. Turning the head is dangerous.

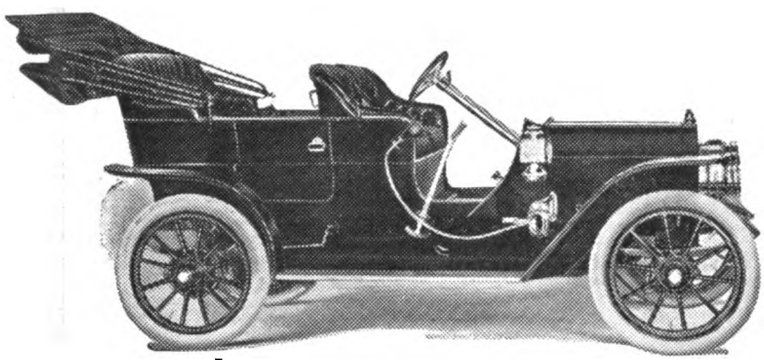
THE ARGUS DASH MIRROR

(adjustable to any position) is made for this purpose and should be on your dash.

Price, $7.50

Send for Catalogue **Motor Car Equipment Co.** 55 Warren St. 1727 Broadway **New York**

OAKLAND



Model B Touring Car, price $1,250.00. Full equipment, including two gas lamps, two side oil lamps, one tail lamp, generators, horn, tools, jack, pump and batteries. Top, $75.00 extra. Runabout, $1,200.

¶ A combination of simplicity and efficiency designed for the man who scrutinizes the car he is to buy, who intends to himself operate it, and to whom economy in up-keep and running expense is essential.

¶ The live agent will find in the Oakland a car that appeals to a large and intelligent class of purchasers and that will justify the fullest confidence.

¶ Correspondence invited.

OAKLAND MOTOR CAR CO., Pontiac, Mich.

J. B. ECCLESTON, Sales Manager, 53 Franklin St., Buffalo, N. Y.

HAYNES

ALWAYS HAS A PERFECT SCORE

HAYNES AUTOMOBILE CO., KOKOMO, IND.

Oldest Automobile Manufacturers in America.
Member A. L. A. M.

New York, 1715 Broadway — Chicago, 1702 Michigan Avenue

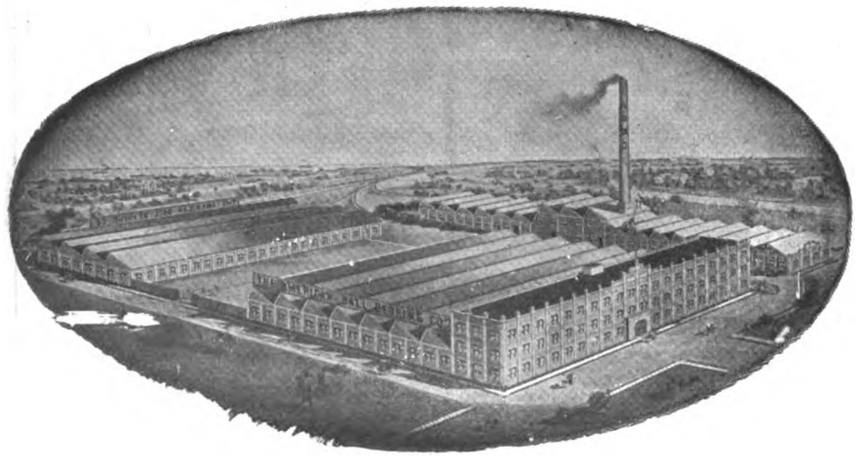
IF YOU ARE INTERESTED IN **MOTORCYCLES**

The Bicycling World and Motorcycle Review

WILL INTEREST YOU

PUBLISHED EVERY SATURDAY AT
154 NASSAU STREET, NEW YORK

$2.00 Per Year — Specimen Copies Gratis



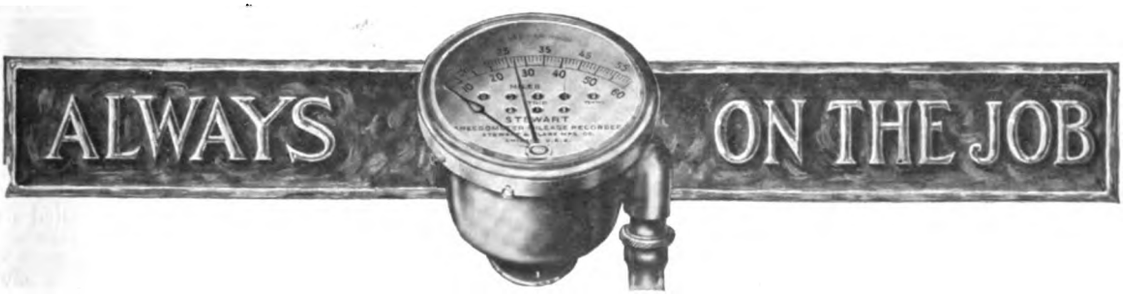
The output of complete Front and Rear Automobile Axles of this plant exceeds the capacity of all competition combined.

THE American Ball-Bearing Co.

L. S. & M. S. Ry. & Edgwater Park

CLEVELAND, OHIO, U.S.A.

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Superior workmanship—costly material—correct construction—combined with the use of the strongest flexible shaft and the famous Stewart Swivel Joint have earned for the Stewart Speedometer, its

Always On The Job Repntation

Just A Few Remarks From Users:

"Have a Stewart—never expect to buy another for THE ONE I HAVE WILL NEVER WEAR OUT."

"Have a Stewart—NO BETTER MADE, running two years without a skip."

"Used the Stewart two seasons — ABSOLUTELY SATISFACTORY."

"Have the Stewart — O. K. — tried another first — N. G."

"Purchased a Stewart in April, now registers 5,000 miles. 'Always on the job.' No trouble."

Our new Model 11 at $25 operates on the multipolar induction principle. This model is by lar the most satisfactory speed indicator ever produced, and is superior to any speedometer in the world—bar none.

Covered by Our Ironclad Five Year Guarantee

SEND FOR CATALOG DESCRIBING IT

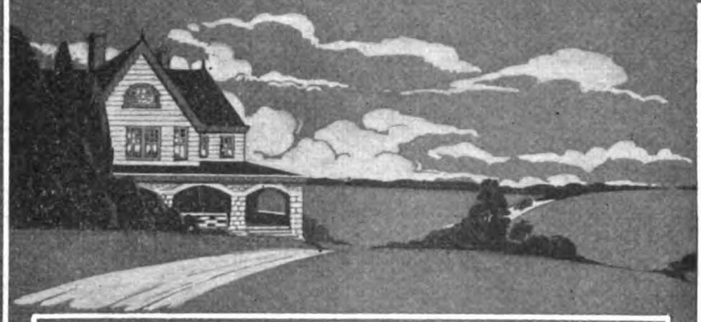
Stewart & Clark Mfg. Co. 509 Diversey Boul., Chicago, U. S. A.

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THE MARMON

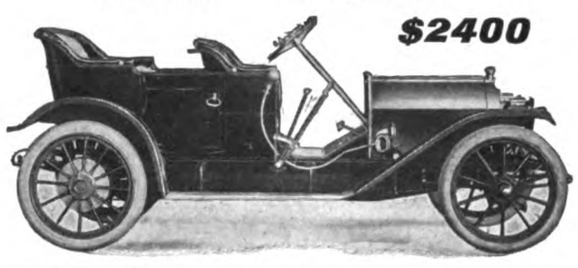
"A Mechanical Masterpiece"





Marmon "Thirty-Two"

$2400



The Most Value Ever Offered In a Motor Car

Before buying any car, take the detailed specifications and compare them—item for item—with the specifications of the Marmon "Thirty-two."

See what you actually get and what you pay extra for. Look at the size of tires and brakes, power, character of ignition, bearings, lubrication, etc.

You'll find that so-called cheap cars are not so cheap, and that no car at $3000 offers so much actual value as this car at $2400. Built as carefully as a fine watch, built to be durable and thoroughly dependable.

Genuine Krupp and Chrome Nickel Steel used in important parts. Bosch magneto and battery—dual system. Hess-Bright bearings. Weight (weigh it), 2,000 lbs. 32-40 H. P. Big Tires (34x4 all around). Fully equipped. Touring Car, Roadster, Four-Passenger Suburban with removable rear seat, or Limousine Town Car.

TO DEALERS: This car is a winner. Your competitors will have to take off their hats to it.

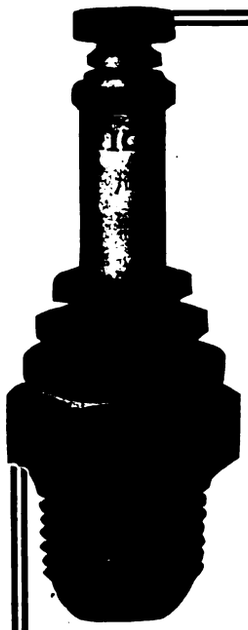
The superb Marmon "Fifty" (with Seven-Passenger or Four-Passenger Body), $3750.

Nordyke & Marmon Co., (Estab. 1851) Indianapolis, Ind.

Standard Mfgrs. A. M. C. M. A.

(We shall exhibit in New York only at Grand Central Palace Show, opening New Year's Eve.)

The Easiest Riding Car In The World



THE WICO

has a micrometer adjustment. That means that you can adjust the spark gap to a known distance—to 1/1000 of an inch. Price, $1.00 each. Actual efficiency beyond price—they are invaluable!

Witherbee for Ignition

Wico Charging Device, Wico Ignition Wire, Wico Spark Plugs, Witherbee Batteries, Wico Inspection Lamp.

WITHERBEE IGNITER COMPANY

Makers of the famous Witherbee Battery. **1876 BROADWAY, NEW YORK.**

CHICAGO—1429 Michigan Ave. DETROIT—220 Jefferson Ave

BUFFALO—43 E. Eagle St.; Main St.

BALTIMORE OFFICE—604 Continental Bldg.

"LONG-ARM" TRANSMISSIONS

THREE speeds and reverse, selective types. The best of material and workmanship. Our experience in gear cutting and manufacturing Automobile Parts enables us to equal the best transmissions built. Let us figure on your requirements.

We also build a complete line of

AXLES, CLUTCHES STEERING REACHES HAND LEVERS, ETC.

The "Long-Arm" System Co.,

CLEVELAND, O.

Sales Dept., THE AMERICAN DISTRIBUTING CO.,

American Trust Bldg., Cleveland, O.

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The Value of the AJAX 5,000 Mile Guarantee

is known and appreciated by every individual **AJAX** user. It also finds substantial recognition at the hands of the automobile manufacturer who knows better than any one how vital the tire problem is to the motorist.

No wonder, then, that careful buyers and conservative manufacturers like the **Maxwell-Briscoe Motor Comapny** give to the **AJAX** the largest tire order ever received by a single tire firm.

Incidentally they give to their customers the benefit of the **AJAX five-thousand mile guarantee,** which insures the user against tire worry and gives him a security that no other tire maker can afford.

MAXWELL-BRISCOE MOTOR CO.

NO. 2146-T

THIS NUMBER MUST APPEAR ON INVOICE

MANUFACTURERS OF "The Maxwell"

TARRYTOWN, N. Y., 9/19, 1908.

Ajax-Grieb Rubber Co.,

87th St. & Broadway, N.Y.C.

PLEASE SHIP US WITHIN ... TO ... VIA

4000 Sets 28" x 3" Ajax Tires Complete.

1500 " 30" x 3" Ajax Tires Complete.

1000 " 30" x 3-1/2" Ajax Tires complete.

750 " 32" x 4" Ajax Tires complete.

Shipment to be made to our several factories, in accordance with instructions to be given later.

MAXWELL-BRISCOE MOTOR CO.,

a. R. Connelly

PURCHASING AGT.

ACCEPTANCE OF THIS ORDER IMPLIES AN OBLIGATION TO FILL OUT AND RETURN FORM BELOW.

The World's Largest Tire Order

Naturally given to the AJAX. Every one of the 29,000 Tires is accompanied by our 5,000-mile Guarantee.

Would you insist upon incurring tire hazard when you can buy **AJAX** tires and **AJAX** tire insurance at the same price at which users of other tires buy tires alone, without any guarantee?

Think this over and write for a copy of our 5,000-Mile Guarantee, also for **"AJAX,"** a magazine published in the interest of makers, sellers and users of rubber tires and kindred products of the rubber industry

Ajax-Grieb Rubber Co.

Factories: Trenton, New Jersey.

Branches

NEW YORK CITY—N. E. Cor. 57th Street and Broadway.
BOSTON—819a Boylston Street.
KANSAS CITY, MO.—1422 Grand Avenue.
DENVER, COLO.—1529 Cleveland Place.
SEATTLE—1102 Broadway.
SAN FRANCISCO—438 Market Street.
LOS ANGELES—1038 South Main Street.
PHILADELPHIA—316 North Broad Street.
DETROIT—743 Woodward Avenue.
CHICAGO—1418 Michigan Avenue.

AUTOMOBILE FACTS

Will You Buy Dreams or Experience?

The car proved best in every test of moderate-priced automobiles— **THE MAXWELL**

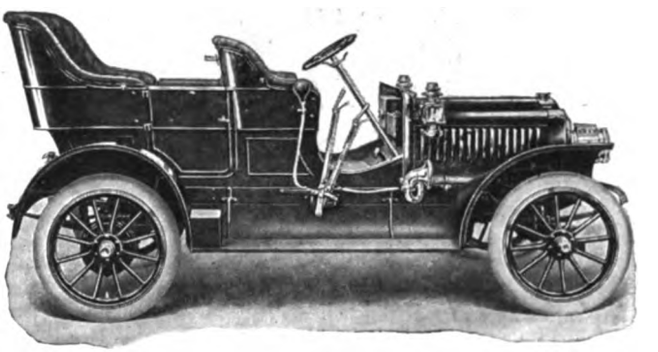
The automobile universally recognized the reliable, durable, aristocratic, moderate-priced car, pre-eminent **THE MAXWELL**

The best equipped, the most extensive automobile manufacturing facilities now existing, are comprised in the three splendid factories, at New Castle, Tarrytown, Pawtucket, with floor area of over twelve acres with over $400,000 worth of equipment, with a capacity of 12,000 automobiles per annum—all founded on our confidence in the superiority of **THE MAXWELL**

Our output for the season of 1907-08 was over five million dollars—all represented by **THE MAXWELL**

In 1908-09 will be over eight million dollars worth of **THE MAXWELL**

We are proud of our success, and among the popular-priced cars, high and above all stands **THE MAXWELL**



THE FIVE-BEARINGS-MOTOR CAR
Maxwell Model DA, 4-Cylinder, 24-28 H. P., $1750

THE MAXWELL-BRISCOE MOTOR CO. never experimented on the public. Mr. Maxwell, instead of copying and skimping in his designs and producing a hodge-podge automobile, has created a true American car, for American roads and American touring conditions, with every possible regard to the demands of the average American motorist.

THE MAXWELL is the first and foremost utility car of America.

MAXWELL cars bought three, four or five years ago and in constant use since, are better cars to-day than the cheap freaks of even a year ago. Where are the two-year-old cars of some makes?

MAXWELL two-cylinder cars are the standard two-cylinder car of the world.

MAXWELL four-cylinder cars, the high-grade, moderate-priced car, has five main crank shaft bearings.

MAXWELL bodies are made of steel.

MAXWELL cars cost more to make this way, but they are five times as durable.

MAXWELL cars are of unit construction that no stress can unline.

The Maxwell-Briscoe Motor Company has found that it paid to have ideals, not to try to see how cheap it could make automobiles, but to make good automobiles, and sell them at a low price commensurate with small profits and a large output.

Advance literature now ready for distribution, showing complete 1909 line

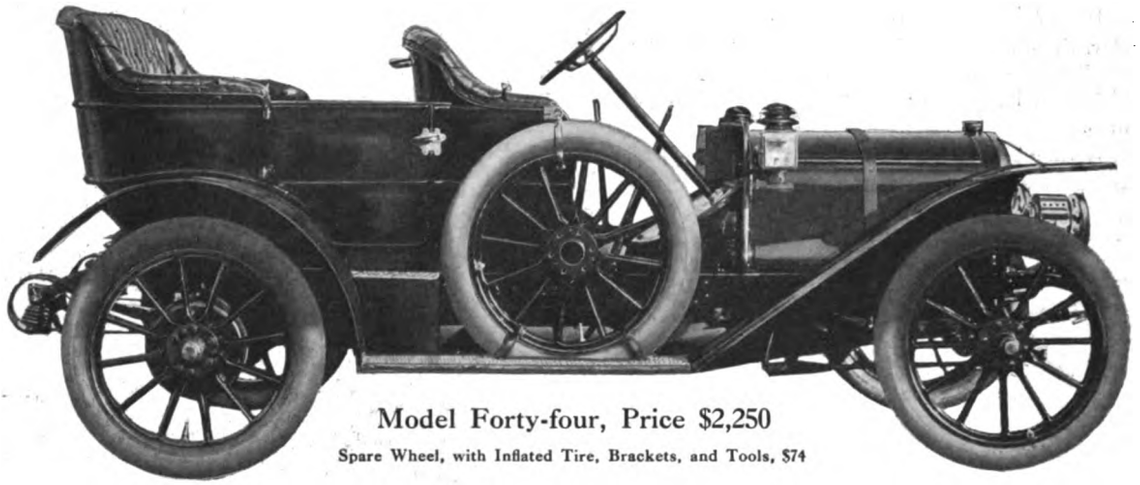
MAXWELL-BRISCOE MOTOR CO.

P. O. Box 106, Tarrytown, N. Y.

FACTORIES: NEWCASTLE TARRYTOWN PAWTUCKET

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Rambler 1909

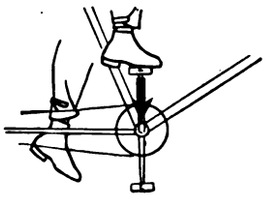


Model Forty-four, Price $2,250

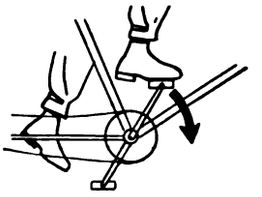
Spare Wheel, with Inflated Tire, Brackets, and Tools, $74

THE OFFSET CRANK-SHAFT

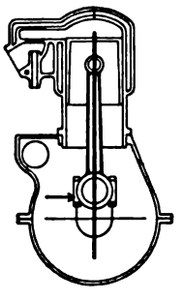
MOST automobiles develop sufficient power when they are traveling at a high speed. The greatest need is for power at slow engine speeds. Rambler Model Forty-four can be operated smoothly and steadily at three miles an hour on high gear. This is because of the offset crank-shaft.



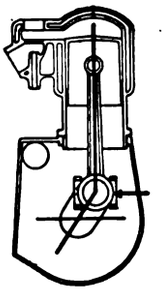
Equivalent to position in ordinary engine of piston at explosion center. Illustrates energy wasted to overcome dead center.



Equivalent to position in Rambler engine of piston at explosion center. No energy wasted. Full power of explosion exerts turning effort to crank-shaft.



Ordinary engine Crank-shaft in line with connecting-rod, creating a dead center.



Rambler offset crank-shaft. Dead center eliminated.

How the Offset Crank-Shaft is an Advantage

Write for special information regarding the Rambler Spare Wheel, the offset crank-shaft, and other special Rambler features

THE CAR OF STEADY SERVICE

Thomas B. Jeffery & Company. Main Office and Factory: Kenosha, Wis.

Branches and Distributing Agencies: Chicago, Milwaukee, Boston, New York, San Francisco

Representatives in all Leading Cities

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, November 12, 1908. No. 7

RE-ELECT A. L. A. M. OFFICERS

Northern License and Membership Transferred to E-M-F.—Record Attendance at Annual Meeting.

For the third time Charles Clifton has been chosen president of the Association of Licensed Automobile Manufacturers, together with Thomas Henderson as vice-president, and L. H. Kittredge, secretary. Colonel George Pope, who last summer succeeded H. H. Franklin as treasurer, was likewise re-elected to office, at the annual meeting held Wednesday, 11th inst., at the association's offices in New York City. One change was made in the executive committee, William E. Metzger being succeeded by G. H. Stilwell, the remainder of the committee being Charles Clifton, S. T. Davis, Jr., Thomas Henderson, and Herbert Lloyd.

Transfer of the Selden license and association membership of the Northern Motor Car Co., to the Everitt-Metzger-Flanders Co., of Detroit, Mich., which latter company has absorbed the Northern's business and property, was effected, thus dispelling such trade doubts and misunderstandings as may have existed concerning the E-M-F. company's relations with the association.

At the session, which was the most largely attended A. L. A. M. meeting ever held, numerous general and special reports were read and approved, and the show committee reported everything well advanced for the forthcoming Licensed show. During the day this committee gave a hearing to the motorcycle manufacturers' requests for more space. As an earnest of the association's interest in the good roads movement, S. D. Waldon was appointed the A. L. A. M. representative on the Good Roads Central Committee.

Those attending the meeting included: Elmer Apperson, Apperson Bros Automobile Co.; J. S. Clarke, Autocar Co.; W. C. Durant, A. H. Goss and C. R. Hatheway. Buick Motor Co.; W. C. Leland, Cadillac Motor Car Co.; Hugh Chalmers and R. D. Chapin, Chalmers-Detroit Motor Co.; M. S. Hart, Corbin Motor Vehicle Corp.; William E. Metzger, Everitt-Metzger-Flanders Co.; H. W. Nuckols and Herbert Lloyd, Electric Vehicle Co.; J. H. Becker, Elmore Mfg. Co.; H. H. Franklin and G. H. Stilwell, H. H. Franklin Mfg. Co.; E. W. Headington, Haynes Automobile Co.; E. R. Hewitt, Hewitt Motor Co.; A. N. Mayo, Knox Automobile Co.; S. T. Davis, Jr., Locomobile Co. of America; Samuel Regar, Lozier Motor Co.; C. W. Matheson, Matheson Motor Car Co.; H. B. Joy and M. J. Budlong, Packard Motor Car Co.; L. H. Kittredge, Peerless Motor Car Co.; Charles Clifton, George N. Pierce Co.; Col. George Pope, Pope Mfg. Co.; A. L. Pope, Pope Motor Car Co.; G. E. Mitchell, Alden Sampson Mfg. Co.; F. B. Stearns, F. B. Stearns Co.; A. H. Ackerman, Studebaker Automobile Co.; E. R. Thomas, E. R. Thomas Motor Co.; E. S. Church, Waltham Mfg. Co., and Thos. Henderson, Winton Motor Carriage Co.

The presence of W. C. Durant with two of his associates in the Buick company, despite the fact that the company is now being sued by the Electric Vehicle Co. for Selden royalties alleged to be due for the past year, was a matter of comment. The relations between the company and the association are described as being in "statu quo" for the present.

Pratt Joins the Pierce Forces.

J. Elmer Pratt, formerly associated with the Cadillac company and later with the Buick, has joined the organization of the George N. Pierce Co., of Buffalo, N. Y. His work will be in the sale and allotment of cars, a field in which he has had great experience.

Morse Resigns from Thomas.

E. C. Morse has resigned as commercial manager for the E. R. Thomas Motor Co., of Buffalo, N. Y. His resignation takes effect on the first of the year.

HOUPT TO HANDLE HERRESHOFF

Light Car at Popular Price is Promised—New York Thomas Agent to Undertake Its Sale.

The new Herreshoff car, made by the Herreshoff Automobile Co., of Detroit, Mich., is to come to New York under very favorable auspices, contracts having been signed with Harry S. Houpt under which the latter will handle it. Houpt is well known as the head of the H. S. Houpt Co., which has the Metropolitan agency for the E. R. Thomas Motor Co., while the Herreshoff company was organized last summer, to manufacture cars designed by Charles F. Herreshoff, formerly associated with the American & British Mfg. Co., of Bridgeport, Conn.

The forthcoming model is planned to be of the popular $1,500 order, having shaft drive, transmission mounted on the rear axle, and other features more or less common to this type. Houpt is said to have made tentative arrangements also with F. E. Moskovics, of the Bristol Engineering Co., for a large car to be made by the latter concern at its plant in Bristol, Conn., in accordance with designs to Houpt's special order.

Upon being asked for a confirmation of the details of his arrangement with the Herreshoff company, Houpt declined to commit himself. He indicated that he preferred to say nothing for the present.

"Do you deny the correctness of the news?" he was asked.

"Well," he replied, "I do not affirm it."

Castle Acquires an Atwood Interest.

F. E. Castle, formerly with Gray & Davis, of Amesbury, Mass., has again gone into the lamp business by acquiring an interest in the Atwood Mfg. Co., of Amesbury. As a result of the arrangement the name of the company will be changed to the Atwood-Castle Co., for the future.

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In the Retail World.

Thomas Fassitt is building a garage and salesroom in Easton, Pa. He and his son will be the proprietors.

The Ohio Electric Car Co., of Columbus, O., has changed its name. It is now the Detroit Electric Car Co.

George P. Peterson has arranged to open a Buick agency in Joliet, Ill. It will be located at Clinton and Scott streets.

Milton Updyke's garage, on the Merrick road, near Seaford, L. I., was destroyed by fire on the 2d inst. His loss is about $5,000.

The Maple Place Garage Co., of Jamaica Plain, Mass., has opened an establishment in the rear of No. 4 Maple place. Bert Ross is in charge.

The Lone Star Auto Co.'s garage in Midland, Tex., has been totally destroyed by fire. The loss is estimated at $20,000, with no insurance.

J. W. Maguire, one of Boston's pioneer dealers, has taken enlarged quarters for the sale of Pierce cars. He is now located at 743-745 Boylston street.

Charles S. Howard will shortly open on establishment in Los Angeles, Cal., for the sale of Buick cars. His company has the State agency for the line.

Lee Richardson, a veteran automobile man of Redlands, Cal., is planning to open a store in Los Angeles. He will divide his time between the two places.

Daniel G. Meyer, formerly of Milwaukee, is opening a salesroom and garage at Green Bay, Wis., at Washington and Stuart streets. He will handle the Reo.

The Dietrich Motor Car Co., Franklin dealers in Allentown, Pa., are building a large fire-proof garage. The building will have a street front on three sides.

L. G. Martin, of Pittsburg, Pa., is adding a large fire-proof building to his present establishment at 3923 Forbes street. It will be equipped for garage service.

C. G. Layton, of Danville, Ill., has purchased property at 124-126 North Jackson street for his new salesroom and garage. The latter will have capacity for 100 cars.

Savannah, Ga., has been selected as a distributing center by the Studebaker Automobile Co., of South Bend, Ind. The Southern trade will be in charge of L. E. Ogden.

Following the opening of a New York branch, Gray & Davis, of Amesbury, Mass., have opened a Boston office for the sale of their lamps. It is located at 794 Boylston street.

Chicago headquarters for the Moline Automobile Co., of Moline, Ill., have been moved from Automobile Row. The new location is at 1220 Michigan avenue, where W. J. Boone is in charge.

Harry P. Branstetter, of 1337 Michigan avenue, Chicago, Ill., is to have charge of the Middle West distribution of Kisselkars for 1909. He has changed the name of his establishment from the Branstetter Motor Co. to the Kissel Motor Car Co.

The Weldon & Bauer Co., of Newark, N. J., has filed articles of incorporation, to do an automobile and garage business. The concern wil continue, as formerly, at 200-202 Halsey street.

W. H. Chase, plumber and automobile repairer, is fitting up a garage in Union Square, at Dover-Foxcroft, Me—the first in the twin towns. A complete repair shop will be a feature.

R. C. Hamlin, of Los Angeles, Cal., has under construction a large T-shaped garage on Olive street, a feature of which will be the entire freedom from supporting posts on the floor. The salesroom for the display of Franklin cars will have an area of 2,500 feet.

The American Locomotive Co., of Providence, R. I., has appointed Benjamin C. Day as manager of its Chicago branch, which will be located on Michigan avenue at Twelfth street, in the corner of the old Zion temple. In order to take the new position, Day resigned as Chicago manager for the Winton Motor Carriage, in which capacity he has been succeeded by J. F. Davis.

Show Luncheon and Headquarters.

The show luncheon of the American Motor Car Manufacturers' Association will take place at 1 o'clock, Tuesday, January 5, at the Hotel Manhattan. The hotel will be the Association headquarters during show week.

Burg Buggy Takes up Motor Cars.

The Burg Buggy Co., of Dallas City, Ill., has decided to make motor vehicles. Following the production of several experimental models the manufacture of quantities will be commenced very soon.

Organize to Make Automobiles.

The De Witt Motor Vehicle Co. has been formed to manufacture automobiles at North Manchester, Ind. The principal stockholders include Virgil De Witt, Mary J. De Witt and James S. Rose.

Hildebrand Visiting the West.

C. C. Hildebrand, general sales manager of the Stevens-Duryea Automobile Co., of Chicopee Falls, Mass., is visiting the western agents of the company. His trip will extend to the Pacific Coast.

Dale's Successor is Chosen.

To succeed the late Charles H. Dale as president of the Rubber Goods Mfg. Co., the choice has fallen on John J. Watson. He is also treasurer of the United States Rubber Co.

Havener with the Hartford Rubber.

L. C. Havener has become a New England representative for the Hartford Rubber Works Co., of Hartford, Conn. He will make his headquarters in Boston.

The Week's Incorporations.

White River Junction, Vt.—Miller Automobile Co., The, under Vermont laws. Capital, $5,000.

Indianapolis, Ind.—Marion Automobile and Manufacturing Co., under Indiana laws, with $10,000 capital. Corporators—Charles Rennaker, Frank Boyer and Clifford G. Rust.

Atlanta, Ga.—Fulton Motor Car Co., The, under Georgia laws, with $3,000 capital; automobile agency business. Corporators—Dr. R. F. Ingram, Paul McMichael and J. E. Levi.

Hartford, Conn.—Richardson Engineering Co., The, under Connecticut laws, with $10,000 capital. Corporators—D. A. Richardson, Victor F. Morgan, and P. L. Hewman.

Lynbrook, L. I.—Walton Motor Co., under New York laws, increase of capital from $10,000 to $20,000. Attorney—George F. Hickey, 78 Wall street, New York City.

Cleveland, O.—Zenith Motor Goods Co., The, under Ohio laws, with $25,000 capital. Corporators—J. J. Downey, L. B. Le Bel, K. C. Stewart, P. A. Iddings and A. S. Shearer.

Elyria, O.—Airless Puncture-Proof Tire Co., The, under Ohio laws, with $10,000 capital. Corporators—George E. King, B. Lighthall, W. J. Engel, S. C. Henderson and W. C. Marple.

Long Beach, N. Y.—Long Beach Garage Co., under New York laws, with $50,000 capital. Corporators—Dix W. Noel, William B. Davis and John Gerdes, No. 1 Broadway, New York City.

Plattsburg, N. Y.—Lozier Manufacturing Co., under New York laws, with $60,000 capital; to manufacture motors, etc. Corporators—John M. Weaver, George F. Tuttle and Samuel L. Wheeler, of Plattsburg.

Burlington, Vt.—Vermont Motor Co., under Vermont laws, with $5,000 capital; dealing and repairing. Corporators—F. A. Rich, Henry H. Hagar, Russell W. Taft, F. W. Chamberlain and Guy E. London.

Bucyrus, O.—Bucyrus Transportation Co., The, under Ohio laws, with $5,000 capital; to operate a motor transportation line. Corporators—C. R. Rowe, J. K. Myers, Jacob Bach, Charles Quantaine and F. A. Walther.

Codd is Fishing for a Site.

George P. Codd, a former mayor of Detroit, Mich., and at one time an official of the Northern Automobile Co., has been in Cincinnati, ostensibly seeking a site for an automobile factory. He indicated that a $250,000 company is being planned, to make light cars.

Cleveland Selects Its Show Date.

Cleveland's automobile show has been set for the week of February 15. It will be held in the Central Armory, under the management of a dealers' committee.

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TO BE CHICAGO'S BIGGEST SHOW

Number of Pleasure Car Exhibitors Exceeds that of Last Year—List of Main Floor Spaces.

Spaces at the Chicago automobile show, which is to be held February 6 to 13, have all been taken, and the list of pleasure car exhibitors exceeds that of any of the previous years. Practically all of the prominent makers are included, together with a number of manufacturers who have never exhibited before. While last year the total number of exhibitors staging pleasure cars reached 90, the coming show will have 92, and there are quite a few on the waiting list, for whom provision will be made if possible. There will be at least 12 automobile exhibits in the basement of the Coliseum Annex, supplementing those already listed for the regular spaces.

The accessory makers are to occupy the galleries of the Coliseum and the Armory, the second floor of the Coliseum Annex, and a part of the basement. In this class there is a greater allotment than ever before. The motorcycle section is also to be an important feature of the show and will include 21 exhibitors, as against 11 in this class last year. The list of exhibitors of pleasure cars and motorcycles is as follows:

Coliseum—Main Floor.

Winton Motor Carriage Co., Cleveland, Ohio.
Pope Mfg. Co., Hartford, Conn.
E. R. Thomas Motor Co., Buffalo, N. Y.
Stevens-Duryea Co., Chicopee Falls, Mass.
Peerless Motor Car Co., Cleveland, Ohio.
Elmore Mfg. Co., Clyde, Ohio.
Woods Motor Vehicle Co., Chicago, Ill.
Thomas B. Jeffery & Co., Kenosha, Wis.
Babcock Electric Carriage Co., Buffalo, N. Y.
Baker Motor Vehicle Co., Cleveland, Ohio.
F. B. Stearns Co., Cleveland, Ohio.
Reo Motor Car Co., Lansing, Mich.
Packard Motor Car Co., Detroit, Mich.
Everitt-Metzger-Flanders Co., Detroit, Mich.
Premier Motor Mfg. Co., Indianapolis, Ind.
Studebaker Automobile Co., South Bend, Ind.
National Motor Vehicle Co., Indianapolis, Ind.
Haynes Automobile Co., Kokomo, Ind.
The White Company, Cleveland, Ohio
Dayton Motor Car Co., Dayton, Ohio.
Cadillac Motor Car Co., Detroit, Mich.
Maxwell-Briscoe Motor Co., Tarrytown, N. Y.
Locomobile Co. of America, Bridgeport, Conn.
H. H. Franklin Mfg. Co., Syracuse, N. Y.
Apperson Bros. Automobile Co., Kokomo, Ind.
Buick Motor Co., Flint, Mich.
Holsman Automobile Co., Chicago, Ill.
Pope Motor Car Co., Toledo, Ohio.
American Locomotive Co., New York.
George N. Pierce Co., Buffalo, N. Y.
Olds Motor Works, Lansing, Mich.
Corbin Motor Vehicle Corp., New Britain, Conn.
Matheson Motor Car Co., Wilkes-Barre, Pa.
Lozier Motor Co., New York.
Bartholomew Co., Peoria, Ill.
Chalmers-Detroit Motor Co., Detroit, Mich.
De Luxe Motor Car Co., Detroit, Mich.
Mitchell Motor Car Co., Racine, Wis.
Ricketts Auto Works, South Bend, Ind.

Coliseum Annex—First Floor.

Simplex Motor Car Co., Mishawaka, Ind.
York Motor Car Co., York, Pa.
Austin Automobile Co., Grand Rapids, Mich.
Oakland Motor Car Co., Pontiac, Mich.
Pennsylvania Auto-Motor Co., Bryn Mawr, Pa.
Midland Motor Co., Moline, Ill.
Welch Motor Car Co., Pontiac, Mich.

First Regiment Armory.

Kissel Motor Car Co., Hartford, Wis.
Speedwell Motor Car Co., Dayton, Ohio.
Buckeye Mfg. Co., Anderson, Ind.
Jackson Automobile Co., Jackson, Mich.
Columbus Buggy Co., Columbus, Ohio.
Moon Motor Car Co., St. Louis, Mo.
Atlas Motor Car Co., Springfield, Mass.
Dorris Motor Car Co., St. Louis, Mo.
Overland Auto Co., Indianapolis, Ind.
Cartercar Co., Detroit, Mich.
Waverley Co., Indianapolis, Ind.
W. H. Kiblinger Co., Auburn, Ind.
Mora Motor Car Co., Newark, N. Y.
Nordyke & Marmon Co., Indianapolis, Ind.
Moline Automobile Co., E. Moline, Ill.
Auburn Automobile Co., Auburn, Ind.
Anderson Carriage Mfg. Co., Anderson, Ind.
Chicago Coach & Carriage Co., Chicago, Ill.
Rapid Motor Vehicle Co., Pontiac, Mich.
Black Mfg. Co., Chicago, Ill.
Meteor Motor Car Co., Bettendorf, Iowa.
Streator Motor Car Co., Streator, Ill.
Stayer Carriage Co., Chicago, Ill.
Anderson Carriage Co., Detroit, Mich.
Model Automobile Co., Peru, Ind.
J. V. Lindsley & Co., Dowagiac, Mich.
Fort Pitt Motor Mfg. Co., New Kensington, Pa.
Wayne Works, Richmond, Ind.
Gaeth Automobile Co., Cleveland, Ohio.
Berliet Import Co., Chicago, Ill.
Rauch & Lang Carriage Co., Cleveland, Ohio.
C. P. Kimball & Co., Chicago, Ill.

MOTORCYCLE SECTION.

Coliseum Annex—Second Floor.

Minneapolis Motorcycle Co., Minneapolis, Minn.
The Pierce Cycle Co., Buffalo, N. Y.
Merkel-Light Motor Co., Pottstown, Pa.
Reading Standard Co., Reading, Pa.
New Era Gas Engine Co., Dayton, Ohio.
Bicycling World, New York.
Magnet Motor Co., Chicago, Ill.
Motorcycle Illustrated, New York.
Hendee Mfg. Co., Springfield, Mass.
Harley-Davidson Motor Co., Chicago, Ill.
Excelsior Motor Mfg. Co., Chicago, Ill.
Wagner Motorcycle Co., St. Paul, Minn.
Consolidated Mfg. Co., Toledo, Ohio.
Ovington Motor Co., New York.
Aurora Automatic Machinery Co., Aurora, Ill.
Thiem Mfg. Co., Minneapolis, Minn.
Auto-Bi Co., Buffalo, N. Y.
American Motor Co., Brockton, Mass.
N. S. U. Motor Co., New York.
The Hornecker Motor Mfg. Co., Geneseo, Ill.
Armac Motor Co., Chicago, Ill.

Bendix to Build in Logansport.

After strenuous efforts to absorb $75,000 worth of the stock of the Bendix Automobile Co., the citizens of Logansport, Ind., are in joyful celebration of the fact that the Bendix factory is to be "in their midst." All but $3,500 of the $75,000 stock subscription demanded has been taken, and the Logansport Land and Investment Co., the local association of business men which seeks to draw manufacturers to the town, has secured a factory site for the company. The latter has generously indicated its willingness to "take a chance" on the small balance of the stock subscription being taken up in the near future, and will hereafter date its letters from its new address.

Truck Builders Seek Norwalk Capital.

The Commercial Truck Co., of Plymouth, O., has made a proposition to the Chamber of Commerce of Norwalk, O., which the latter body is seriously considering. If Norwalk will subscribe for $75,000 worth of the company's stock, the concern will move and build a big factory in the city. W. C. Gilder, general manager of the company, appeared before the chamber, together with A. M. Trego, and asa result of their statements a committee has been appointed to investigate the condition and prospects of the business.

Marseilles May Produce Motor Buggies.

Charles Keagle, of Kankakee, has been raising the hopes of the residents of Marseilles, Ill., by looking for a site for an automobile factory. Keagle is connected with the Waldron Car Mfg. Co., near Kankakee.

OPPOSES POPE RE-ORGANIZATION

Hearing Develops Objection from a Stockholder—Both the Hagerstown and Elyria Plants are Sold.

Opposition to the proposed reorganization of the Pope Mfg. Co., of Hartford, Conn., has arisen, objection to the terms offered by the reorganization committee having been made by Thomas H. O'Connor, of Jersey City, a stockholder, at a hearing on Tuesday, 10th inst., before Vice-Chancellor Howell, in Newark, N. J. The committee offers $1,500,000 for the assets of the company, exclusive of $800,000 cash in the hands of the receivers on August 1, the transfer to be post-dated to that time. In his objection, O'Connor wants the court to make certain that the committee's offer is the best that can be obtained. Following the hearing, the vice-chancellor announced a reservation of his decision until Thursday, 12th inst., but later set a date for a further hearing, which will be held on Monday, 16th inst., at which time the receivers and others will be examined under oath.

The sale of the plants at Hagerstown, Md., and Elyria, O., has been approved. For the Hagerstown factory the Pope company receives $57,500, while the Garford saddle factory at Elyria brings $35,000 to the Federal Mfg. Co., which the Pope company owns. Immediately the reorganization plan is consummated, the creditors will be paid their fourth and final dividend of 25 per cent. on approved claims, but should any material delay arise, which is at present unlikely, application will be made for the payment of the dividend without waiting for the completion of the deal.

Apperson Business is Incorporated.

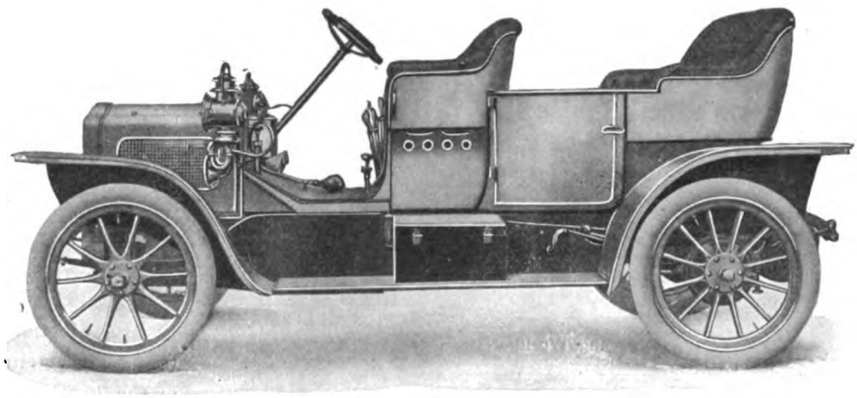
The Apperson Bros. Automobile Co., of Kokomo, Ind., which has in the past been conducted by Elmer Apperson, has incorporated under Indiana laws, with $400,000 capital. It will retain its old name. Under the reorganization the following officers have been appointed: Elmer Apperson, president and general manager; Edgar L. Apperson, vice-president; and Alton G. Seiberling, secretary and treasurer. George H. Strout will continue as sales manager.

Still More Space for Firestone.

Not content with the expansion that will be provided by the new buildings and additions already under construction, the Firestone Tire and Rubber Co., of Akron, O., has made a further purchase, by which it takes over the plant of the Gloge Foundry & Machine Co., adjoining the present rubber factory. The property embraces several buildings and five large lots, which will be the site of another big structure in the spring.

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A WHITE STEAMER FOR $2000!



Not since 1904 have we made a car priced at so low a figure as $2,000. The White—"the car in a class by itself"—has thus been brought within the range of a larger number of purchasers than has been the case in recent years.

The new $2,000 White car, known as our Model "O," has none of the attributes of the "cheap machine." It is simply a "smaller edition" of our $4,000 car. The new model "O" is rated at 20 steam horsepower, which means that it can do the work of gasoline cars rated at much higher figures. The wheel-base is 104 inches; the tires, both front and rear, are 32x3½ inches. The car is regularly fitted with a straight-line five-passenger body. The frame is of heat-treated pressed steel. The front axle is a one-piece forging of I-beam cross section.

The nature of the steam engine is such that the engine of small power has all the desirable attributes of the engine of high power. In other words, as the weights of our small car and of our large car are proportionate to the power of their respective engines, the small car can do anything that our large car can do

To summarize the features of our new Model "O" car—it is noiseless, odorless, smokeless and absolutely free from vibration. All speeds from zero to maximum are obtained by throttle control alone. The speed of the car responds instantly to the throttle; the engine can never be stalled. The directions for driving are summed up in the phrase, "Just open the throttle and steer." It starts from the seat—"no cranking." It is the ideal moderate priced machine. It is the best for the man who wishes to drive and take care of his own car. It is a result of our nine years of experience in building the White Steam Car—the only machine which finds a ready market in every portion of the globe.

Write for circular giving full details of this car.

THE WHITE COMPANY

CLEVELAND, OHIO

NEW YORK CITY, Broadway at 62d St.
BOSTON, 320 Newbury St.
PHILADELPHIA, 629-33 N. Broad St.

PITTSBURG, 138-48 Beatty St.
CLEVELAND, 407 Rockwell Ave.
CHICAGO, 240 Michigan Ave.

SAN FRANCISCO, Market St. at Van Ness Ave.
ATLANTA, 120-122 Marietta St.

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Marketing the Multiple Product.

Much has been said of the advantages of manufacturing cars in big lots and of the benefits derivable from multiple production both in economy of construction and profit in marketing. But up to this time little or no discussion has arisen as to the relative advantages to the dealer of handling the larger cars, and those of medium and low prices which are built in great quantities. Superficially it would seem to be a question of a large pro rata profit on a small number of sales, or vise versa. Actually it appears that a number of other factors are involved which serve to render the question more complex.

Thus the small or medium car selling at a corresponding price, usually is sold fully equipped, or if with partial equipment offers only a limited market for accessories. Furthermore repairs are largely accomplished by replacing broken or defective parts which are strictly interchangeable so that the amount of labor involved in keeping cars of this class in order is considerably less than is necessary to the maintenance of the more luxurious types. Another point to be considered is that as the agent for the multiple product must handle a greater number of machines in his repair department than the agent for the more costly product, his facilities must be more ample. Again, the fact that the larger machine is usually cared for by a paid chauffeur while the less pretentious affair is more frequently attended to by its owner, also is noteworthy, as in the latter case not simply are the principles of economy apt to be more rigidly adhered to, but a greater share of the repair work is likely to fall on the shoulders of the dealer.

In a word, the profitable handling of the medium and low priced proposition depends upon principles similar to those which govern the production of machines of this type. It is not simply a matter of handling a large volume of business at relatively low profits on the individual machine, but also of handling all the details in such a systematic and expedient fashion that sources of waste shall be reduced to their lowest terms, costs cut to a minimum and the necessary fixed expenses distributed over the widest possible area.

On this account the dealer who has been accustomed to handling large, expensive cars and of catering to an exclusive trade, will find on turning to the "popular" type that a thorough reorganization of his methods must take place before he is enabled to realize the returns apparently promised by a given turnover. For such as are adapted to the administration of close and exacting systems, this transformation will be readily accomplished. To those who are not so constituted, the promised harvest will prove more difficult to garner.

Inferior Brakes on Used Cars.

Ample consideration is being paid by designers and manufacturers to the important question of fortifying the braking system against all possible weaknesses, and with effects which are certain to result beneficially to the industry as well as to the user. At the same time it has been overlooked in the flood of suggestion and advice which has poured in upon makers and dealers, that in the cars of older make a considerable source of peril exists because of their inadequate braking equipments, as well as from the fact that in many cases the owner or operator through long familiarity with the machine has become careless of its condition and has permitted the brakes to get out of adjustment to such an extent that they are little better than useless.

Indeed, from the standpoint of the man in the street, it is more important that the present owner be taught the proper care and handling of his brakes than that the manufacturer be advised to better the equipment of his newest product. The latter, with his own interest in view, and keenly alive to the requirements of the case may be depended upon from this time forward to take care of that phase of the situation. Users of old cars, on the other hand, outnumber those who drive new machines by perhaps four to one—the exact ratio does not matter—and though the proportion of those machines which are really dangerous in this respect is constantly decreasing, it yet constitutes a real menace to public safety.

Within the past few weeks a number of accidents attributable directly to improper braking have served to point the truth that the automobile owner must be made to learn the importance of keeping his brakes in as good relative order as his motor. Worn contact surfaces, faulty adjustments, worn connections, which are liable to give way at a critical moment, and most important of all, brakes which are not strong enough for their work; are points about which too many drivers require instruction. Their neglect means that every car answering to any such shortcoming is a potential source of accident, particularly in city use where it is quite as much a source of danger to the outside public as to the occupants of its seats.

Automobile clubs, dealers' organizations, groups of influential motorists from time to time have taken a hand in the suppression of current abuses of privilege which have tended to undermine the repute of the automobile. Here is an opportunity for a movement along similar lines, looking toward the safeguarding of their interests to a degree quite as important as those for the suppression of noise, glaring lights, reckless speeding. Incidentally it affects some of the oldest and staunchest supporters of all that is best in motoring practice, who still retain cars of several years use, which, however well constructed they may be in other respects, almost without exception

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are weak in the braking equipment. On this account it should not be difficult to urge successfully the comparatively minor conversion involved in the complete renewal of present equipments or the substitution for them of more modern and reliable ones.

A Fault in Steering Wheels.

It is a comparatively rare experience for the driver to find that the rim of the steering wheel has suddenly separated itself from the spider and is lying idle in his hands while the machine is forging ahead without guidance. Yet this has been known to occur more than once, and several fatalities are chargeable to it, though the fact may have escaped the scent of the newspaper writers who are merely content to lay the blame to the steering gear and to omit a more rigid examination into the sequence of cause and effect.

It is easy enough to see how the difficulty may arise. The screws which are merely embedded in the wood or vulcanite of the rim, gradually become loosened through continual racking and possible shrinkage of the rim itself. Once permitted to become slack, they work back and forth as the wheel is used until finally they drop out altogether, or else are sheared off when a sudden strain is thrown upon them.

Obviously where the possibility of such a mishap exists it behooves the designer to improve upon the method of construction by devising some means either of locking the screws in place, or by substituting an entirely different method of uniting rim and spider. For the user, it may be suggested as a wise precaution that whenever the rim is found to have even the slightest perceptible amount of lost motion over the spider, the heads of the screws should be bared and the screws themselves tightened or replaced with new and larger ones. The risk involved is far too serious to be lightly overlooked.

Because of the decrease in automobile registrations in almost all of the states during October, it has been suggested that the motor car trade could not have been quite as brisk during the month as many of the dealers represented. The explanation, according to a prominent metropolitan dealer, lies in the fact that most of the orders given during October were for 1909 cars, which will not be delivered for some little time to come.

LOW FARES TO NEW YORK SHOWS

Trunk Line Grants Special Rate to A. A. A. Members—Applys to All Points Except New England and the South.

That members of affiliated clubs and individual members of the American Automobile Association desiring to attend the midwinter automobile shows in New York City will be given the benefit of a special reduced round trip railway rate of a fare and three-fifths over all lines controlled by the Trunk Line Association was announced from the National Headquarters of the A. A. A. this week. This benefit has been secured in order to permit members living at a distance to secure the benefits of the two show weeks in addition to attending the open meetings which the association purposes holding during the two periods of January 4-7, inclusive, and January 19-23.

In accordance with a plan already announced the association is perfecting arrangements for the meetings which are designed to strengthen the position of the A. A. A. and to further the interests for which that body is laboring. The gatherings will be held at the National Headquarters.

The first series will be coincident with the show in Grand Central Palace, held under the auspices of the American Motor Car Manufacturers Association, which opens on December 31st, and continues until January 7th. Tickets and certificates applicable to this period may be purchased not earlier than December 31st nor later than January 5th, for the trip to New York, which certificates when duly validated will entitled the holder, up to and including January 11th, to a continuous return ticket over the route upon which the going journey was made.

The second series of meetings will be held in connection with the show of the Licensed Association of Automobile Manufacturers which opens on January 16th and continues until January 23d. Tickets and certificates of the second series may be obtained not earlier than January 16th nor later than the 21st for the trip to New York. The certificates entitling the holder to a continuous return ticket over the same route on which the going journey was made, may be validated up to and including January 24th.

Only members of the clubs affiliated with the A. A. A. and individual members of the association will be entitled to these reduced fares. Motorists who are not members may obtain individual membership upon application to Frederick H. Elliott, secretary, 437 Fifth avenue, New York City. Membership must be secured prior to making the trip, however, in order to entitle the new member to the reduced fare privileges. By the concurrence of the Central and Western passenger associations the rate is made to cover all points east of Denver, but not including New England or the Southern States. Members traveling over the lines controlled by the Western Association will be granted the rate of a fare and three-fifths east of Chicago, Peoria and St. Louis. West of those points they will be given a special low rate in accordance with the regulations of the Western Association.

COMING EVENTS

November 14, Philadelphia, Pa.—Quaker City Motor Club's race meet, Point Breeze track.

November 25, Savannah, Ga.—Automobile Club of America's 200 miles light car race.

November 26, Baltimore, Md.—Automobile Club of Maryland's hill climb, Belvidere avenue hill.

November 26, Savannah, Ga.—Automobile Club of America's (New York), 400 miles race.

November 27, Denver, Col.—Colorado Industrial Exposition Association's race meet. Overland Park track.

December 31, Long Island Motor Parkway—Speed trials against time, auspices of the Long Island Motor Parkway, Inc.

February 27-March 3, Hartford, Conn.—Automobile Dealers' Association show.

Traffic Experts to Confer.

For the purpose of still further enhancing the importance of its traffic department, the National Association of Automobile Manufacturers, Inc., has arranged for a series of meetings of the traffic experts connected with the various automobile factories. Under the arrangement recently made, the department now represents not only the National Association of Automobile Manufacturers, but the Licensed Association of Automobile Manufacturers and the American Motor Car Manufacturers Association as well, embracing a total of 93 members. Of these a large number take full advantage of the facilities offered by the department, which attends to classification matters, checking of freight bills, the proper classification of goods shipped to and from the factories, the preparation of and all other attention to claims, and kindred matters requiring expert attention.

James S. Marvin, manager of the traffic department, is at present in the West attending a meeting of one of the classification committees and as soon as that meeting is over, will hold meetings with the traffic managers in Cleveland, Indianapolis, Chicago and Detroit. Later on meetings will be held in eastern cities and it is not unlikely that general meetings will be held during the New York and Chicago shows.

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LOCOMOBILE DAY AT BRIDGEPORT

City Makes Holiday in Honor of Vanderbilt Cup Victory—Banquet to Builders and Driver of Winning Car.

It is probably no exageration to say that seldom if ever has more sincere or enthusiastic tribute been paid to local enterprise than that accorded the Locomobile Company of America by the City of Bridgeport this week, in token of the victory of its car in the Vanderbilt Cup contest of two weeks ago. On Monday, 9th inst., a half holiday was declared in all factories, schools and local places of business, crowds thronged the streets to witness an exhibition performance by the car, and in the evening the celebration was crowned by a banquet tendered by the Bridgeport Board of Trade, the Manufacturers' Association and the Press Club, to the officers of the company and to George Robertson, driver of the winning No. "16" car. As an outburst of civic pride it was quite as conspicuous as in its avowed character of a flattering tribute to a significant achievement in the industry.

As a preliminary to the affair, the victorious car, which had been on exhibition at the New York show rooms of the company, made a triumphal progress to its home town on Sunday. Accompanied by an escort of a score of sister cars carrying representatives of the company and their guests, it made a scheduled run over the famous route across the Connecticut border. Along the way crowds were gathered at places where it had been announced stops would be made to enable the machine to be inspected. At least one stop not on the schedule also was made when, at 116th street, Manhattan, a motorcycle policeman halted Robertson and cautioned him against violating the speed law. As Bridgeport was approached the crowds and the enthusiasm increased until the streets were literally lined with people, many of whom had gone long distances to witness the passage of the car.

Monday's program was characterized by an exhibition of the car on the public streets, when apparently all of Bridgeport's 80,000 inhabitants and a few others from outside were packed along the course. Opportunities for a display of the true speeding capabilities of the car were somewhat limited because of the congestion, nevertheless, in traversing Main street, Bullshead, Meadow street and Washington and Madison avenues some little speed was attained, and in a flight the length of Main street, the distance of 5½ miles was covered in 7 minutes. The demonstration was such as is seldom called forth for any purpose, and probably has never been approached by any similar occasion attributable to the automobile industry.

The banquet of the evening was laid at the Hotel Stratfield, for 300 guests and was graced by the presence of a number of well-known motorists, as well as local celebrities, city officials, newspaper men and others. It was specifically tendered to the officers of the company and crew of the Locomobile which captured the Vanderbilt trophy. The guests of honor included: S. T. Davis, Jr., the president of the company; Amzi L. Barber, his father-in-law; A. L. Riker, designer; E. F. Russell, superintendent; T. H. Thomas, treasurer; J. A. Kingman, George Robertson and Glenn Ethridge, his mechanic. State's Attorney Stiles Judson served as toastmaster, introducing the speakers, and said that the winning of the race was a triumph for the country, for Connecticut, for Bridgeport; a triumph for Riker, the designer of the car, for the officers of the Locomobile company, and the mechanics who put their brains into steel in the making of the car; and for Robertson, the intrepid driver, and his mechanician.

In closing, he pledged this toast: "To the future of Bridgeport, and to the future of Bridgeport's citizenship and may her interests be forever confided to the care of such whole-souled and sterling business men, who through their organizations and aided by the Press Club, have contributed so much success to this occasion."

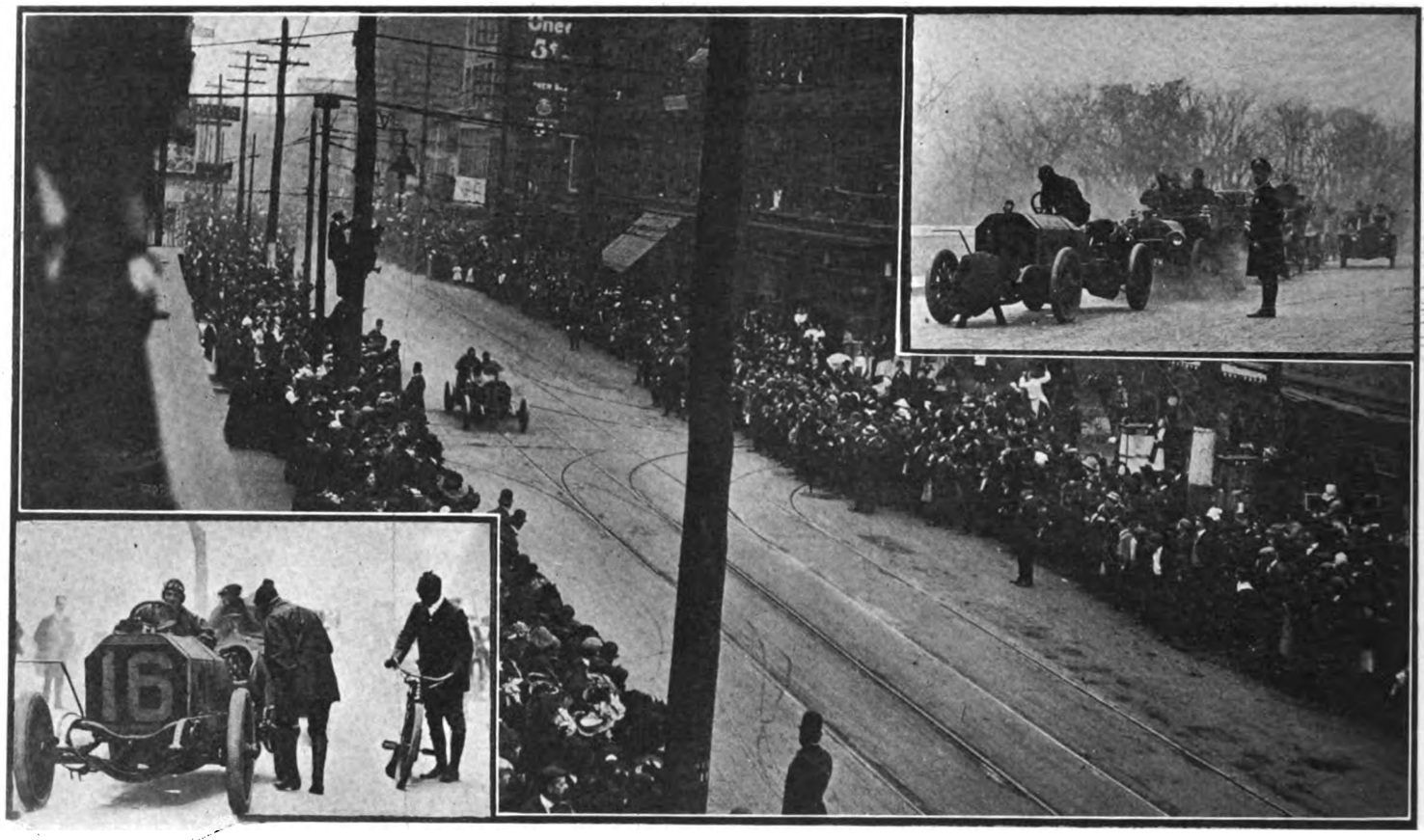


ROBERTSON, THE VANDERBILT CUP, AND THE WINNING CAR AT BRIDGEPORT

Laudations of the car and its makers constituted the chief theme of the speakers at the banquet, an exception being in the case of Barber, who was introduced as the father of the Locomobile company. After laughingly explaining that he had founded the company merely to furnish an occupation for his son-in-law, he devoted his attention to the subject of good roads. A somewhat important utterance was made by Frank G. Webb, vice-chairman of the Vanderbilt Cup Commission, whose remarks constituted the first public declaration of a plan for altering the rules governing the cup contest and forecasted their probable modification to conform to the regulations promulgated by the international congress of recognized automobile clubs.

In remarking that the Locomobile had won its last race and would be ineligible for future contests for the cup, Webb created something of a stir until he explained that in all probability the rules would be changed

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HELD UP BY NEW YORK COP—ROBERTSON'S FLIGHT ON MAIN STREET, BRIDGEPORT—HALTED ON CITY ISLAND BRIDGE.

before another race was held, and that that particular Locomobile would therefore be ineligible to compete again. The bore of engines on competing cars will be restricted in future probably to 131 millimeters and perhaps the stroke as well. It will be remembered that a decision in this direction made early last summer, would in all probability have prevented the break between the American Automobile Association and the Automobile Club of America.

Others speakers of the evening were Police Commissioner George Hill, as Mayor Lee's substitute, and John C. Wetmore, representing the press; Fred Enos, president of the Board of Trade, and others.

One of the chief features of the dinner was the Vanderbilt Cup itself, which stood on the table directly in front of the proud Robertson. Its presence also was the occasion of the presentation to the company of a set of resolutions of appreciation suitably engrossed, by Judge E. K. Nicholson for the Bridgeport Board of Trade, while Andrew L. Riker was the recipient of a Board of Trade shield, in token of his skilful services as originator of the car. Later Robertson was presented with a cup emblematic of the spirit of the evening and bearing the significant legend:

"Local Pride Cup, presented to George H. Robertson, by the Bridgeport Board of Trade, in recognition of his skill and courage in driving the Locomobile 'Made in Bridgeport' to victory and winning the Vanderbilt Cup, October 24, 1908."

Formal presentation of the cup to the winner will be made at the club house of the Automobile Club of America to-night (Thursday), when further tributes will be paid to the achievement. The presentation will be made by Jefferson De Mont Thompson, chairman of the Cup Commission, in addition to which a limited number of speeches will be made by men well known to the sport and industry. There will also be a lighter section of the program, consisting of an exhibition of moving pictures showing the contests for the Vanderbilt trophy and other recent events.



GREETINGS AT NEW ROCHELLE

In many respects the last has proved to have been the greatest of the four Vanderbilt races. Not only was it distinctive to the American because it was a clean victory for an American car, but also because of the fact that the average time of the winner was better than that made by the winners of any previous race. Some little confusion was brought about at the time owing to the fact that the account of the race published by the Motor World failed to emphasize the fact. This was due to an inadvertent comparison of averages for the race. Wagner's average for the 1906 race was 61.43 miles per hour instead of 65.13. As everyone now knows, Robertson's average time of 64.3 was faster than any previous average.

Club Formed to Run Special Trains.

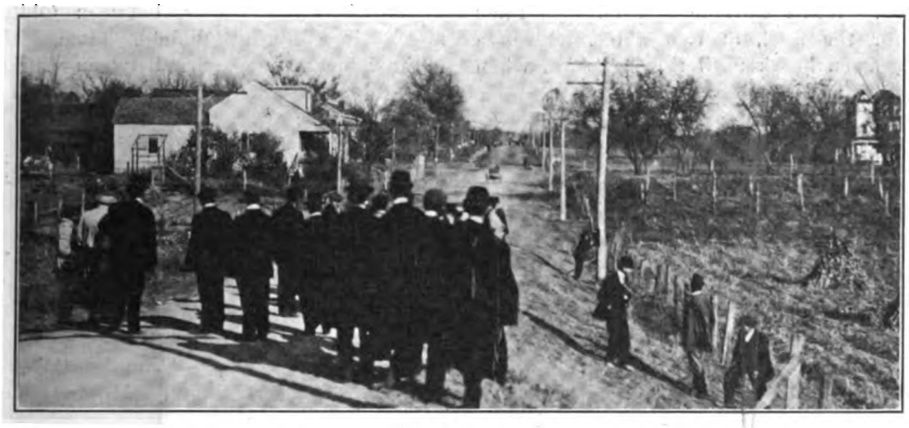
The Twentieth Century Automobile Club, of New York City, has been incorporated under New York laws. with $500 capital. The incorporators include Horace B. Dobbie, Samuel D. Koch and Arthur C. Stafford, 302 Broadway. The club is to run a special train to the races at Savannah.

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ST. LOUIS SEES ITS FIRST CLIMB

Baldwin Makes Best Time up Solomon's Hill—Then Oldfield, Christie and Soules Give Two Days Circus.

Motorists of St. Louis, Mo., and vicinity were treated to a dashing exhibition of hippodrome enterprise on Friday, Saturday and Sunday last. 6th-8th insts., when the conquering trio, Oldfield, Christie and Soules, together with a few local contestants and others performed on Solomon's hill, and on the old fair grounds track. Ostensibly—that is to say, according to the Oldfield posters—the meet was under the auspices of the "Auto Dealers' Association," though as a matter of fact this announcement was a source of some surprise to the members of the St. Louis Automobile Manufactures and Dealers Association.



VIEW OF SOLOMON'S HILL FROM STARTING POINT AT FOOT.

When E. A. Moross dropped in on St. Louis a few weeks ago with determination in his eye, the gods smiled on him; for that very night the members of the association were about to meet and talk over their hill climb and show plans. Moross, who is the manager of a theatrical company of thrillers, appeared at the meeting and made a modest little speech in which he said something about a three-day carnival and explained to the association what a fine thing it would be for them to have two days of track doings follow their proposed hill climb. The dealers refused all his blandishments. Moross, of the "Dare Devil Drivers" company, however, did not retire to the woods defeated. He ordered on his scenery props and actors, emblazoned the town with picture work of the beloved Barney and the dates of the two-day meeting at the old fair grounds race track, with some fine print underneath about the climb on Solomon's hill. In larger letters followed, "Under the Auspices of the Auto Dealers Association."

St. Louis had never had a hill-climb before, and lots of people owning nice automobiles did not know how uninteresting such things can be, so fully 500 of them drove out 14 miles on the Manchester road and lined up for the sights. About ten times as many more people got out there, too, although there wasn't any way to do it except a-foot or en automobile.

Keenly expentant, they waited an hour or so while an amateur adjusted the electric timing device. Then a motor buggy came up the one-sixth mile grade in 2 minutes 54 seconds.

Keenly expectant, they waited an hour they would figure out the percentages based upon piston area, and weight of the competing cars, the latter went home and retired without tackling the job. The next day the dealers said that it was "up to the judges." The judges haven't gone to work with the figures yet, and the indications are that they will not. Nevertheless it is pretty clear that Baldwin, driving a specially made Stanley steamer won the laurels in the free-for-all with a time of 40⅘ seconds. The best time for a gasolene car was that of the Apperson, driven by McClain, which covered the grade of six-tenths of a mile in 46⅖ seconds. In the class for cars with piston diameter between 65 and 90 square inches the Apperson, driven by McClain, beat the 30 horsepower Moon by a close margin.

The incline for the test has a bad turn and because Philip Wells, who piloted the made a vain attempt to regain the record but could not touch the steamer's mark. Once upon a time Oldfield made the old record of 0:59 for this particular course. 30 horsepower Moon, tried to take it at a 35-mile an hour clip, he came to grief. For a minute after the spectators at the top of the hill thought that car and driver had been terribly injured, but when the cloud of dust cleared Philip Wells was found sitting at the wheel of the car with a broad smile on his face. On account of three crazy turns that the machine made a rear wheel gave way, but otherwise the car was uninjured. The Moon was the first fast car to take the turn. Other drivers that followed profited by the accident and cut out their motors when they approached the dangerous spot.

The incline known as Solomon's Hill is the stiffest gradient within a radius of 100 miles of St. Louis. There are steeper turns in the Ozark foothills only. At first the grade is easy, but it grows steeper as the road leads on. The danger curve in the shape of an "S," is about the middle of the route; then the grade becomes stiffer and stiffer to the summit.

The 45 horsepower Stoddard-Dayton, driven by Tuttle, scored over the Packard and Stevens-Duryea stock cars. Tuttle negotiated the climb in 49 flat. The Packard's time was 54⅘ seconds. Oldfield and Soules both covered the distance in 46⅖ seconds.

The feature of the first day's program for the track meet was L. H. N. Baldwin's mile, which he covered in the Stanley steamer in the fastest time ever made by an automobile—on that track. The redoubtable Barney Oldfield made a vain attempt to regain the record, but could not touch the steamer's mark. Walter Christie also tried a circuit in his big "Record Breaker," but the best he could do was 0:59 flat, or two-fifths of a second better than the time made by Oldfield.



BAD TURN LOCALLY KNOWN AS "THE HAIRPIN"

Ollie Savin also performed and made a trial at the mile rocord, but failed to outdo the other exhibitors. Savin, it must be re-

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membered, is none other than "The Great Savini, Champion Driver of Italy," of a year or two ago, and later said to be a chauffeur whom Oldfield had discovered in somebody's garage.

When a "sweepstakes" event was called, Oldfield had no trouble in taking the first heat of 2 miles from Savin in 2:21⅕. Later Christie beat Soules in the second heat in 2:08. This entitled him to try at the final of one mile with the intrepid Barney. The ensuing bout was described locally as the "greatest race ever seen in that part of the country." Christie drew the ragged edge and on the first jump, Oldfield slid along the pole and held it. But Christie was rubbing against his rear tire in hot pursuit, as they flew round, throwing up a surf of dust. In the last 50 yards of the stretch, Christie shot ahead and won by a carburetter's length in 1:04⅕.

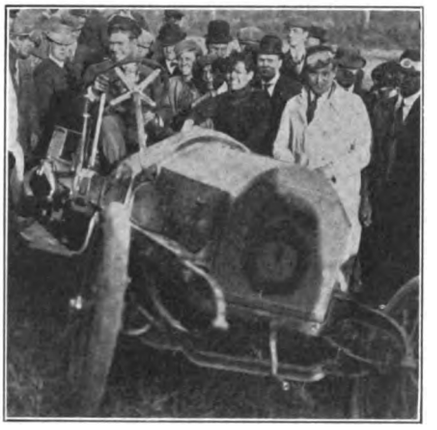
The three miles handicap between Paul Caldwell in a 6 cylinder Pierce (25 seconds), Baldwin in a Stanley steamer (scratch), Jack Blincoe in a 30 horsepower Packard (25 seconds), Jack Taylor at the wheel of a Stoddard-Dayton (20 seconds), and Soules in the Stearns "Red Devil" (15 seconds), was run under a blinding dust cloud. As a result, the Pierce driver deftly won in 3:31, the others failing to catch him. Baldwin, however, passed all of the other contestants, except Caldwell, scoring second, with Taylor in third place.

Two "special" races followed, for Ford and Moon cars, respectively. Sluder and Britter scored first and second in the first of the two, the time being 3:27 for the two miles, while Philip Wells got away with the 2 miles Moonbeam spin in 2:31⅘, with Grinham second.

There was plenty of low comedy in a rough-house 5 miles "novelty" affair, that would be considered a little too strenuous by most law abiding citizens. The conditions provided that each operator should drive his car alone the first mile and at the end of this, pick up three passengers, discharging them at the close of the second mile; then in the third lap, pick them all up again and dump them after the fourth circuit and finish the last lap alone. None of the drivers bothered to slow down sufficiently to permit graceful unloading and as a result, passengers had to take flying leaps from the flying cars, landing all sorts of ways in the dirt. Some of the drivers lost their heads in their high speed efforts, the Moon pilot forgetting to take on a load of passengers on one round, and the Chalmers-Detroit getting away with only one instead of three passengers. F. Maynard, in a Maynard car, was the winner in 8:37⅗.

Two accidents marred the day: one to F. Bahnson, riding a motorcycle in a preliminary event, when he skidded and was thrown, and the other when William Igoe, driving a Moon, plunged through the fence at the far turn in a special trial. Dust blinded the latter driver, who pulled through very slightly damaged, although the car was smashed.

Sunday, the second day of the trackfest, saw Oldfield turn around and beat Christie in the final of another sweepstakes. In the first heat Christie disposed of Soules with ease, when he circled the mile course in 1:00⅗, leaving his opponent to admire the scenery. Then Oldfield and Savin went at it in the second heat, and, of course, the former won, making the two miles in 2:03¾. When Christie and Oldfield lined up for the final, at two miles, it was a fairly even break until the last turn, when



WELLS SURVIVES WRECK OF THE MOON

the latter out-generaled Christie and won by two lengths in 2:04 flat.

It was Baldwin in his steamer, however, who got the crowd enthused. The car went whistling around in a mile trial, and equalled its mark of the previous day, 0:54⅘. Oldfield and Christie performed second best in the mile trials, each doing a circuit in 0:58. Soules went around in 1:02, while Caldwell in his Pierce six did a lap in 1:04⅗.

The five miles handicap saw practically the same starters as the 3 miles handicap of the first day. Baldwin starting from scratch, won a really creditable victory, for in passing the others he had to tear through a veritable maelstrom of flying dirt and pebbles and blinding dust. One by one, he cut down Soules, Caldwell, Phil Wells, Jack Taylor, and demonstrated that in short bursts of speed, stock cars are not to be classed with the special steamer product. Baldwin's time was 3:34, or 3:04 net, and Taylor and Wells scored second and third, respectively.

Jack Taylor, Stoddard-Dayton, took a 2 miles special from Wells, Moon, without great effort in 2:21⅗; H. M. Paine, in a Chalmers-Detroit, being the also-drove. Caldwell piloting his Pierce spread himself by winning the event for comedians—the five miles novelty race. The summaries:

Saturday, November 7.

Two miles for Ford runabouts—Won by H. K. Sluder; second, P. Britter. Time, 3:27.

Two miles for Moon cars—Won by Philip Wells; second, Grinham. Time, 2:31⅘.

Two miles, open to Buick and Chalmers-Detroit cars—Won by McQuillan, Buick; second, Paine, Chalmers. Time, 3:01⅕.

Four miles novelty—Won by F. S. Maynard, Maynard. Time, 8:37⅗.

Sweepstakes event; first heat, 2 miles, between Christie and Soules. Won by Christie. Time, 2.08.

Second heat, 2 miles, between Oldfield and Savin—Won by Oldfield. Time, 2:21⅗.

Final heat, one mile, between Christie and Oldfield—Won by Christie. Time, 1:04⅕.

Five miles motorcycles—Won by J. H. Anderson; second, Frank Hazzard; third, Charles Cornwell. Time, 6:53⅗.

Sunday, November 8.

Two miles special—Won by Jack Taylor, Stoddard-Dayton; second, Philip Wells, Moon; third, H. M. Paine, Chalmers-Detroit. Time, 2:21⅗.

Five milesfi, novelty—Won by Caldwell, Pierce; second, Quinlan, Moon. Time, 7:42.

Exhibition mile—Won by Baldwin. Time, 0:54⅘; second, Oldfield, 0:58; third, Soules, 1:02; fourth, Caldwell, 1:04⅗.

Five miles handicap—Won by Baldwin (scratch); second, Jack Taylor (30 seconds); third, Philip Wells, Moon (30 seconds. Time, 3:04. Caldwell, Pierce and Soules, Stearns also competed.

Sweepstakes event—First heat, 1 mile, between Christie and Soules—Won by Christie. Time, 1:00⅗.

Second heat, 2 miles, between Oldfield and Savin—Won by Oldfield. Time, 2:03¾.

Final heat, 2 miles—Won by Oldfield. Time, 2:04.

Speed Indications for Savannah.

Results of the first practice spins over the Savannah course for the forthcoming Grand Prix race have enabled the prophets already gathered about the southern circuit to form the first estimates as to the times possible of achievement in the race. Although the course is smoothly laid at all points and the turns well banked, it is thought that the number of curves to be encountered will seriously affect the running of the cars. According to one estimate, however, the average may run as high as 68 miles an hour. There are 16 turns in the circuit so that the drivers will have to negotiate no less than 256 corners in the 400 miles race.

America's chances of winning were increased this week by the entry of a sixth competitor for the Grand Prix contest in the 50 horsepower Buick which Robert Burman is to drive. The American representation in full will comprise, in addition to the Buick, the Simplex, National, Lozier, Acme and Chadwick cars.

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NEW ORLEANS EASY FOR STRANG

His Only Failures Caused by Grandstand Play and Tire Trouble—Honey Wins the Fifty Miles Event.

New Orleans' two days track meet held on Saturday and Sunday, November 7-8, at which Lewis Strang and Emil Stricker were billed as head-liners, turned out to be rather uneventful. At times it was very tame, while occasionally bursts of speed worked the enthusiasm of the crowd to a high pitch. Stricker made no sort of a showing, owing to motor troubles and as a result, Strang had no one of high calibre to give him any amount of argument. He took first place in a few races, in walkover style. Tire trouble, however, caused him to lose the big event of the meet, the 50 miles, and an unusual self-imposed handicap prevented him from scoring first in another race which might easily have been his. It is to be hoped that the next race meet held by the newly organized New Orleans Automobile Club will provide slightly better racing, although as a first attempt, this one was considered a success by the local enthusiasts.

On Saturday, the first day of the meet, Lewis Strang distinguished himself from the very start. He made his first appearance in a five miles three-cornered race, which was run in heats and pleased the expectant crowds by winning two out of the three. The first heat was between Herbert Conners in a car bearing the awe-inspiring soubriquet, "Red Devil," and Jack Racklyf, in a Thomas Flyer. The fire and brimstone in the Satanic car soon began to smoulder and in the fourth lap it withdrew, with all of its devilishness completely subdued. Racklyf's time was 6:45. In the second heat, Strang in his Renault, Emil Stricker in his "Green Dragon," and Charles Swaboda gripping the wheel of a Stoddard-Dayton figured. The Green Dragon had trouble with its radiator, and Strang worried no longer, but beat Swaboda by a small margin. Strang led easily through the fourth mile of the final, with Swaboda second and Racklyf third, and then when Swaboda's car broke down, Strang stopped and permitted his mechanician to assist the stalled car. In the meantime, Racklyf, in the Thomas, gained materially on Strang, but the winner of Savannah and Briarcliff soon recovered his lead. winning a victory none too brilliant in 6:29.

In a curtain raiser for cars selling at $1,500, at 5 miles, Thurber, piloting a Chalmers-Detroit, won the honors in 6:50⅕, the race being gingered up by A. L. Abbott's Buick smashing down a fence. Driver and mechanician were hurled out, but escaped injury. Only two contestants faced the starter in the five miles open—"Andy" Anderson with a Ford "Six," and M. F. McIntyre in a White steamer, the latter being protested at first on the ground that it was "specially built." Later when Anderson beat the White in a walkover, to the tune of 6:38⅕, the protest was withdrawn.

In the final event the piece de resistance of the first afternoon, Strang attempted a bit of grandstand play and sacrificed the event in consequence. The race was scheduled to run 50 miles, but on account of the lateness of the hour it was cut to 20. So sure was Strang of winning that he announced that he would stop in front of the grandstand at the end of the tenth mile and change a tire, giving a demonstration of how quickly it could be done. When the field started, Strang got the jump on the others—Racklyf in the Thomas, Anderson in a Ford Six, and McIntyre in a White steamer—and the Renault led for the first 10 miles. Then Strang stopped his car and took just three minutes to remove an old tire and substitute a new one. Meanwhile the Thomas Flyer had gained a mile and a quarter. The Renault driver then set out in an effort to regain the lead. One mile was caught in 58 seconds, which was the fastest of the day. But it was getting dark, and in consequence of this, perhaps, Racklyf finished first, doing the 20 miles in 25:13, and Strang crossed the line just a second after him. Strang's time for the 20 miles, with the three minutes taken out, during which the tire was changed, was 22 minutes and 16 seconds.

In the "feature" event of the second day, the postponed 50 miles race, Strang was a loser. He was leading Frank B. Honey, who was at the wheel of a 60 horsepower Thomas and the pair were making a good race of it when one of the Renault's tires punctured. Strang drove a lap on the rim and then lost three minutes making a change. Honey seized the advantage and made the most of it. the star of the meet failing to catch him before the tape was crossed. The winner's time was 1:01:40, Strang rolling in a natural second, inasmuch as the two other contestants had dropped out. One of these. Charles Swaboda, in a Stoddard-Dayton, broke an axle, which caused him to go crashing through a rail fence. Anderson in the sulphurous "Red Devil," was obliged to quit in the early stages of the bout.

Strang was quite disturbed over his defeat and challenged Honey to another contest at the same distance, agreeing to forfeit $500 to some charitable institution if the Renault could be beaten. The Thomas driver did not pick up the gauntlet, however.

Swaboda in the Stoddard took first in a five miles stock car event, in 6:37⅕, trailed by Anderson in a Ford "Six," and A. L. Abbott with a Buick. The Pelican Handicap at 5 miles, was easily won by Strang. He covered the distance in 5:42⅕, making one of his miles in 0:58⅕. Anderson played to second place, while the Ford and Fred Haack followed.

The wind-up was rather fizzlish. All of the "stars" were scheduled to start in the final five miles event, but at the last moment, the Honey Thomas was withdrawn, and as Swaboda's car was wrapped around a fence post, it was hopelessly barred. This left the fight to Strang and Stricker, and the latter playing in hard luck, broke down after leading Strang for a mile. Strang's time for the lone race was 5:53⅕.

The summaries:

Saturday, November 7.

Five miles, cars selling at $1,500 and under—Won by E. J. Thurber, Chalmers-Detroit (walkover). Time, 6:50⅕.

Five miles, cars selling at $3,000 and under—Won by Anderson, Ford; second, M. F. McIntyre, White. Time, 6:38⅕.

Five miles, Crescent City Sweepstakes—First heat won by Jack Racklyf, Thomas; second heat won by Lewis Strang, Renault. Time, 6:05. Final heat and race won by Strang. Time, 6:29

Twenty miles, open—Won by Jack Racklyf, Thomas; second, Lewis Strang. Time. 25:15.

Five miles motorcycles—Won by Arthur Redfern (N. S. U.); second, Russ Smith (N. S. U.).

Sunday, November 8.

Five miles, cars selling at $3,000 and under—Won by Swaboda, Stoddard-Dayton; second, A. Anderson, Ford; third, Abbott, Buick. Time, 6:37⅕.

Fifty miles open—Won by Frank B. Honey, Thomas; second, Strang, Renault. Time, 1:01:40.

Five miles, Pelican Handicap—Won by Lewis Strang; second, A. Anderson, Ford; third, Fred Haack, Pope-Toledo. Time, 6:37⅕.

Five miles motorcycle—Won by Russell Smith (N. S. U.). Time, 7:10⅕.

Swanbrough Wins Denver Economy Run.

Eighteen cars started out bright and early on Saturday last, 7th inst., on the Denver Motor Club's economy test and all survived the ordeal without swooning or stranding in ditches. The run from Denver to Greeley and return covered a distance of 112 miles, and E. W. Swanbrough, driving a Corbin car, won both of the prizes offered—the Ralph W. Smith cup and the Denver Motor Club cup. The first of these was awarded for scoring the highest percentage in accordance with a formula derived by dividing the weight of the car with passengers, by the weight of the gasolene consumed, as expressed in half ounces. The second prize was awarded to the car making the drive with the least gasolene consumption regardless of any figuring on weight or percentage.

Red Bluff Automobilists Organize.

Red Bluff, Cal., has a new automobile club. James Seeley has been elected president and F. W. Becker secretary.

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LONG GRIND OF ROUGH RIDING

Page Wins Strenuous "Twice-Around-the-Clock" Race at Los Angeles—Rugged Track Causes Accidents.

Driving 21 hours out of 24, J. Murray Page, at the wheel of a 40 horsepower Locomobile roadster, won the "twice-around-the-clock" contest at Ascot Park, Los Angeles, Cal., on Saturday and Sunday, October 31-November 1, covering 916 miles. His nearest competitor, a Franklin, piloted alternately by Guy Irwin and Ralph Hamlin, rolled up 835 miles, and Harry Lord, handling a Studebaker, almost continuously, was third with 629 miles to his credit. The only other survivor of the seven original starters was a 10 horsepower Reo with Lee Garricke at the stem, who reeled off 474 miles, running practically all of the time.

Page, scoring the second big victory for the Locomobile within nine days, won the handsome Diamond trophy valued at $1,000, while Irwin and Hamlin, the Franklin drivers, and Harry Lord, the Studebaker pilot, were awarded gold medals.

The battleground of this affray—the old Ascot Park race track—was no path of roses or Long Island Motor Parkway, by any means, nor was it even a good mile of ordinary road. The circuit was a trail of furrows, ditches and bumps that made anything but pleasant work for the drivers and the rough course was wholly responsible for the accidents that occurred, though fortunately none of them resulted seriously.

Seven cars faced the starter at 4 p. m., on Saturday, Guy Irwin in a 6-cylinder Franklin; J. M. Page, in the Locomobile; Bert Dingley, intent upon holding up his reputation in the Chalmers-Detroit "Bluebird"; Lee Garricke jammed in the 10 horsepower Reo "Kiddo"; together with Frank Free's Sunset, Harry Lord's Studebaker, and Harold Stone's mixed mount, which is said to be partly Pope-Hartford and partly other brands, and known as the "Paris Pet." It was a fairly even start, all cars except the Franklin making a good getaway. Free was the one to nip the pole first, with Dingley and Page hot upon his rear tires, and for a mile they spun around in this order, Free flashing past the grandstand just a few feet ahead of the Bluebird. For a few minutes the pack found the Sunset about as hard to chase as a rainbow. Then Dingley inched up and by degrees eclipsed the leader, to the tremendous shouting of the 4,000 spectators, when he covered a mile in 1:09, the fastest lap of the entire race. Murray held his own in third notch, threatening Free constantly, while Dingley continued to take the curves at high speed of the sensational order. In the seventh round the latter lapped Lord in the Studebaker and during the eleventh he circled Irwin's Franklin "Greyhound." Before the fifteenth mile was completed Dingley's Bluebird had lapped every car on the course.

When he tried to drive a second ring around Irwin's Greyhound another race was on and the crowd went wild with delight as these two fought, taking turns at passing each other for miles.

Before long, Free, tiring of the hot pace, shut down slightly and was content to drop back to fourth place. Dingley had covered 29 miles during the first 30 minutes of the race.

The end of the first hour saw Dingley leading, followed by Page, Irwin, Free, Harry Lord, Stone with his Pope, which had experienced trouble, and the little Reo, which Garricke was joyously piloting. About this time, all of the contestants were obliged to stop and light their lamps, each being allotted the same amount of time for the purpose.

The cars had scarcely gotten well started with their head-lamps burning when Dingley's Chalmers came to grief and slowed down with a badly burned out main bearing, caused by clogged lubrication. This delayed the car for more than three hours while the motor was being torn down and gave the lead to Page and Irwin. The next thing to go wrong was at the end of the third hour, when the "Paris Pet," on its 147th mile, smashed its transmission with a loud rip and a crash, putting it out of the running for good. The break was such a bad one that part of its gear case dropped on the track, before Stone could stop.

At 11 p. m. the end of the first seven hours period, the contestants were called off the track for two hours, to give the course a good rolling. The contestants shot away again at 1 a. m., the Locomobile fighting hard in an effort to pass the Franklin that Hamlin and Irwin were driving alternately, while Free's Sunset was a close third.

Throughout the night and early morning hours Page kept fighting the Greyhound drivers and looked a likely winner when the sun arose on Sunday. Little by little he gained on Hamlin in the Franklin, and during the 15th hour passed that driver and secured the lead, which the Franklin never succeeded in overcoming. At this stage of the game Page's Locomobile had 613 miles to its credit; Hamlin's Franklin, 602; Free's Sunset, 451; Lord's Studebaker, which had developed engine trouble, 446, and the little Reo, 299—still running consistently.

In the 16th hour, Page increased his lead to 16 miles and in the 19th, he had run his mileage up to 781, leading the Franklin by no less than 21 miles—a margin that seemed safe enough. The Studebaker and Reo were trailing at a respectful distance.

Shortly after 1 p. m. Sunday, George Hart, who was Free's alternate in the Sunset, provided a thrill while ploughing over the soft course at a 50 miles an hour clip. Just as he rounded the three-quarter post, a steering knuckle broke and set the car spread-eagling. It described a snakey "S" in the center of the track; then faced about and came to a calm stop. The break was hurriedly brazed and the car rushed back into the race.

Page was relieved by R. J. Leavitt, the owner of the Locomobile, for about three hours during the third period of the contest—the contestants having been given another recess between 2 and 4 p. m. When Page returned to the wheel his victory seemed certain, for while he was chasing the Franklin at a dizzy pace, the former broke a spring and a piece of the leaf was run over by the Locomobile, cauisng the latter's rear to blow out with a loud report. The Franklin had to retire for two hours; then it reappeared and continued to limp along, game to the end.

Then the Sunset, running third, had a second accident; this time with Free at the wheel. He was letting the car out almost to its capacity, when the other knuckle snapped, sending the car directly into a rail post, upon which a boy was perched, The impact shot the youth through the air at meteor speed, landing him undamaged, however. Free and his mechanician, Kendall, were also thrown, but were not injured. The car, however, was reduced to scrap iron.

When the 22d hour was reeled off Page was leading by 74 miles, with the Franklin credited with 799 miles total, and the Studebaker with 591. Garricke's Reo was the only other car left in the race. Through the 23d hour, the Locomobile ploughed along steadily tearing up the loose dirt and when the long grind was called off its score stood at 916 miles, against the Franklin figure, 835, and the Studebaker 629 miles. Garricke and Oberlin, in the Reo "Kiddo," showed that the midget car could run twice around the clock and stand up on all four tires by chalking up 474 miles to its credit.

Date for Quaker City Endurance Run.

What will probably be the first automobile contest of the year 1909 will start in the cool drab dawn shortly after the New Year horns have ceased tooting on January first next, at Philadelphia, Pa. There may be other contests on this same day in other parts of the country, but the members of the Quaker City Motor Club are going to arise early and make an effort to be "first off" with their third annual endurance run, which is to occupy two days, and which will doubtless attract much interest in the scrapple belt. As there has been a change in the deed of gift of the McDonald & Campbell Cup, which formerly was a perpetual trophy, contested for annually, the next contestant will be a decisive one, as the trophy, under the new conditions, will become the permanent property of the winner. In the search for a clean score eliminating route, the contest committee has decided upon Walkes-Barre and return as the line of battle.

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HARTFORD'S MOTOR AMBULANCE

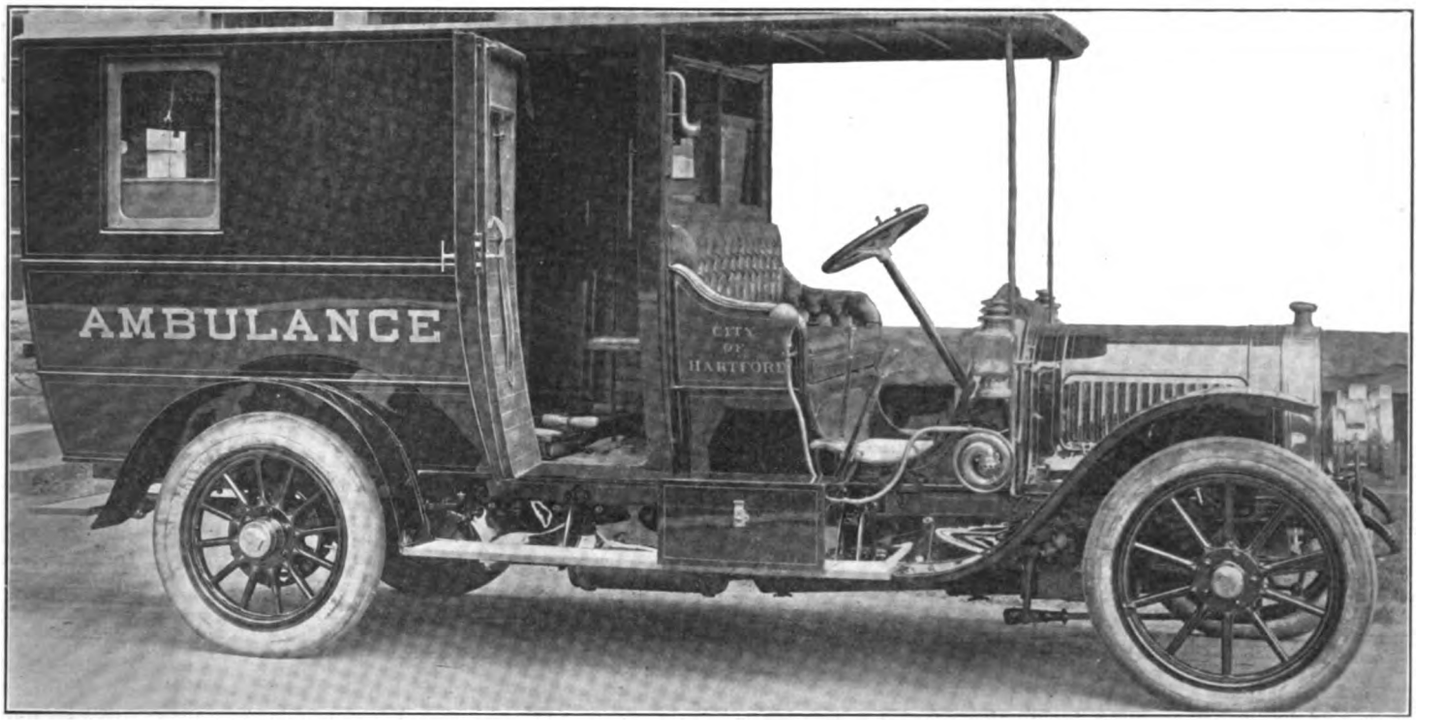
New Pope Model Marked by Departures —Its Unusually Commodious, Accessible and Convenient Interior.

Considerable attention has been attracted locally by the new motor ambulance which was supplied to the City of Hartford, Conn., by the Pope Manufacturing Co., not long since, and which went into active service during the recent Bridge Celebration, on which occasion it gained distinction by accomplishing the successful transportation of no less than eight patients, six of whom were listed as accident cases. In a number of respects, both in regard to the size of the body and its appointment, the machine is a departure from previous practice in the design of motor ambulance, so that its construction is worthy of more than passing attention.

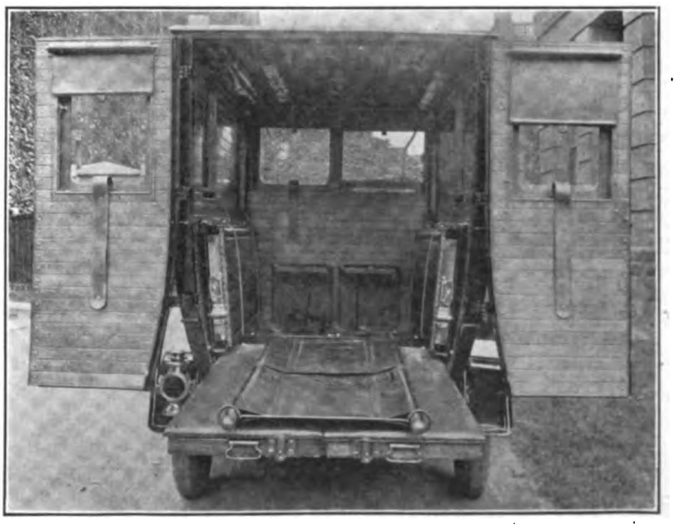
As will be seen from the accompanying illustrations, the body is extremely long, and is furnished with a side door on either side, just back of the driver's seat, in addition to the regular rear entrance for patients. The wheel base is very long, being no less than 130 inches, and the suspension is especially designed with a view to the unusually arduous work for which it is intended. The body is electrically lighted, is furnished with abundant window glass for daylight illumination, has the usual automobile lamp equipment for night work, and carries such tool and emergency equipment as may be required by the 30 horsepower motor.

The interior of the body is 60 inches high, by 36 by 80 inches in floor plan. As will be seen from the two rear views, it is equipped with four beds, leather-covered and arranged to slide in and out on suitable tracks, while by means of a locking arrangement, the beds may be secured when slid into place in the car. Four stretchers also are provided, suspension racks for which are carried on the roof.

The interior furnishings include among other things a medicine chest 31 inches long, fitted with compartments for the safekeeping of the physician's stock, while extra appliances are conveniently located within the interior. There is sufficient room







NEW POPE AMBULANCE IN COMMISSION AT HARTFORD, CONN., WITH VIEWS SHOWING INTERIOR ARRANGEMENT

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for a physician and nurse to ride comfortably within the body, even when carrying the full quota of four patients, while in cases of extreme urgency this number may be increased without uncomfortable crowding. The convenience, controlability and celerity of the motor vehicle for such a purpose readily commends it for this class of work, while the equipment employed in this case and the method of mounting it proves particularly advantageous.

Flower Holders in Car Equipment.

To please the women who are so fond of flowers that they like to have them even when they are in automobiles, the latest fittings for touring cars and limousines are flower holders. They are graceful little crystal cornucopias with a circle of silver at the top and bottom from which the two attaching brackets project. Their form is such that they may be partially filled with water without danger of the latter slopping out on rough roads, and their taper at the bottom makes it possible to force the flower stems in firmly so that the flowers themselves will not jar out even with the most violent movements of the car. The larger sizes are big enough to accommodate bouquets of considerable proportions, such as roses, chrysanthemums, or wild blossoms that may be gathered by the road side, while the smallest sizes are intended for violets or lillies of the valley. The fancy of automobile flower holders had its origin in Europe, and has grown rapidly during the past summer.

Grotesque Design in a Foreign Horn.

Sharp competition for a lion's share of the horn business has led one foreign maker to the extreme of novelty in a design which has just been developed. The usual flare front is replaced by a fearful and "natural" representation of a dragon's head with protruding fangs, while the ordinary convolutions are replaced by a length of plain flexible tubing of tapering section which extends up to the bulb. The reed instead of being located at the throat just back of the bell, is at the base of the tapering flexible section, the latter thus furnishing the necessary resonance.

Butter as a Solvent for Tar Stains.

Butter, of the common or table variety, is alleged by a foreign expert to be the best possible solvent for removing tar stains from the delicate surface of coachwork. Such stains frequently result from driving a newly finished machine over a piece of road which has recently been treated with dust laying compounds, and more often than not, proves very hard to eradicate. For cleansing the upholstery of the car or the clothing of the passengers, the same authority recommends a knot of clean waste dipped in gasolene or benzine and applied by brushing with it the parts to be cleansed.

CRITICIZES THE GASOLENE MOTOR

Professor Kenerson Points Out Its Limitations—Possibility of Eliminating Its Inherent Weaknesses.

Not being at all satisfied with the present types of gasolene motors, Professor William H. Kenerson, head of the Brown University engineering department, made a wholesale criticism of some of their alleged defects, in an address to the members of the Rhode Island Motor League. While admitting that the present gasolene engine is superior to the steam reciprocating engine in comparative efficiency, he finds fault with many features of its construction and operation, among them being the fact that temperature limitations restrict the efficiency, that the impulses should be replaced with a more even flow of power, and that the transmission system in use cause a great loss of energy.

"The idea of the explosion engine was formed 50 years ago," he said, "and 30 years ago the engine took a form similar to the present style. At that time an engine of 2 horsepower weighed 1,400 pounds, or 700 pounds per horsepower. To-day engines of the same general type weigh, I mean those designed to be light, five pounds per horsepower. Notice the great improvement.

"The first traction experiment with an oil engine was made in Providence, on the Cranston horse car line, about 20 years ago. A 2 horsepower engine was tested out, and it was demonstrated then that it took 30 or 40 so-called horsepower to do the work of two horses. The trial was not satisfactory, because the engine was too weak and too heavy.

"Now an ordinary gas engine transforms about 20 to 25 per cent. of the energy into power at the fly wheel. A steam engine transforms 8 to 10 per cent. as an average. The thing which limits us in the transformation of energy into power in an engine is the temperature incident with the transformation. The metal parts of an engine will not stand heat enough to allow of a greater percentage of transformation. And yet we have the very highest grade metals.

"Another limitation is the degree of compression which we can obtain on the gasses. When you compress the mixture in the cylinder, you increase the heat a great deal. The more compression, the higher the temperature. If you compress too hard, you will get pre-ignition, and then you have to stop at once. I have personally seen an automobile engine run with the spark cut off, through pre-ignition.

"Now the reliability and smoothness of running are among the principal features of an engine. Reliability depends upon the proper mixture and its proper use. Smoothness depends upon the evenness of the impulses from the explosion. It is an inherent fault of the present type of gasolene engine, this very powerful impulse given to the piston at more or less regular intervals. Increasing the number of cylinders in an engine is a way to remedy this defect, but not a satisfactory way, for it is merely adding more trouble to a bad thing. The steam turbine and the electric motor, where the impulses are practically continuous and evenly distributed, are samples of the highest type engine for smoothness. A double action gasolene engine, or one where an impulse is given to each end of the piston is altogether too hard to keep cool in a small engine suitable for automobiles. And we must keep the cylinders cool.

"Transmission also is a defect in the present engine. A great deal of power is lost there. I have recently tested at Brown an engine rated 60 horsepower, and found but 35 horsepower delivered at the wheels. Now the metals we use, and the exactness of construction, are nearly perfect, so we can look for no great improvement in the engine from that direction. The designing is perfect, and the assembling.

"We must develop an entirely new type of gasolene engine in order to improve on the present one, and you will agree that there can be improvement in many directions. I believe there is an entirely different kind of gasolene engine which will be developed, still using the idea of internal combustion, or explosion. It will be found possible to remove nearly all the inherent weaknesses of the engines. . . . . And first of all, we must get an engine which will have a more even turning point, and will not deliver such a shock to the piston, with such a tremendous decline in pressure following immediately thereafter."

Concrete Construction for Garages.

Concrete construction for garages has two great advantages, according to an authority in this line. Reinforced concrete, he says, makes it possible to have the floors with few or no supporting columns, thus affording the maximum of free space for moving the cars about. In addition to its fireproof qualities, the concrete flooring is impervious to oils, gasolene or water, so that machines may be washed or stored on the upper floors without any drippings to the floors below.

Cheap Fuel for Pacific Coast Motorists.

As California distillate costs only 6 cents a gallon as against the usual Pacific Coast price of 25 cents a gallon for gasolene, there is much joy among prospective users of White steamers on the Coast over the fact that the 1909 models shipped to that locality will be equipped with burners capable of using the cheaper fuel. It is claimed for the distillate that in addition to its advantage in price, its thermal efficiency is greater than that of gasolene.

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NEW IDEA IN THE DIFFERENTIAL

Application of Leverage System Dispenses with Gearing—The Principle Employed in Various Adaptations.

Many different forms of differential or compensating mechanism have been designed at one time or another, but with few exceptions designers have resorted to the use of toothed gearing for the purpose, practically the only known exceptions to the rule hitherto having been in the case of differential clutch systems. On this account no small interest attaches to a device which has been given some little notice in England recently, in which the usual balancing action is secured as with the ordinary forms of differential, but without the use of gearing of any sort, a simple system of leverage taking the place

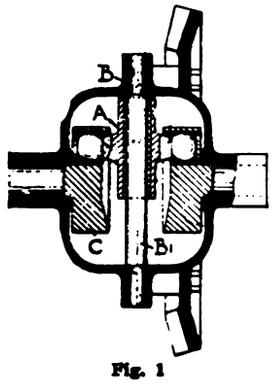


Fig. 1

which toothed gearing ordinarily fulfills in arrangements of the more conventional order.

The result is an unusually compact and simple device, comparing favorably in the matter of construction with the differential clutch and capable of a rather wide variety of application. In place of the usual jack shaft with its pair of bevel pinions meshing with corresponding pinions on the stub shafts, or the several pairs of small spur pinions meshing with larger gears on the ends of the shafts, as is commonly necessary with differential gears, the casing of the device carries a short shaft with its axis at right angles to the axis of the main shaft or axle, while upon it is mounted slideably a small lever which in some manner engages the faces of two discs which form the termination of the stub shafts. Variations in the arrangement are brought about by altering the method of connection between this intermediate member and the shaft ends. The principle is the same in any case.

The principle of action, though somewhat obscure at first, develops upon study. In its simplest form the arangement would comprise merely a short bar loosely mounted on the transverse shaft with its rounded ends engaging cylindrical depressions in the faces of the two discs keyed to the ends of the differential shafts. Power applied to the carrier or housing member, would of course cause both shafts to be driven uniformly so long as they presented equal resistances. As soon as differentiation commences, however, relative motion in opposite direction would be induced in the two shafts, which would be accommodated by the movement of the central and connecting lever or beam.

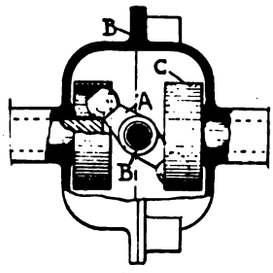


Fig. 2

In order to accomplish this, the beam would be given a combined movement of oscillation about its axis—the transverse shaft—and one of lateral movement along it. The intermediate member in its rocking and sliding motion thus secures exactly the same effect as that produced by the more familiar methods of gearing, and the complete characteristics of the regular differential in every respect are manifested in the complete device.

In the various adaptations of the principle which have been designed, the use of the connecting lever having rounded or spherical ends, is sometimes supplanted by the use of spherical crank webs or eccentrics, while the intermediate member is hollowed to corresponding shape to receive them. This variation also is employed with plain eccentrics on the axle ends, mounting bushings having spherical exteriors which fit the corresponding recesses on the intermediate connecting part.

Several of the possible arrangements are shown in the accompanying illustrations.

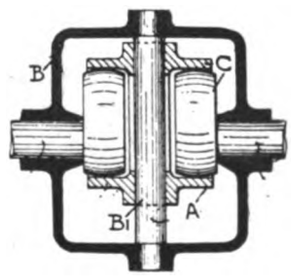


Fig. 3

In Fig. 1, the most elementary practical form is shown as adapted to the ordinary type of differential housing with bevel gear drive. The short transverse shaft, BB¹, is here shown mounted in the housing, while loosely mounted upon it is the connecting lever, A, the rounded ends of which interlock with corresponding recesses in the discs, C. The part A, is shown at one end of its travel. How its movement along its shaft is combined with a rocking movement about it in producing the desired balancing effect between the two shafts is seen to better advantage by reference to Fig. 2, where much the same arrangement is shown mounted in a different form of housing. The indices refer to the same parts as in the previous case.

In the variation shown in Fig. 3, the construction is changed to give heavier parts and more rigid and unyielding action by the reversal of the former design and the use of eccentric members on the shaft ends, which have spherical contours, while the connecting member is formed with large cylindrical openings to receive the eccentric members. While the action is the same in this case as in the preceding, the more massive design will be observed to be of advantage where very heavy vehicle work is in consideration.

In the arrangement shown in Fig. 4, the preceding plan has been followed with a little more elaboration by the insertion be-

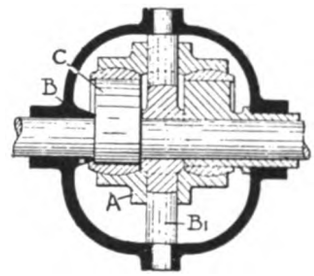


Fig. 4

tween the eccentrics and the openings in the connecting member, of bushings which are bored cylindrical inside, but shaped to the necessary spherical form externally. This arrangement, of course, serves to simplify the rubbing motion between the rocker or connecting link and the eccentrics, thereby tending to distribute the wear over an increased area of surface and prolong the life of the parts. The system is the invention of Reginald Donkin and was described in somewhat extensive detail in a recent issue of the Automotor Journal, London.

In this connection it is rather to be wondered at that with all the varied mechanical possibilities which might be aplied to the differential mechanism, so few, relatively speaking ever have been brought to notice in practical service. Indeed, saving the spur and bevel types, practically none have seen the light, while only a limited number of the possibilities of the differential clutch have been worked up into practical form. Were the differential in common use perfectly satisfactory, this would not be so remarkable. As it is, it would appear that designers as a class had been rather inclined in the past to let well enough alone rather than to "take chances" on mechanisms of unknown characteristics.

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MAKING SMALL SALES PAY WELL

Enterprising Shoe Salesman Gathers Scattered Trade by Aid of an Automobile —His Story of Success.

Of the utility of the motor vehicle for the purposes of the traveling salesman, much has been said. Specific instances in which a saving has been secured in this way, however, are somewhat rare. On this account some little interest attaches to the experience of A. B. Brown, of Grand Rapids, Mich., salesman for a local shoe manufacturer. During the past six months, Brown has been using a Cartercar with a specially built body and in covering some 7,000 miles, has been enabled to keep his sales up to the average, despite the dullness of business in general, because of his ability to reach isolated customers readily and handle their trade with despatch. He says:

"I have been a salesman for a number of years, selling leather. I wanted to get to selling shoes and I wanted to sell in Michigan, but there was no territory that was not already covered, I was told. I believed that the company was mistaken, however. I secured a map and a gazetteer and proceeded to show them little dealers here and there, and proposed calling on them.

"The company was willing for me to go ahead, so I secured a team of horses, a wagon and a boy to care for them, and got busy. Orders came and I made it pay. I could get plenty of business, but the orders were all small. The only way I could increase my sales was to see more people.

"Finally the firm bought a car for me. I covered Michigan from lake to lake and from Indiana to as far north as the Saginaw valley. I make the territory with my car about every sixty days. I never stop for the weather.

"When I drove the team and kept the boy, my expenses ran $40 a week. With my automobile they do not average over $20 a week. My repair expense for the season has been a trifle less than $100, which includes two new tires which I now have. My automobile is far more reliable than a team of horses ever were. While no sale is large, I can call on a lot of small dealers in a short time and the total adds up nicely, showing a profitable business.

"In fitting up the car, I had the rumble seat removed and a case fitted on as shown in the picture. This is fitted with drawers, each containing a certain class of shoes. If the dealer is interested in a certain line, I take that drawer into the store and it takes about a minute to show him the entire line. In 15 minutes I have the order, the shoes replaced and am bidding him good-day."

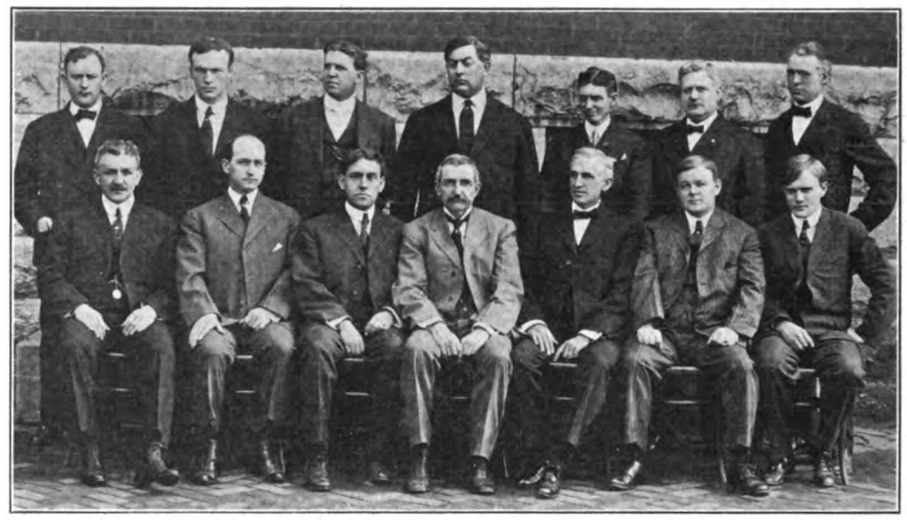


SHOE SALESMAN'S SPECIALLY EQUIPPED CARTERCAR

WAVERLEY MEN IN CONFERENCE

Officers and Salesmen Meet at Indianapolis for Exchange of Ideas—Blending of the Old and New Elements.

This is the season of "conferences." They are being held all through the industry among the heads of firms, the heads of departments, among the members of the various subsidiary forces. Perhaps none of these assemblages are of more definite importance to the parent concerns than those occupying the attention of the selling forces. One such has just been held by the salesmen and officers of the Waverley Department of the Pope Mfg. Co., at Indianapolis, Ind. It was heralded as the most successful ever held, and assumed unusual significance because of the recent change in the status of the concern. It was a blending of the elements of the new and the old.



PARTICIPANTS IN THE WAVERLEY "CONFERENCE"

The accompanying picture shows the officers of the company and the members of the selling forces there gathered. Reading from left to right, those seated in the lower row are: H. W. Goodman, Charles M. McAlpin, purchasing agent; Herbert H. Rice, vice-president and manager; Carl von Hake, treasurer; William B. Cooley, president; Wilbur C. Johnson, secretary; Roy A. Potts, sales manager.

Those in the top row, from left to right, are: E. K. Shugert, R. T. Davis, P. W. Eigner, K. W. Brewer, H. W. Dickerman, E. R. Vincent, W. S. Gilbreath.

Bill Posting Firm Adopts Motor Car.

A unique application of the commercial possibilities of the motor car has just been brought to light in the recorded sale of a Franklin air-cooled truck to the C. J. Gude Co., a firm which handles a vast area of out-of-door advertising space for the education of suburban railway and trolley travelers.

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AUTOMOBILE LAW COLORS POLITICS

Why Jersey Club and Trade Associations Entered a Senatorial Fight—Demand for Fairer Legislation.

No small stir has been created among the ranks of New Jersey motorists over a little incursion into politics undertaken prior to the recent election by a joint committee acting on behalf of the Associated Automobile Clubs of New Jersey and the New Jersey Automobile Trade Association. The incursion took the form of a circular letter sent out broadcast to motorists giving the views of Senator Colby and Harry V. Osborne, the Democratic candidate, on the question of a revision of the motor vehicle law. No doubt could be left in the mind of the reader as to which candidate the committee wished to favor, nor that Colby, who though he evidences an abundant sense of fairness in other matters, appears to have small idea of justice in matters where motorists are concerned, was subject to attack.

Immediately after the sending out of the letters prominent members of the federation began to issue denials of the committee's authority in taking its stand, a counter-current of newspaper criticism was induced and the inevitable factional movement sprung up. In answer to the criticism of the committee's action, W. C. Crosby, acting president of the associated clubs issued a defensive statement showing the underlying cause to be an earnest desire on the part of the motorists to secure a reformation of the present repressive law. He said in part:

"Senator Colby, in an interview prior to the exchange of the letters sent with circular letter to the automobilists, made the remark voluntarily, in response to an expression that the automobilists did not desire to enter into politics, but desired to get fair and equitable laws by personal representation and argument, 'the automobilists will have to go into politics in order to get what they consider right.' Senator Colby also voluntarily gave expression to the policy or spirit, 'that the automobilists were entitled to know where the candidates for office stood in connection with the several amendments desired by automobilists and would be pleased to give his expression on the various amendments'—which he did in response to the letter sent to him by the chairman of our committee, and the committee are unanimously of the opinion that Colby expected that the letter would be used for what it might be worth.

"The committee deemed it best, in view of the letter and the spirit of the interview, to place the matter squarely before the automobilists, that they might know where Colby stood—and we still believe that Colby wanted the automobilists to know where he stood—and leave the matter in their hands. No appeal for votes was made, but an honest, frank statement for the edification of the automobilists as to where the candidates stood on the desired amendments. . . . .

"As for the amendments we ask for, or are fighting for, they are concisely as follows: We want lights on all vehicles at night. We want reciprocal privileges extended to non-residents that non-resident automobilists may exercise their privilege to travel through or over the roads of a neighboring state without taxation. We want a speed regulation that when enforced will secure to all users of the highway safe and happy enjoyment of all privileges of the highway, and we do not want a law which makes every automobilist a criminal and subject to the pleasure or whim of every justice of the peace in the state who desires to arrest automobilists and filch from them small fines and large costs to his own pecuniary benefit.

"Regarding lights on vehicles there should be no discussion, yet we find our legislators, while favorably inclined personally, vote against it, but claim they are and will work for it." . . . .

A similar stand was taken by J. H. Wood, secretary of the joint committee who carried the argument even further.

"Politics has not in any way entered into the consideration of this committee," he declared. "Our demands upon the legislature have been made for principles and for policies which can only be called for by good business judgment. We believe that an industry, which according to statistics which have been gathered by the Trade Association has resulted in a business of over twelve million dollars in one year to the manufacturers and tradesmen of Newark, should receive every consideration at the hands of our legislators. . . . . Should not, therefore, our great manufacturing interests, such as leather, paint, varnish, drop forgings, radiators, battery supplies, wheels, tires, etc., be considered by our legislators in the making of such laws as will benefit them, as well as for revenue for the maintenance of the highways over which these materials are to be carried?

"While the New Jersey license on our cars will carry us from New Jersey to the furthermost point of Maine, entitling us to every courtesy and protection and right in the use of the highways of other states, the non-resident from these same states as soon as he crosses the line into our state is a criminal until he has increased the treasury of the state of New Jersey by paying $14, and is compelled to go in person without any identification to make this registration, and is furthermore compelled to appoint the secretary of our state his attorney. . . . .

"As to Mr. Colby's contention that there are 100 automobiles coming into this state to one going out of it, I take serious exception. Unfortunately, there is no way of getting at definite facts in this matter, but we might take one or two facts for illustration: There are probably no less than one hundred automobiles daily go from Essex and Hudson counties during the summer months to Coney Island. During the Vanderbilt cup race on Long Island over 2,000 automobiles crossed the ferry on Friday afternoon and evening from Jersey. Just imagine this vast throng of machines being held up when they crossed the ferry and compelled to make personal application for a license, pay $14 and give the Secretary of State of New York power of attorney. We not only believe that we are right, but we believe that the community in general agree with us that we are right in this principle that a limited tourist's privilege should be extended to non-residents to come into our state the same as is in effect in New York state and the New England States."

While motorists outside the state and others conversant with the situation will be likely to view the movement with no small interest and appreciation for the activities of the New Jersey owners and dealers, they will probably agree in regretting that this attack should have been centered upon such a man as Colby, while that star player to the galleries and author of the obnoxious measure, Senator Frelinghuysen, who maintains a home in New York City, but continues to vote in New Jersey, remains untouched and thus far, unaffected.

Ohio Law Bothers Kentucky Visitors.

Because Kentucky has no automobile license law a queer situation has arisen in connection with those of its residents who own machines and wish to operate them in Ohio. The law of the Buckeye State provides that residents of other States who conform to the regulations governing them at home will not be required to take out a license to use their machines within the Ohio borders, the registration and tag of the home state being sufficient. But when H. Clay McKnee arrived in Cincinnati from Sterling, Ky., he was stopped by the police. He explained his position satisfactorily there, but was again stopped at Dayton, O., after which he appealed to Dayton's mayor to know what he should do. He was advised to head for Columbus, the state capital, and get an Ohio license in order to avoid further trouble. Upon the understanding that he would do so he was permitted to proceed.

Kansas City Park Board Favors Motorists.

A liberal attitude toward motor cars has been taken by the authorities of Kansas City, Mo., and as the result of a recent meeting of the park board, automobiles will be allowed to go at 18 miles per hour. Furthermore, the machines may now use the Cliff drive, which has heretofore been reserved for horse-drawn vehicles.

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COP CONVICTED FOR PISTOL PLAY

Glencoe's Celebrated Case Turns Against Special Policeman—Shooting at Automobilists Declared a Crime.

Shooting at motorists will no longer be one of the playful pastimes of Frank H. Moor, the special policeman of Glencoe, Ill., who on July 11 fired a bullet at the automobile of T. J. Henderson and struck a button on the dress of Miss Buena Stribling, a passenger in the machine. Moor has been declared guilty of assault with intent to do bodily harm and is now awaiting the outcome of his attorneys' efforts to get a new trial before receiving the pronouncement of his punishment from Judge Mack.

The trial took place in Glencoe last week, and after the evidence was all in, the jury took five hours to come to a decision. It is understood that almost half the jurors wanted to bring in a verdict that would have more serious consequences for the defendant, as he had been charged with assault with intent to kill. Moor, on his first arraignment before the local magistrate at Glencoe right after the shooting, was exonerated, but the state attorney's office took up the case with the result that it was brought before the grand jury, where an indictment was obtained.

Miss Stribling, who so narrowly escaped death from Moor's bulet, was one of four occupants of Henderson's car as it was passing through the town. The officer called upon Henderson to stop, on the ground that he was violating the speed ordinance, but Henderson refused to do so. Moor then took three shots at the machine with the purpose, he declares, of puncturing the gasolene tank. But the shots went into the woodwork of the tonneau instead, one of them striking Miss Stribling in the back, but being harmlessly deflected by a large button. The tonneau itself was exhibited in court.

In his defense Moor asserted that he was an expert revolver shot and that he could kill running rabbits at 100 yards with the pistol, so that he had felt safe in shooting at the gasolene tank. Furthermore, he said that the village attorney had advised him to shoot in case automobilists would not stop.

The trial made it clear that neither village constables nor officers of any other description have the right to shoot at a misdemeanant, or to throw clubs or commit other like assaults. A police officer many only shoot at a felon, and then only where there is grave danger of the latter's escaping. Exceeding a speed limit is a misdemeanor, according to the prosecution, and a policeman who shoots at an automobile party is as much liable to the law as any private citizen.

The case has become one of the most celebrated in the local history of motoring, because of its connection with the war waged by the Chicago Automobile Club against the town authorities of Glencoe for the maintenance of a system of trapping motorists, which was alleged to be unlawful.

Philadelphia Presses for Motor Bus Taxes.

Accused of owing Philadelphia from $6,500 to $10,600 for municipal licenses and pavement tax, the Auto Transit Co. of that city, which has been operating motor buses on Broad street, is threatened with legal proceedings which will stop the running of the machines. Under the law it is necessary that licenses be taken out every year, at the rate of $100 for each omnibus, which for the 25 machines operated by the company amounts to $2,500. It is alleged that no licenses have been taken out by the company for this year, the last payment being in July of last year for the 1907 period. In addition to the license charge the company is obliged to pay 2 cents per square yard per annum for each square of paved street on which its buses operate, which amounts to about $4,000 or $8,100 for the current year, according to how it is figured. The city claims that the charge should be for the whole width of the street, while the company maintains that the charge should only be for the side strips where its machines run, and not for the center. The city, however, has given official notification that the company must pay at least the smaller amount at once or its vehicles will be stopped. Peter J. Hughes, president of the company, intimates that a reorganization will take place shortly.

Interurban Wheel Tax Agreement.

Since both Evanston and Chicago, Ill., have recently instituted the collection of a "wheel tax" on all vehicles in their borders, several owners who divide their time between the two have been put in the position of having to pay in both places. Their indignation at having to pay a "wheel tax" in even one place was of considerable warmth, but the prospect of having to contribute to both municipalities brought it to an extreme temperature. Matters have been fixed, however, so that Evanston and Chicago will hereafter acknowledge each other's tax tags, so that the owner who has paid in one place will not be required to pay in the other.

Charlotte Refuses to Banish Garages.

If Alderman Chambers, of Charlotte, N. C., could have his way all the garages in town would have to move outside the municipal fire limits. He introduced an ordinance to that effect before the board of aldermen, but the latter, at a meeting on the 2d inst., rejected it promptly as too severe. The board indicated, however, that it will shortly pass a set of regulations governing the conduct of the local garages.

ENFORCING MASSACHUS

Highway Commission Deal Two Cases in Four Mont fenders Were Dealt

In explaining the work setts Highway Commissi licenses in the State, Co Sohier, a member of th cently reviewed the he commission together with their resu "During the four months of July, August, September and October," he said, "the Highway Commission has given 62 hearings in automobile cases. Eleven of these hearings related merely to the reissuing of licenses which had been revoked or suspended for various causes. There were eight hearings on the complaint that automobiles were going too fast around corners, two for not stopping when signalled by an officer, seven for improper operation, generally for passing upon the wrong side or crowding in between teams. Five complaints were because the automobile was taken out without the consent of the owner, and in all of these the license of the chauffeur was revoked. There were five hearings on complaints of reckless operation.

"The law in Massachusetts now provides that when death ensues from an accident in which an automobile is involved, the license of the operator shall be suspended and shall not be reissued unless, after investigation or upon a hearing, the commission determines that the accident happened without serious fault on the part of the operator. Eight licenses have been suspended under this statute and there have been only three hearings requested. In two of these the license was returned, as it was evident that the operator was without serious fault; one was refused, and no application for reissue has been made on the part of the others."

Movement to Check Glass Throwing.

Big posters announcing a $25 reward for the arrest and conviction of persons throwing or leaving glass or nails in the public highway are being distributed and pasted up by the New Jersey Automobile and Motor Club, of Newark, N. J. All of the garages are being supplied and the bills are also being prominently displayed at conspicuos places not only on the city streets, but on roads in the surrounding country.

Motor Cars Link Two Texas Towns.

Denton and Krum are glad that automobiles were invented. They are two Texas towns, which after long pleadings in vain for a connecting railroad, now have a motor vehicle line which links them. Dallas capitalists are back of the enterprise.

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$25,000,000 ASKED FOR ROADS

Bill Providing for System of Trunk Highways Introduced in Vermont Legislature—Outline of the Plan.

An appropriation of $25,000,000 is being asked of the Vermont legislature for a series of trunk highways through the State. The bill has been introduced by Representative Howe, of Bennington, and has the strong support of all the automobilists. His plan provides for two main highways running north and south the entire length of the State and six intersecting lines running east and west. One line would start at Pownal, on the Massachusetts State line, and run through Bennington, Rutland, Addison, Chittenden and Franklin counties, touching the more important places, such as Bennington, Manchester, Rutland, Middlebury, Vergennes, Burlington and St. Albans. Another would start at Vernon, on the southeastern boundary, and follow the Connecticut river as far as Barnet, then branching off through St. Johnsbury, Lyndon and Barton to Newport.

One cross line would run from Bennington to Brattleboro, another from Manchester to Springfield, a third from Poultney to White River Junction, the longest one from Burlington along the Winooski valley to Montpelier, thence through Orange county to White River Junction; the fifth from Burlington through Lamoille county to St. Johnsbury and Lunenburg, and the sixth from Alburgh, in Grand Isle county, across the northern part of the State, through Richfield, Troy and Newport, to some point on the New Hampshire line.

The original plan for this system of roads was advanced some years ago by Dr. W. Seward Webb, of Shelburne, but at that time it evoked considerable opposition from the farmers on the ground that Webb wanted it simply as a means for getting better roads for his coaching parties, of which he was known to be very fond. Similar objections that motorists will be the chief beneficiaries are being made at present, but the agricultural interests as a whole seem well disposed toward the plan. Howe's bill provides for the expenditure of $150,000 a year until the roads are completed.

Kulp Held to be Very Culpable.

Imprisonment as well as a fine was imposed on Ellis H. Kulp, a demonstrator for a New York automobile concern, in the court of special sessions last week. The sentence was for 20 days in the city prison and the fine was $150. The severity of the sentence was due to the fact that after being arrested for speeding, Kulp twice escaped the motorcycle policeman and tried to run away. His first dash for liberty was in Van Cortlandt Park, where he was caught and held up at the point of a revolver. After apparently surrendering, he again started his car at full speed, leaving the policeman in the lurch. He was finally captured the second time and taken to jail by force. Simon R. Weil, who was in the car with two women, made an affidavit to the effect that in trying to get away, Kulp drove so fast that the women became hysterical. This affidavit, together with letters from Commissioner Bingham and the Automobile Club of America, asking that Kulp be made an example of, were read to the court before sentence was passed.

Demands Enforcement of "Lights" Law.

Enforcement of the ordinance passed ten years ago in Chicago through the efforts of the cycling clubs and requiring all vehicles to carry lights at night, is being sought by the Chicago Motor Club. The ordinance has never been enforced so far as horse drawn vehicles are concerned, but the club thinks that it should be, as many accidents of recent date are directly due to the fact that wagons and buggies have been without lamps. Carl J. Metzger, chairman of the grievance committee, will undertake the work of compelling the city to see that the ordinance is lived up to and also that the rules of the road, as set forth by Chief of Police Shippy are observed by horse drivers. It is Metzger's idea to oblige all vehicles to carry both side lamps and a red light in the rear.

Automobile Club Improving Streets.

When the citizenry of Galesburg, Ill., see a few of their streets being relaid with the most modern concrete pavement in place of the present rough succession of bumps and mud holes which now exist in some parts of the municipality, and learn, further, that the new pavement is not costing the city government a cent but is being paid for by the Galesburg Automobile Club—perhaps they will feel kindly toward motorists and will be shamed into putting the balance of the pavements in such good order that cars may go back and forth on them without risk of damage. At any rate, the club has it all figured out that way and is circulating a subscription list among its members and some of the property holders, to carry out the plan.

Springfield Club May Establish Traps.

Hinting to visiting tourists that they should "be good," the Automobile Club of Springfield, Mass.. has printed cards for display in hotels and garages calling upon all motorists to use the highways in a safe and sane manner. It is pointed out that failure to observe the request will result in the establishment of speed traps by the club. Upon their own initiative the directors of the club have decided that this the the only alternative, and they are preparing to put such a plan into action unless the warning notice takes effect.

JOYLESS END OF JOVIAL RIDE

Taximeter Cabby's All-Night Job Results in Sensational Shake-Down—Tires and Passengers "Busted."

Having carefully schooled himself in taximeter cab drivers' etiquette, such as never looking back to see what his passengers are doing, never being surprised at anything, and never expressing complete satisfaction with the tip, Pat Shields felt qualified to range New York City as the real thing, particularly as he had a shining new machine. Upon driving up to the curbstone to take his stand he was hailed by three jovial visitors from Center Moriches, L. I., whose uncertain legs were hardly capable of heavy transportation service for the rest of the evening. They piled in and told Shields to keep going and show them the town. Frequent tappings on the glass instructed him to pull up with equal frequency before brilliantly lighted entrances where good cheer and carelessness in a variety of liquid forms and an equal variety of enticing combinations, were bought as so much per round.

As the white milk bottles began to appear on window ledges and steps, the cab whirled uptown, toward the all-night gaiety resorts near 110th street, the upper boundary of Central Park. The machine ran along the western side of the park, until the jovial visitors insisted that Shields turn in at an entrance gateway that appeared. With a swerve that sent the unsteady passengers in a heap to the floor, the driver headed through the gate, into the park blackness, and after a moment of smooth running the cab leaped out into empty space. Its flight was brief, however, and the heavy machine came down with a bump that burst three tires, and continued to pound its way down to the bottom of the broad flight of stairs which Shields had mistaken for the road. Shields was knocked from his seat and the passengers were shaken out, one by one, on the stone steps, later gathering themselves up in a flower bed into which they had rolled. The cab disappeared over the roadway and across a lawn, and while Shields went looking for it, the visitors, with arms about each other's necks, stumbled toward a distant white light corner. There it was that the driver later found them, drinking champagne and hailing his appearance with joy. He did not want wine opened in honor of his being alive, but demanded $20 fare. His passengers said he had shaken them down enough already, and compelled him to take them to the police station. Shields related his trouble and said that $20 would not even cover the cost of the tires that had burst, but the good offices of the police sergeant finally induced him to accept the trio's remaining $11 and to let it go at that.

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The Week's Patents.

895,030. Spark Plug. James Lang, Cavalier, N. D. Filed Nov. 25, 1907. Serial No. 403,774.

1. A spark plug of the character specified, comprising an outer casing, formed at its inner end with a laterally extending finger, a central tube arranged within the casing, the outer end of the tube being screw threaded and projecting beyond the outer end of the tube to retain the same in position, a sleeve of insulating material arranged between the casing and tube, the outer end of the sleeve being formed with an out-turned flange to engage the adjacent end of the casing, a central conducting core extending longitudinally through the plug, the inner end of the core being formed with a laterally extending finger, a sleeve of insulating material arranged between the conducting core and tube, and electrical connections for connecting the spark plug with a source of energy.

895,111. Vehicle Wheel. Nicholas Schenk, St. Louis, Mo. Filed Dec. 22, 1906. Serial No. 349,039.

1. A vehicle wheel comprising a hub, an inflated tube located upon said hub, plates located on each side of the inflated tube, a solid rubber tire supported by the plates, rollers carried by the plates to be adjusted to contact with the tube and means for imparting motion to the rim to coact with the movement of the hub, substantially as specified.

895,127. Vehicle Wheel. Gabriel G. Trannoy, Charenton, France. Filed May 31, 1906. Serial No. 319,633.

1. A vehicle wheel comprising a rim portion having side members projecting inwardly around it and spaced apart to produce a chamber between them, a hub having a disc-like member projecting in annular arrangement from it and fitted for edgewise sliding movement in said chamber, springs affording connection between said disc-like member and the rim portion, said disc-like member being of less thickness than the chamber between the side members, and wearing plates of anti-friction metal held upon and projecting from the opposite faces of the disc-like member and contacting with the inner faces of the side members to hold the disc-like member out of contact with said side members.

895,113. Shock Absorber. James A. Scott, Los Angeles, Cal. Filed April 11, 1907. Serial No. 367,704.

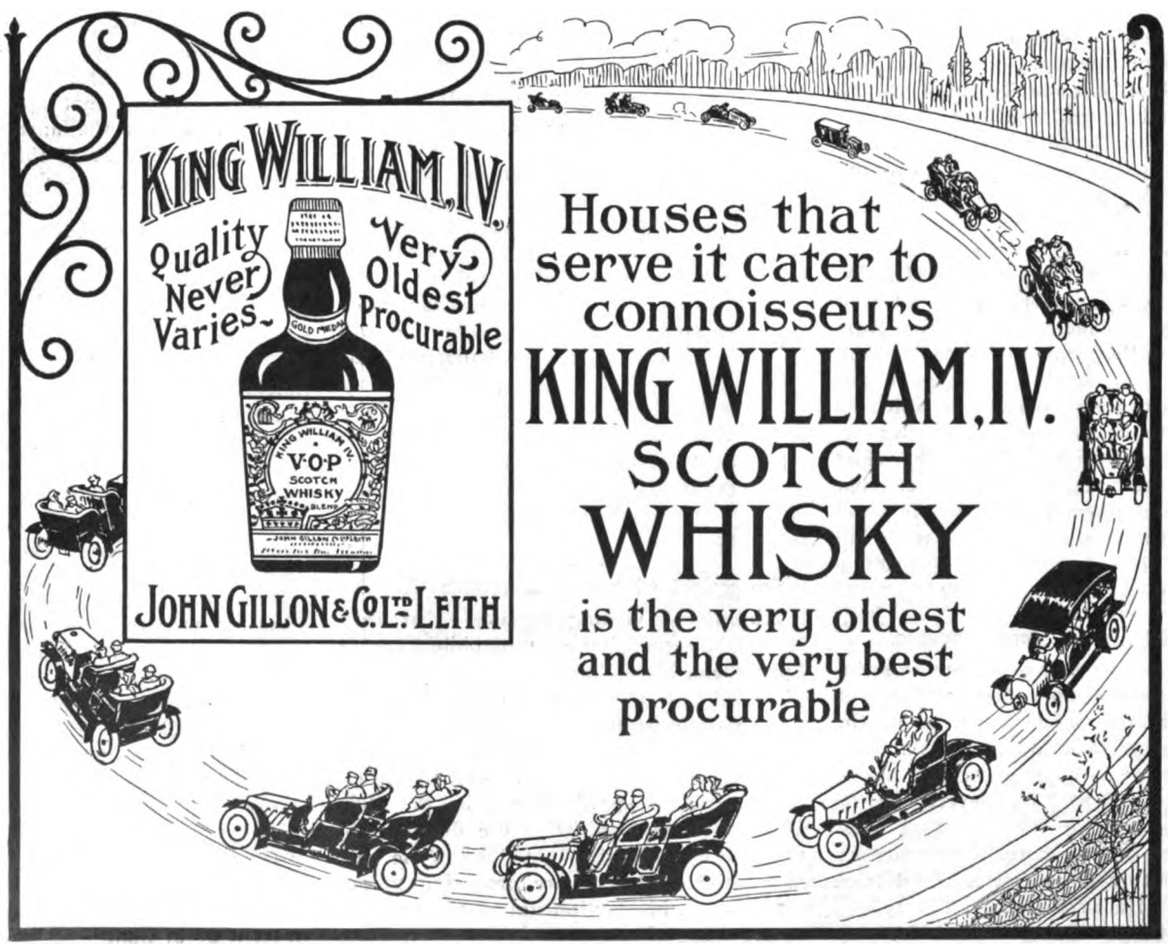
1. A shock absorber comprising a pair of concentric non-revoluble conical discs, a rock arm having a hub conically recessed in opposite sides and lying between said discs, a washer between each disc and the adjacent conical recess of the hub, yielding means for contracting the space between the discs to produce the desired pressure between the washers and hub and discs, said discs being supported by one of the relatively moving parts of the vehicle, and a cushioning link connected at one end to the end of said rock lever and at the other end to the other relatively movable part of the vehicle.

895,225. Spark Plug. Willis L. Ash, Lansing, Mich. Filed Oct. 11, 1905. Serial No. 282,244.

1. A spark plug embodying an insulator, an electrode having threaded ends extending through an opening provided therefor in said insulator, a cap having a closed end and formed with a threaded opening receiving one end of said electrode, a sparking point projecting beyond the outer face of said closed end, said cap at its open end being formed with an annular cup shaped recess which merges into said threaded opening of the cap whereby a downwardly hanging protecting flange is formed an elastic cushion seating in the said recess, a second cap having an opening through which the opposite end of said electrode passes, an annular dish shaped spring washer perforated and receiving said insulator and disposed between the last named end of the insulator and the end of said second cap, and a securing nut on the electrode bearing against said second cap.

895,245. Elastic Suspension for Vehicles. Claude L. Le Duc and Louis Garchey, Paris, France. Filed June 18, 1906. Serial No. 322,296.

Boxes for the elastic suspension of vehicles which leave the body of the carriage free to displace itself in any direction serving merely to limit and weaken the displacements of the body, comprising in combination a box rigidly connected with the axle, a cross bar rigidly connected with the body of the carriage, traversing said box, discs fixed to the upper and lower surface of said cross bar inside the box, segments forming ball bearings, vertically arranged on the periphery of the piston formed by the two discs, balls in said bearings running on the inner surface of the box, elastic means between the segments and the cross bar and elastic buffers between the upper cross bar disc and the top plate of the box on the one hand and between the lower cross bar disc and the bot-



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tom plate of the box, substantially as described and shown and for the purpose set forth.

895,542. Transmission Gear. James F. Duryea and William M. Remington, Springfield, Mass., assignors to Stevens-Duryea Company, Chicopee Falls, Mass., a Corporation. Filed July 15, 1907. Serial No. 383,772.

1. In a sliding gear transmission mechanism a casing, sliding gears mounted therein, a gear sliding lever having forked arms, the spread of which is greater than the diameter of one of the sliding gears, there being an opening through the casing inclosing the gears through which said lever may be dismounted from its bearing, whereby it may be passed over one of the gears with which it engages to remove it from the casing.

895,554. Vehicle Wheel. Andrew Graff, Wellington, Kan. Filed April 16, 1906. Serial No. 312,027.

1. A vehicle wheel having a helical rim which is wrapped with a small gage wire fitted in the spiral channel formed between the whirls of the helix.

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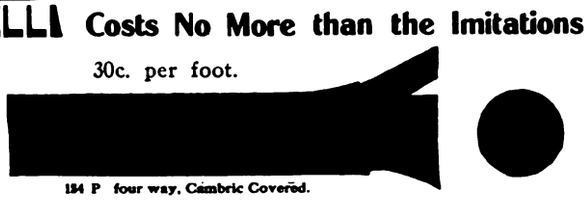
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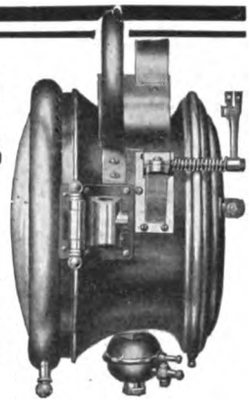
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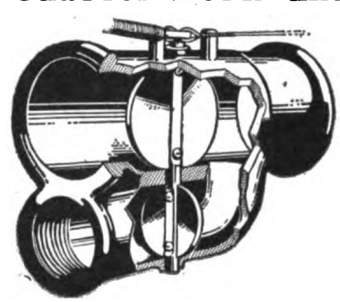
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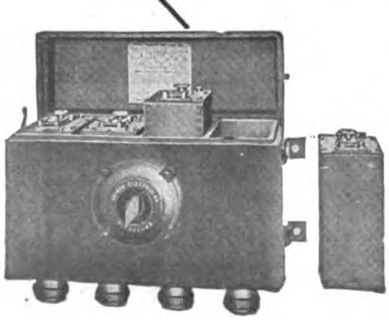
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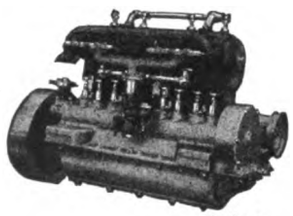
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RAINIER MOTOR CAR COMPANY,
Broadway, cor. 56th St., New York.

MORGAN & WRIGHT TIRES ARE GOOD TIRES

it's the little things in life that make it worth while. Just as true with the Auto. Insist upon

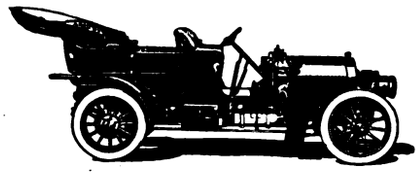
THERMOID BRAKE LINING

Type C.

PENNSYLVANIA

"FIFTY"

We had the **best** car in America. We thought for a long while how to improve it and **left it alone. You think that over.**



Touring Car, Baby Tonneau or Roadster bodies, with double ignition, $3,000.

Pennsylvania Auto Motor Co.

BRYN MAWR, PENNSYLVANIA

A DUPLICATION, NOT AN IMITATION OF LEATHER.

AUTOFOID is a peculiar name. Try to remember it when next you are ordering material for tops, cushions, etc.

AMERICAN LEATHERETTE MFG. CO
Buffalo, New York.

ESTABLISHED 1844.

SCHRADER

UNIVERSAL VALVES

TRADE MARK REGISTERED APRIL 30, 1895.

The Standard American Valves for Automobile, Bicycle & Vehicle tires

Manufactured by

A. SCHRADER'S SON, INC.
28-32 Rose St. New York, U.S.A.

Stoddard-Dayton

ONE Quality for ALL Models
ONE Price for ALL Buyers

Write for 1909 Catalog.

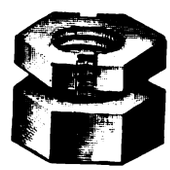
THE DAYTON MOTOR CAR CO.,
Dayton, O.



A Necessity On Automobiles—WHAT?

COLUMBIA LOCK NUTS

CANNOT shake loose. They add an important factor of safety and give a feeling of security. Columbia Lock Nuts are the best kind of accident insurance. Used by most makers of the best cars and by leading railroads, etc. Send us a two-cent stamp, size and thread of the bolt, and we will forward a Columbia Lock Nut for it.



COLUMBIA NUT & BOLT CO., Inc., Bridgeport, Conn.

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ITLOCK RADIATORS
KE, EXHAUST AND WATER PIPES
Co. Hartford, Conn.

Users of **INVADER OIL**



THE OIL THAT GRAPHITIZES
are responsible for its popularity
YOU NAME THE CAR WE'LL NAME THE GRADE
MADE ONLY BY
CHAS. F. KELLOM & CO
113 Arch St., Philadelphia
Boston Branch:
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Garford Motor Car Co.,
1540 Broadway.

WE WILL NOT

accept your contract unless we can give you the delivery you require. We will not accept more contracts than we can fill with proper attention to each. We make Pressed Steel Frames and Automobile Stampings.

THE HYDRAULIC PRESSED STEEL CO.,
Cleveland, Ohio.

Why pay high prices
FOR ALUMINUM
Axle Covers, Engine Crank Cases, Transmission Cases.
Have these made of Pressed Steel
JUST AS LIGHT
Stronger. Much Less in Price.
Send Prints for Estimates.
A. O. Smith Co.
243 Clinton Street, MILWAUKEE, WIS.

Volt Ammeter $5.00, Ammeter only, $3.50



How Are Your Batteries?
A CONNECTICUT VOLT AMMETER WILL TELL YOU
Guaranteed, and the price is right, send for catalogue and trade discounts.
CONNECTICUT
TELEPHONE and ELECTRIC CO., Inc.
Meriden, Conn.

$11,000,000
worth of experience behind the new
$1,500 MITCHELL
This price includes $300 worth of extra automobile value not included in other cars selling at this price. Learn what it is. Write to-day for detailed description.
MITCHELL MOTOR CAR CO.,
572 Mitchell St., Racine, Wis.
Standard Manufacturers A. M. C. M. A.

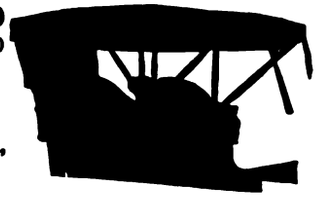


McCORD
LUBRICATORS — RADIATORS
"Marks of a Good Motor Car"
McCORD COPPER-ASBESTOS GASKETS
McCORD & COMPANY
NEW YORK—Hudson Terminal, 30 Church Street.
Old Colony Building, CHICAGO.

The Acme
JUSTIFIES ITS NAME
THE ACME MOTOR CAR CO.
Reading, Pa.

Studebaker
Gasoline and Electric—for Pleasure and Business
Studebaker Automobile Co., South Bend, Indiana

SPRINGFIELD TOP (Pat. 1895)
Aluminum Bodies
SPRINGFIELD METAL BODY CO.,
306 Birnie Ave.,
Springfield, Mass.





Steel Tires
Full of Air.
Tire expense cut in two.
Cannot Blow Out, Rim Cut or Puncture.
As Flexible as Rubber
Anti-Skid.
That part of a tire with a blowout or a rim cut in it will last longer than any other part if encircled by a few sections of steel.
Thousands in use.
Kimball Tire Case Co.
172 Broadway
Council Bluffs, Iowa

THE MOTOR WORLD PUBLISHING COMPANY
154 Nassau Street, New York

Enclosed find $2.00 for which enter my subscription to

The Motor World

for one year, commencing with the issue of _____

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Address _____

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STEPNEY
SPARE WHEEL

Every motorist should carry a "Stepney" and avoid all troublesome delays caused by punctures and blowouts. Write for Catalogue D.

The Only Cure for Tire Troubles

DISTRIBUTORS—AMERICAN STEPNEY SPARE WHEEL CO., 1773 Broadway, New York Ciy. AUTO SPARE WHEEL CO., 22d, Oak and Gillham Blvd., Kansas City, Mo. EXCELSIOR SUPPLY CO., 1436 Michigan Ave., Chicago, Ill.

1909 FORGINGS

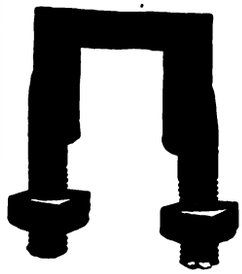


Complete facilities for quick orders.

Send us your specifications. We also carry in stock a complete line of axle ends, steering knuckles, etc., as per our catalog, sent on request.

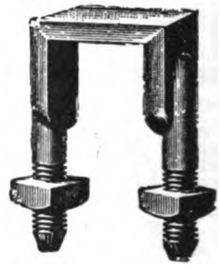
THE BILLINGS & SPENCER CO.
Hartford, Conn.

FORGINGS for the AUTOMOBILE TRADE



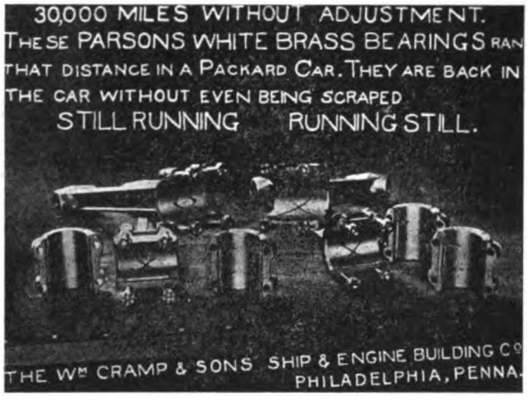
Satisfaction Guaranteed

Thousands of our **Spring Clips** are now in use, having been supplied to the leading automobile manufacturers.



Have you secured our prices?

THE M. SEWARD SONS COMPANY, New Haven, Conn.





For Automobile Bodies, Dashes, Guards, Bonnets, Battery Boxes, Drip Pans, Mufflers, Etc.

STRONG—DURABLE
SCALELESS—RUSTLESS
SMOOTH—PAINT ADHERES FIRMLY

A Metal That's A Time and Money Saver

THE STARK ROLLING MILL COMPANY, CANTON, OHIO

Model B—Brush Runabout

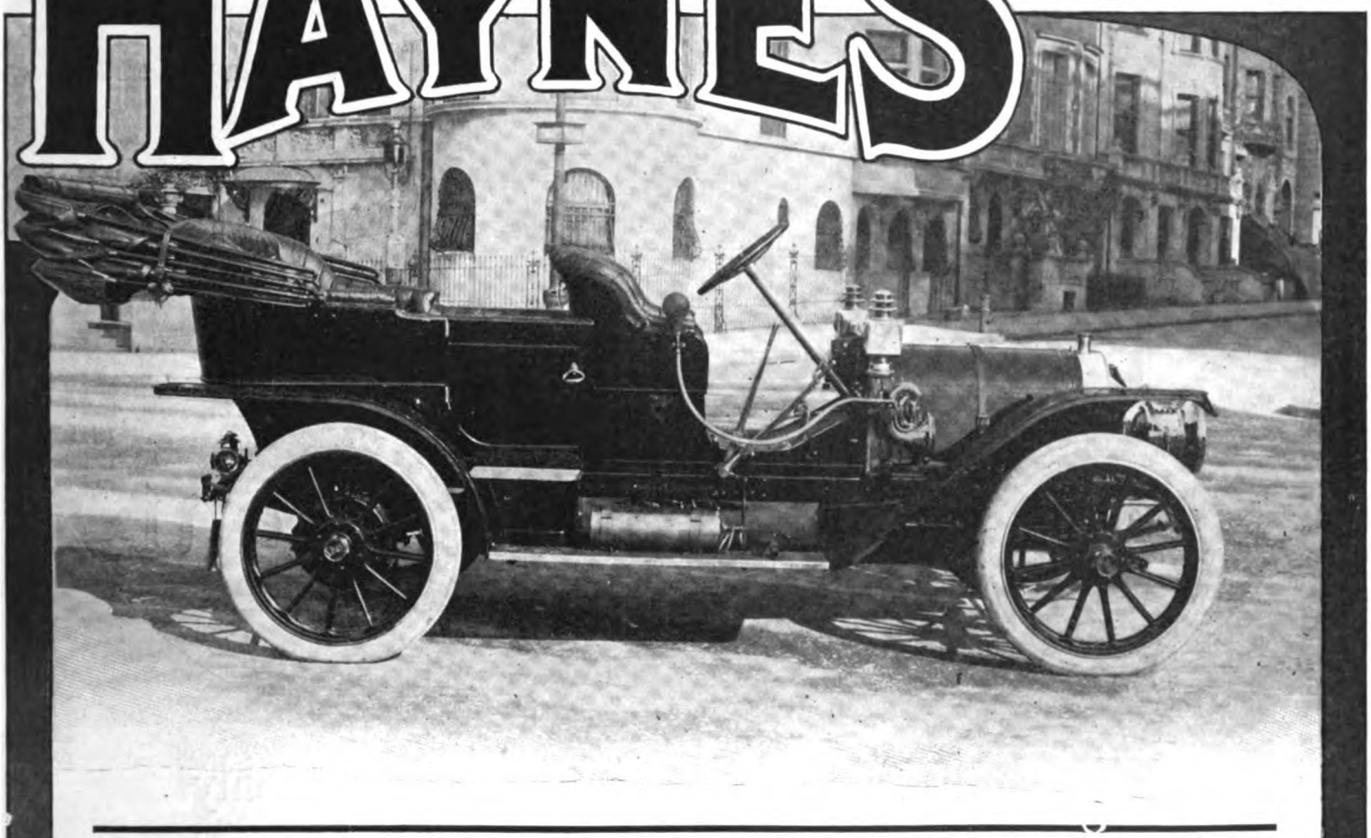
A CAR OF SIMPLE DESIGN MADE WELL
NOT A COMPLICATED DESIGN MADE CHEAPLY

Its records and the opinions of its users speak more loudly than self praise. Agencies for 1909 are being closed rapidly. Much good territory still open.

BRUSH RUNABOUT COMPANY, Detroit, Mich.

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HAYNES 1909



Cars That Go Are the Cars That Sell

Haynes cars run. They always run. In the agents' parlance they "stand up."

Dive into the Haynes mechanisms and you will see why.

There's a clutch that is really jerk-proof, working like a contracting band brake, metal to metal, so that you cannot convey a shock to the motor if you try. That means long motor life.

No leather to renew on the clutch—long clutch life.

A ratchet in the gears preventing stripping—long gear life.

Brakes water-cooled, non-burning—long brake life.

A unique direct drive system that saves wear, friction, thrust and noise and solves the old rear axle problem. Long life there.

Solid, substantial construction all over—long life all over.

No wonder the two Haynes cars were both among the five that won perfect scores in the great Chicago Motor Club Reliability Run.

The Haynes always makes a perfect score.

AGENTS!

Do you realize what such facts mean to you? Your profits are not eaten up by efforts to keep the cars running after they are sold.

And when the result of a big Reliability Run is telegraphed to every paper in the country with Haynes Perfect Scores always sticking up in the record like the proverbial sore thumb—do you see where you get off if you have the rights in your territory? We're ready to talk business.

HAYNES AUTOMOBILE CO., Kokomo, Indiana

Oldest Automobile Manufacturers in America.

NEW YORK, 1715 Broadway Member A. L. A. M. CHICAGO, 1702 Michigan Ave.

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FEDERAL TIRES

1909 Announcement

We shall make a limited quantity only of the highest grade Auto Tires and Tubes, and respectfully ask the careful consideration of our friends in the trade.

FEDERAL RUBBER COMPANY

MILWAUKEE, WISOONSIN

OTIS R. COOK — Sales Managers — O. S. TWEEDY

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To give genuine, unadulterated satisfaction it is absolutely necessary that a speedometer be equipped with a strong, properly constructed Flexible Shaft and Swivel Joint

Always on the Job service

can not otherwise be guaranteed. Motorists who have had long experience with speedometers know that the wire core and riveted type of flexible shaft can not be considered the equal of the famous Stewart link type of shaft, the result of twenty years' experience as the largest manufacturers of flexible shafts, and that no flexible shaft can possibly give continuous service unless used in connection with a swivel joint. **The small, compact, internally-locked Stewart Swivel Joint** is not to be confounded with clumsy, complicated non-swivel devices being used to fill the demand our Stewart Swivel has created for a device to protect users of speedometers against the shaft breakages and annoyances caused where this swivel is not used.

The famous Stewart Flexible Shaft and patented Swivel Joint are used on all Stewart Models at $40, $25 and $15. We don't sacrifice quality to make price. Our $15 instrument includes an Odometer and has the same shaft and swivel as used on our $40 model

Our instruments are complete and guaranteed for five years

SEND FOR NEW CATALOG

Stewart & Clark Manufacturing Company

509 Diversey Boulevard, Chicago, U. S. A.

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"Ready for the Road"

AND

TRUE TO ITS NAME

"JEWEL"

40 H. P. and COMPLETE $3000

¶ A suggestion of its completeness:

Rutenber motor, Bosch magneto and battery; selective transmission; platform spring suspension; Hartford shock absorbers; best grade Timken axles with Hedgeland equalizer; 36-inch wheels, Diamond tires, 4-inch front, 4½-inch rear; full top and wind shield; complete lamp equipment, with large size Prest-O-Lite gas tank; extra tire holders, etc.

¶ Sounds a lot for the money and it *is* a lot for the money. We have pride in our product, which is limited, and practically no overhead expenses. We have got right down to earth and put together the best car we know how, with every part of standard material that can be purchased anywhere.

¶ There isn't any guess-work in the Jewel car.

¶ There wouldn't be any guess-work in the mind of any honest agent who aims to give his customers the most he can for the money.

¶ There's a lot of honest agents, too, whose business we can't handle—for, as stated, our output is limited. To the few who speak quick enough, we'll offer an attractive proposition and we'll make good on everything we say. Try us.

FOREST CITY MOTOR CAR CO.

MASSILLON, OHIO

THE SELDEN CAR FOR 1909

Enters upon its second year with a clean record. No "first year" car has ever earned a better reputation or made a better showing.

THE CAR OF MODERATE PRICE

$2000

Touring Car Roadster
Limousine Landaulet

4 cylinder, 28-30 horsepower, shaft drive, selective transmission, metal body, pressed steel frame, excellent hill climber, fine finish and style, roomy tonneau, luxurious upholstery, easy riding, smooth running, economical in up-keep, in fact, a high grade car in every particular.

The "Silent Selden"

1909 MODELS READY IN SEPTEMBER

Agency propositions now ready. Send for catalog and specifications.

Selden Motor Vehicle Co.

ROCHESTER, N. Y.

Member A. L. A. M.

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"Firestone"

PNEUMATIC TIRES

"The Tires of Sterling Quality"

We might tell you that Firestone Tires are made of the finest Up-River Para Rubber and tough fiber Sea Island Cotton fabric—but that wouldn't interest you half so much as the fact that a Firestone will outwear the tires you are now using and give you better service.

A new Firestone on one rear wheel and a new tire of your present make on the other will tell the story beyond dispute. Then you will soon have all Firestones—we know, because we make them.

FIRESTONE TIRE & RUBBER CO.

Factory and General Offices, Akron, O. **Branches and Agencies Almost Everywhere**

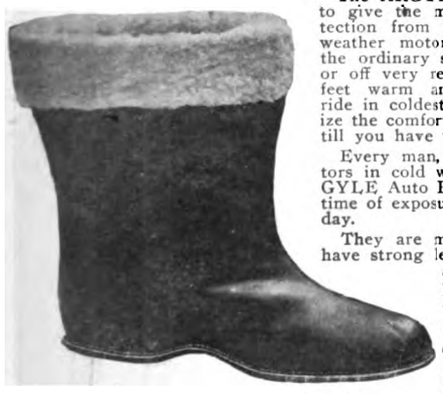
The Largest Automobile Supply House in America

WINTER SUGGESTIONS

We have a large line of Leather Clothing, Caps, Gloves, Wool Vests, Wool Boots, Ways Mufflers, Storm Coats, Lap Robes, Etc.

ARGYLE AUTO BOOTS

Worn over Shoes for Comfort in Cold Weather Motoring.



The ARGYLE Auto boots are designed to give the motorist's feet complete protection from the elements during winter weather motoring. They are worn over the ordinary shoes and can be pulled on or off very readily. They will keep your feet warm and dry during the longest ride in coldest weather. You cannot realize the comfort they give in frigid weather, till you have worn a pair.

Every man, woman and child who motors in cold weather needs a pair of ARGYLE Auto Boots, no matter whether the time of exposure is a half hour or a whole day.

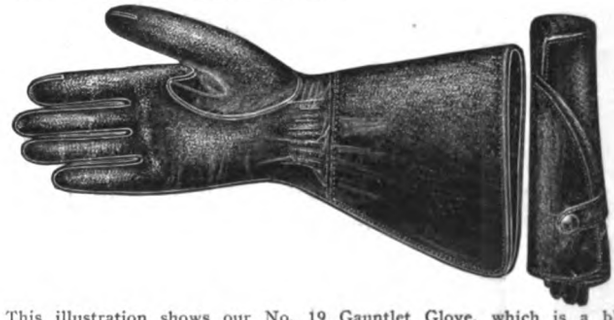
They are made of fine flexible leather, have strong leather Goodyear welted soles and are warmly lined throughout with genuine lambs-wool.

Made in all sizes, with long or short leg. Length of the long leg is 13½ inches,, and the short 10½ inches.

PRICES:

Long, per pair $9.00
Short, per pair 8.00

NO. 19 AUTOMOBILE GAUNTLET GLOBE



This illustration shows our No. 19 Gauntlet Glove, which is a black, seamless knit lined Automobile Gauntlet with extra large flexible cuff with 2 fastenings. This Gauntlet is made from the best selected imported black cape leather. It has a 7-inch Gauntlet with extra large cuff, 20 inches in circumference, which may be adjusted to smaller sizes. The cuff is lined and is guaranteed not to crack, and is stitched with genuine silk.

It will also be noted from the illustration, that the wrist is fitted with an elastic band, which will keep the Gauntlet tight, and comfortable on the wrist, and prevent it slipping down over the fingers.

The cuff is also flexible, and can be rolled into a small space, as shown in the small illustration, for carrying in the pocket. This is the finest Gauntlet Glove on the market.

Price, seamless knit lined, per pair $3.50

CATALOGUE MAILED ON REQUEST

CHAS. E. MILLER, Manufacturer, Jobber, Exporter and Importer, MAIN OFFICE: 97-99-101 READE STREET, NEW YORK

BRANCHES—54th St. and 8th Ave., New York; 202-204 Columbus Ave., Boston, Mass.; 318-320 N. Broad St., Philadelphia, Pa.; 227½-229 Jefferson Ave., Detroit; 1829 Euclid Ave., Cleveland, O.; 1392 Bedford Ave., Brooklyn, N. Y.; 824 Main St., Buffalo.

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IT WILL PAY YOU TO INVESTIGATE

THE **1909** *National*

THE LINE IS BETTER AND MORE COMPLETE THAN EVER

Model 9-35, 4-cyl., 4¾ x 4¾,	**5-passenger Touring Car . . . . .**	**$2,750**
Model 9-40, 4-cyl., 5 x 5,	**5-passenger Touring Car . . . . .**	**$3,700**
Model 9-50, 6-cyl., 4½ x 4¾,	**7-passenger Touring Car . . . . .**	**$4,200**
Model 9-60, 6-cyl., 5 x 5,	**7-passenger Touring Car . . . . .**	**$5,000**

Each National has the well-known National Ball-bearing Motor with new crank case oiler, two ignition systems (Bosch Magneto and Storage Battery) and all other tried and proven features of high grade modern motor car construction. Any of the above models can be furnished with Baby Tonneau body or as a Roadster.

Write for distributors terms and full particulars.

NATIONAL MOTOR VEHICLE CO., 1007 East Twenty-Second St. INDIANAPOLIS, IND.

Here is a big point in favor of

MORGAN & WRIGHT TIRES

They are built with a carcass (the fabric foundation) strong enough to permit of two or three re-treads.

Every motorist appreciates the saving this means to him in his yearly tire bill.

☞But it takes an **unusually** long time to put Morgan & Wright tires in a condition to **need** re-treading.

And, in addition, their **first cost** is actually no more than you are obliged to pay for other brands.

Try them!

MORGAN & WRIGHT, DETROIT

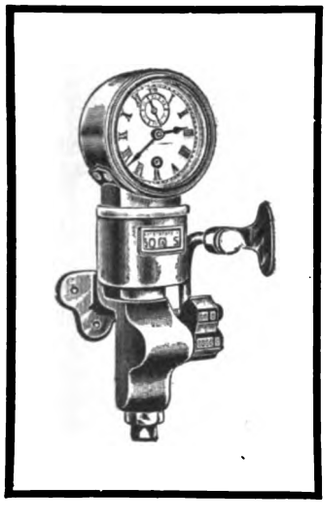
BRANCHES, AGENCIES OR DEALERS EVERYWHERE

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SUPREME FROM COAST TO COAST!

THE WARNER AUTO-METER

Demanded Wherever Autos Are Used!



IN THE EAST

Sweepstakes Races

Four of five of the winning cars depended on Auto-meters. Here are the winning cars all equipped with Auto-meters. Nassau Sweepstakes, Buick, driven by Hugh Easter. Jericho Sweepstakes, Chalmers-Detroit, driven by W. R. Burns. Motor Parkway Sweepstakes, Isotta, driven by Herbert Lytle. Meadow Brook Sweestakes, Allen Kingston, driven by H. Hughes.

MIDDLE WEST

Chicago thousand-mile endurance run

Four of five winning cars relied on Auto-meters. On the two Haynes cars which finished with perfect scores the Auto-meters varied only $\frac{1}{10}$ of a mile each. A wonderful performance in a thousand mile run.

IN THE WEST

Los Angeles twenty-four hour run

Six of the seven cars that entered, and those that finished first, second and third, all were equipped with Auto-meters.

The winning drivers knew beforehand the Auto-meter could be relied upon under the most trying conditions of weather or track.



The Warner Auto-meter is the speed gauging instrument which is indorsed by the leading automobile manufacturers, famous drivers, and the elite of motordom. It was used on the Thomas Car in the great New York to Paris Race.

The Glidden Tour Pathfinders and Route Makers always use the Auto-meter when laying out their routes. They accept the Auto-meter's record because they know its authority.

The Auto-meter has won its way to supremacy because in its construction, quality, accuracy, reliability, endurance, and dependability is more of a consideration than a concession in price.

Write for catalog explaining why it is the authority on speed and distance.

Warner Instrument Co.

Factory and Main Office

307 Wheeler Avenue : Beloit, Wis.

Philadelphia, cor. Broad and Race
San Francisco, 550 Golden Gate Ave.
Indianapolis, 330½ N. Illinois St.
Cleveland, 2062 Euclid Avenue
Pittsburg, 3234 Forbes Street
Boston, 925 Boylston Street
Los Angeles, 1124 S. Main Street
New York, 1902 Broadway
Chicago, 1305 Michigan Ave
Buffalo, 722 Main Street
St. Louis, 3923 Olive Street
Detroit, 239 Jefferson Ave.

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The Value of the AJAX 5,000 Mile Guarantee

is known and appreciated by every individual **AJAX** user. It also finds substantial recognition at the hands of the automobile manufacturer who knows better than any one how vital the tire problem is to the motorist.

No wonder, then, that careful buyers and conservative manufacturers like the **Maxwell-Briscoe Motor Comapny** give to the **AJAX** the largest tire order ever received by a single tire firm.

Incidentally they give to their customers the benefit of the **AJAX five-thousand mile guarantee,** which insures the user against tire worry and gives him a security that no other tire maker can afford.

MAXWELL-BRISCOE MOTOR CO. NO. 2146-T

MANUFACTURERS OF "The Maxwell"

THIS NUMBER MUS APPEAR ON INVOICE

TARRYTOWN, N. Y., 9/19, 1908.

Ajax-Grieb Rubber Co.,

PLEASE SHIP US WITHIN 57th St. & Broadway, N.Y.C. TO VIA

4000 Sets 28" x 3" Ajax Tires Complete.
1500 " 30" x 3" Ajax Tires Complete.
1000 " 30" x 3-1/2" Ajax Tires complete.
750 " 32" x 4" Ajax Tires complete.

Shipment to be made to our several factories, in accordance with instructions to be given later.

MAXWELL-BRISCOE MOTOR CO.,
a. R. Connelly
PURCHASING AGENT

ACCEPTANCE OF THIS ORDER IMPLIES AN OBLIGATION TO FILL OUT AND RETURN FORM BELOW.

The World's Largest Tire Order

Naturally given to the **AJAX.** Every one of the 29,000 Tires is accompanied by our 5,000-mile Guarantee.

Would you insist upon incurring tire hazard when you can buy **AJAX** tires and **AJAX** tire insurance at the same price at which users of other tires buy tires alone, without any guarantee?

Think this over and write for a copy of our 5,000-Mile Guarantee, also for **"AJAX,"** a magazine published in the interest of makers, sellers and users of rubber tires and kindred products of the rubber industry.

Ajax-Grieb Rubber Co.

Factories: Trenton, New Jersey.

Branches

NEW YORK CITY—N. E. Cor. 57th Street and Broadway.
BOSTON—819a Boylston Street.
KANSAS CITY, MO.—1422 Grand Avenue.
DENVER, COLO.—1529 Cleveland Place.
SEATTLE—1102 Broadway.
SAN FRANCISCO—438 Market Street.
LOS ANGELES—1038 South Main Street.
PHILADELPHIA—316 North Broad Street.
DETROIT—743 Woodward Avenue.
CHICAGO—1418 Michigan Avenue.

Matheson

1909
Prices Reduced $1,000
And the Reasons Why

Heretofore the Matheson Car has been considered the highest priced as well as the highest grade American car on the market.

Millions of dollars worth of these cars have been delivered to customers who could afford to pay the higher price for the best.

Many other purchasers have been persuaded that some of the lower priced cars have been "just as good." Matheson owners who have used other makes of cars have answered that question satisfactorily. Send for their letters, which we have done up in a book.

In order, therefore, to still maintain the unequalled quality of the Matheson Car and at the same time give customers this magnificent car at the price of the cheaper cars, the makers have figured that by doubling the factory output and selling at a much closer margin of profit, the price of the Matheson Car equipped with Touring, Landaulet or Limousine bodies, could be cut $1,000, and the same chassis, equipped with Roadster or Tourabout bodies, cut $650.

Accordingly, the Company's working capital has been increased by $350,000, and after October 11, 1908, the purchaser can buy a genuine Matheson Car, the very finest of all motor cars of either European or American make, at the makers' former prices to the agent or dealer; namely:

	New Price	Former Price
50 H. P. 1909 Touring Car	$4,500	$5,500
50 H. P. 1909 Roadster	4,350	5,000
50 H. P. 1909 Tourabout	4,350	5,000
50 H. P. 1909 Limousine	5,500	6,500
50 H. P. 1909 Landaulet	5,500	6,500

VICTORIES

The great string of Matheson victories in the important speed, hill climbing and endurance contests of the past seasons, in competition with the greatest cars of Europe and America, can leave no room for doubt that the Matheson car has no peer on any market to-day.

GUARANTY

Every Matheson is guaranteed for 365 days. (Notice that most other cars are guaranteed for 60 to 90 days only.)

MATHESON AUTOMOBILE COMPANY

Main Sales Office, 1886-1888 Broadway, New York City

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OLD PHONE
Main 1255

B. W. TWYMAN, General Manager

NEW PHONE
1571

THE MOTOR CAR SALES CO. INC.

INDIANA DISTRIBUTORS
E-M-F
"30"

GENERAL OFFICES
330 NORTH ILLINOIS STREET
INDIANAPOLIS

INDIANA DISTRIBUTORS
Studebaker
GASOLINE—ELECTRIC

Nov. 10, 1908.

ATTENTION MR. PELLETIER

Everitt-Metzger-Flanders Co.,

Detroit, Mich.

Gentlemen:

Referring to the E-M-F Ad. in the Automobile of November 5th, we wish to compliment you on it's get-up. It certainly "hits the nail on the head". While we have not been mentioned among those of the successful E-M-F dealers we do not believe it would be amiss to advise that we have up to date taken deposits and have them safely in the bank on 50 cars and have contracts signed and expect deposits to reach us in the near future on 42 additional cars making a total of 92 sales out of possibly 150 our present allotment. This does not include 50 cars contracted for by the Willis-Haywood-Holcomb Co. retail dealers here at Indianapolis, so out of the 200 cars alloted to Indiana there has already been contracted for 142 leaving us 58 cars yet to dispose of.

Believing that this information will be of interest to you and assuring you that we will be pleased to have you use it as you deem best for the interest of the E-M-F Motor Cars, we are

Yours very truly,

THE MOTOR CAR SALES CO.,

B. W. Twyman

Mgr'

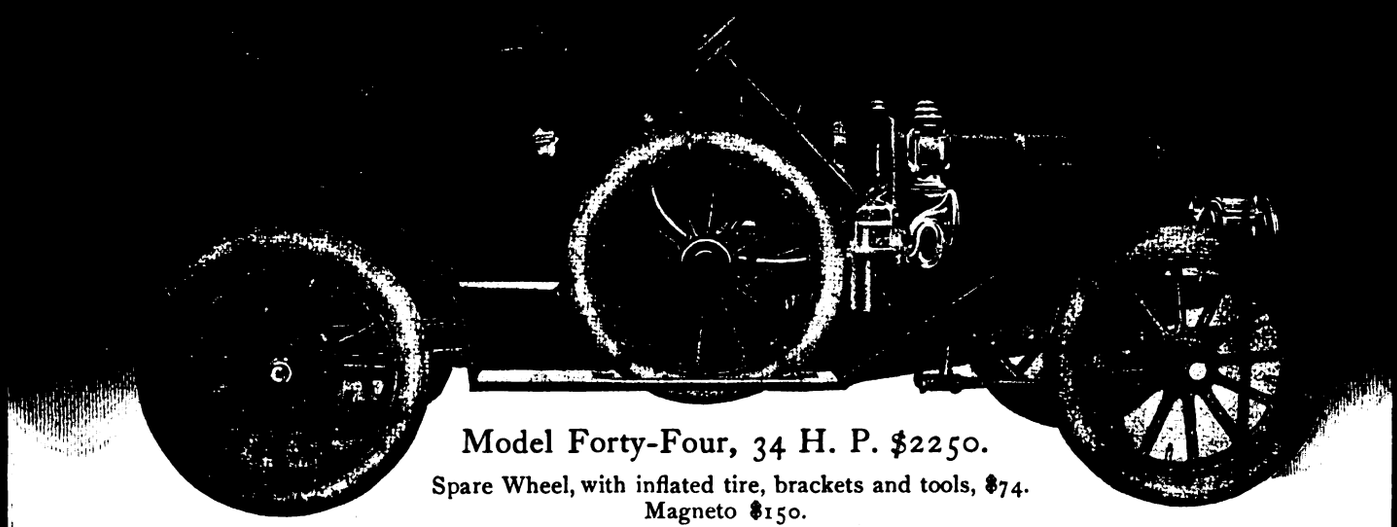
BWT/ES

P. S. Even in the Hoosier State we find very little trouble in selling a good quality of "Blue Sky" as you will note by the above.

Ray - Sorry Twymans name wasn't mentioned, but tell him if we tried to include all the good ones it would take six pages.

Flanders

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Model Forty-Four, 34 H. P. $2250.

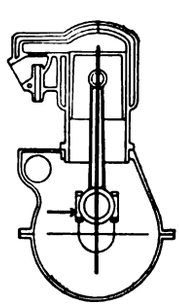
Spare Wheel, with inflated tire, brackets and tools, $74.
Magneto $150.

THE OFFSET CRANK SHAFT

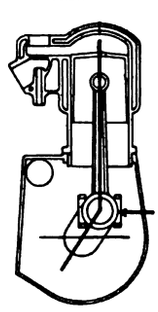
Most automobiles develop sufficient power when they are traveling at a *high* speed. The greatest need is for power at *slow* engine speeds. Rambler Model Forty-Four can be operated smoothly and steadily at *three* miles an hour on *high* gear. This is because of the offset crank shaft.

Rambler

The Car with the Offset Crank Shaft



How the Offset Crank Shaft is an Advantage



Ordinary Engine. Position of piston at explosion center. **Explosion exerts no turning effort to crank shaft. The dead center wastes energy. Shock falls on bearings.**

Rambler offset crank shaft. Position of piston at explosion center. **Full power of explosion exerts turning effort to crank shaft. Dead center eliminated. No energy wasted. No shock to bearings.**

Seven passenger model, forty-five horse power with offset crank shaft, $2500. Other models, $1150 to $2500. Write for catalog describing in detail Rambler offset crank shaft, Spare Wheel, straight line drive and other exclusive features of the new Rambler models.

THE CAR OF STEADY SERVICE

Thomas B. Jeffery & Company, Main Office and Factory, Kenosha, Wis.

Branches and Distributing Agencies:

Chicago, Milwaukee, Boston, New York, San Francisco. Representatives in all leading cities.

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, November 19, 1908. No. 8

EXPLOITING POPP'S TAXIMETER

American Business and Patents Bought from French Owners—How the Probable Profits are Figured.

To exploit the Richard Popp taximeter in the United States and Canada, a company capitalized at $1,500,000 has been launched, under the title the Franco-American Taximeter Co., with headquarters at 112-114 West Forty-second street, New York City. Francoin Ducasse has been chosen president. Practically all of the English and French directors of the company are in New York at the present time, conferring with the American directors.

The rights and titles to the American and Canadian patents have been transferred to the new company by the Societe Generale des Compteurs des Voitures, of Paris, which owned the patents for all countries. The French company has already developed considerable business on this side of the water with cab companies and individuals, and such contracts as it has for the rental of the machines, together with the instruments themselves, are turned over with the patent rights. In payment the Franco American company has agreed to give the French company half of its common stock and $100,000 in cash.

The capital of the concern consists of 25,000 shares of 7 per cent. preferred participating stock, of the par value of $20, and 50,000 common shares at $20 par. It is planned to manufacture 10,000 taximeters which will be rented at an average of $60 per year and the average expense of which will be $20 per year, giving an estimated net profit of $400,000.

Haynes Doubles Its Capital.

Control of the Haynes Automobile Co., of Kokomo, Ind., has been placed in the hands of a stock voting trusteeship for five years, accompanying a reorganization of the company by which its capital stock has been raised from $300,000 to $600,000. With the increase of capital a number of Kokomo investors have taken shares, while in the past the majority of the stock has been owned in Portland, Ind. The trustees selected include H. C. Davis and Richard Ruddell, of Kokomo, and C. C. Cartwright of Portland.

Satterlee Denies Plans for Merger.

Further agitation and rumor concerning the alleged combine of the Maxwell-Briscoe, Olds and Buick interests have brought forth a denial from Herbert L. Satterlee, a son-in-law of J. Pierpont Morgan, and who has been credited with being the prime mover in the negotiations. When asked concerning the probabilities of an immediate combine, he said: "The report is absolutely untrue. I can state positively that the concerns mentioned do not contemplate figuring in any such deal."

Rainier Factory Will Continue.

Jesse Watson, the receiver for the Rainier Motor Co., of New York City and Saginaw, Mich., announces that in spite of the receivership the factory at Saginaw will continue in operation. The 1909 models will be put on the market as originally intended.

Henry Goes with Inter-State.

David W. Henry has become sales manager of the new Inter-State Motor Car Co., of Muncie, Ind. The company's cars, which will be known as the "Inter-State," will be ready about the first of the year.

Syracuse Aluminum Plant Burns.

The Syracuse Aluminum & Bronze Co.'s plant, at Syracuse, N. Y., was visited by a disastrous fire on Tuesday, 17th inst. The conflagration resulted in an almost total destruction of the buildings.

Crescent Removing to Goshen.

The Crescent Motor Car Co., of Detroit, Mich., has decided to remove to Goshen, Ind., and the transfer is now under way. The Cosmo soap plant has been taken.

POPE HEARING PROVES A QUIZZ

Objecting Stockholder's Attorney Puts Receiver Through Long Cross-Examination—Discrepancies Explained.

Apparently alone in his opposition to the reorganization plans for the Pope Mfg. Co., nevertheless Thomas H. O'Connor, of Jersey City, holder of 100 shares of the preferred stock, did not recede from his position, at the special hearing before Vice-Chancellor Howell, at Newark, N. J., on Monday, 16th inst. In support of his contention that the offer of $1,500,000 for the assets of the company is "grossly inadequate," and that the receivers should not be given permission to accept it, his attorney put Receiver Albert L. Pope through a long ordeal of cross examination, in an endeavor to establish discrepancies between the latter's present estimates of the values of the various properties and the appraisal made last May. In his examination, O'Connor's attorney, Willard C. Fiske, pointed out that the appraisers' valuation of the assets was $2,600,000, while the receivers now regard the committee's offer as a liberal one, and declare the total value of the assets to be only about $1,250,000.

In explanation, Receiver Pope took up the items one by one, and also gave an account of the payments that have been made on claims since the first appraisal was rendered, and which have resulted in a corresponding reduction in the assets. He also showed that a difference in estimate occurs when the assets are regarded as "in liquidation" or as those of a "going concern."

As one of the three receivers for the company, the witness testified that it would be difficult to get $500,000 net for the Hartford plant "in liquidation," while $200,000 would be an outside price for the Westfield (Mass.) plant at a forced sale. The company's Thompsonville plant he appraised at $10,000, with the explanation that the company had tried to sell it for five years,

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without getting a bid for it. The estimate, he said, was a fair one.

The Hagerstown (Md.) plant, Receiver Pope went on to tell, would eventually net about $125,000, inclusive of the $57,500 already paid for the factory premises, "if the reorganization scheme should carry." Otherwise, $75,000 would be the outside amount that could be realized. The Pope Mfg. Co.'s claim against the Pope Motor Car Co., the witness estimated, is worth $350,000 at the outside. The stock of the latter company, which is all owned by the Pope Mfg. Co., he said would bring nothing.

Two plants of the Federal Mfg. Co., whose stock is all owned by the Pope company, the receiver estimated might net $50,000. One, at Elyria, O., he explained, has already been sold for $35,000 cash, and the other, at Cleveland, was worth as much. From the aggregate sum of $70,000, he deducted the sum of $19,000, a claim for that sum being in litigation in the Ohio courts.

When the enumeration was completed Attorney Lindabury said: "These several valuations total about $1,250,000. Is it your opinion that $1,500,000 is a fair offer for the Pope company's assets?"

"Yes, sir," the witness answered, with emphasis.

Attorney Fisk, in the course of a long cross-examination, quizzed Receiver Pope about appraisals reported by the receivers at divers times, which were seemingly at variance with the valuations as stated by him on the stand. The witness explained that since the appraisals cited by Fisk were made, $379,000 had been taken out of the assets to pay a third dividend of 25 per cent. to creditors, while $80,000 had been paid in settlement of the Unzicker claim.

Fisk called the witness's attention to a statement in the published plan of the reorganization committee, to the effect that the committee expected to realize enough from the Pope plants, outside of the Hartford and Westfield plants, which the new company would operate, to pay off the $800,000 in notes which it was intended to issue, and asked him how he could reconcile such a statement with the valuations he had just put on the properties involved.

To this the receiver answered that the committee's statement was made in May last, and that since then one property, that of the Columbia Steel Mills, had been sold for $180,000, and the proceeds used in the payment of dividends to creditors, while $250,000 had been taken from assets in the Maryland jurisdiction and used in the same way. The assets, aside from those in Hartford and Westfield, would now no longer suffice to meet the proposed issue of $800,000 of secured notes, and earnings would have to be used to eke out.

In his argument, Fisk pointed out that creditors of the Pope company were not interested, the only ones concerned being the stockholders, and he urged that it was the duty of the court to protect the interests of stockholders, whether great or small. He contended that the Pope company's various plants were worth much more than the price offered, and that to permit the sale would be in effect a summary condemnation of his client's holdings in the concern.

The creditors, however, took a hand in the hearing, and Percy S. Bryant, of Hartford, Conn., counsel for the creditors' committee, urged that the court give permission for immediate acceptance of the offer. "We want to get our money," he said. Although he was present, neither O'Connor nor any witness for his side was put on the stand. Colonel George Pope and Frederick C. Billings, one of the appraisers, were present to testify for the receivers.

No decision was announced by the court after the hearing. It was indicated, however, that a final decision would probably be made in a few days.

Death of George A. Burnham.

George A. Burnham, general factory manager of Morgan & Wright, of Detroit, Mich., was instantly killed last Saturday, 14th inst., while duck hunting on Baltimore bay, near Pearl Beach, Mich. Standing in a skiff after firing one barrel of his gun, Mr. Burnham attempted to lay the weapon back of him in the bottom of the boat. In doing this he held it by the barrel, and the stock of the gun, instead of going into the boat as he had intended, went over the side, where the trigger caught and discharged the second barrel. The entire charge lodged in the back of his head. Although accompanied to the bay by three other officials of the Morgan & Wright factory, none of them was within hailing distance at the time of the accident, the only witness being a young man who was punting the skiff.

Except for one year's service in the Spanish-American war, Mr. Burnham had been with Morgan & Wright continuously since 1893, when he first obtained employment in the bicycle tire department. He advanced rapidly, becoming superintendent, and later factory manager. When the factory removed from Chicago to Detroit, a large part of the planning of the arrangements for the immense new plant devolved upon Mr. Burnham, a work which he accomplished with signal success. He was recognized as an expert and authority on tires, and personally was as affable and companionable as he was able and unassuming. Mr. Burnham was born in Portland, Me., October 1, 1874, and his early youth was spent in Boston. In Detroit he was prominent in automobile circles, and as a member of both the Knights Templar and the Mystic Shrine had a wide acquaintanceship and prominence. He leaves a wife and three children.

Brandt Becomes a Rambler Manager.

Ernest H. Brandt has resigned as general manager of the Detroit-Cadillac Motor Car Co., of New York City, to accept the management of the eastern distributing depot of Thomas B. Jeffery & Co., of Kenosha, Wis. He will have charge of Rambler territory in Virginia, Maryland, Delaware, New Jersey, Pennsylvania east of Altoona, eastern New York State and western Connecticut, making his headquarters in the Rambler building, 38 West Sixty-second street, New York City. Upon the purchase of the Detroit-Cadillac Co. by Inglis M. Uppercu, recently, Brandt was elected secretary and general manager, so that he might continue along the same lines as when he was the manager under the Cadillac Motor Car Co.'s ownership of the concern. The Rambler offer, however, presenting a larger field, induced him to make the change, while preserving pleasant relations all around. He will take about half a dozen members of his former organization with him in the new work.

The Week's Incorporations.

Detroit, Mich.—Ford Motor Co., under Michigan laws. Increase of capital from $150,000 to $2,000,000.

New York City, N. Y.—United States Motor-Cab Co., under New York laws, with $50,000 capital. Corporators—G. Duell, M. Sussman and T. J. Bell.

Newark, N. J.—Cope Co., The, under New Jersey laws, with $50,000 capital; to manufacture automobiles and carriages. Corporators—M. M. Dodd, G. G. Conley and A. Church.

Waterbury, Conn.—W. B. S. Automobile Co., The, under Connecticut laws, with $50,000 capital, $1,000 subscribed. Corporators—Charles S. Woodward, Ira F. Bachelder and Henry Stackman.

New York City, N. Y.—Cameron Motor Co., under New York laws, with $150,000 capital. Corporators—Ernest Stauffer, Jr., Arthur F. Gotthold and Harold B. Elger, 2 Wall street, New York.

Philadelphia, Pa.—Travelers' Garage and Auto Co., under Delaware laws, with $25,000 capital. Corporators—C. R. Calhoun, Philadelphia; G. W. Smith, Jr., Germantown,; J. D. Calhoun, Omar.

New York City, N. Y.—Steam Motor Co., under New York laws, with $25,000 capital. Corporators—John Magee Ellsworth, Henry C. Cryder and Theodore A. Havemeyer, 583 Park avenue, New York City.

Washington, D. C.—Electric Speedometer and Dynamometer Mfg. Co., The, under Delaware laws, with $500,000 capital. Corporators—C. E. Munroe, W. M. Kimball, N. M. Hopkins, K. Woods, C. M. Remey and W. T. Bingham.

New York City, N. Y.—Kayton Taxicar and Garage Co., under New York laws, with $100,000 capital; to manufacture and deal in automobiles. Corporators—E. M. Leventritt, J. F. Jacobs, W. F. Tracy, F. G. Braun and C. J. Heermance.

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GRANTS REBATES ON PARA RUBBER

Bill to Lower Export Duty for Brazilian Syndicates—Foreigners File Protests Against Preferences.

Para rubber trade will undergo a violent readjustment if a recent legislative act of the Para state legislature affecting the exportation of this product is signed by the governor. The new law, which has passed the local chamber of deputies, provides for a rebate of 4 per cent. of the 22 per cent. export duty, to Brazilian syndicates founded under the law of 1903 and recognized by the state government, on fine and medium grade rubber exported abroad directly by such syndicates. The rebate would be made on the basis of weekly averages. Its effect would be to give the Brazilian syndicates a monopoly on the exportation. The foreign houses established in Para could not operate in competition with them, because of having to pay the higher export duty. Strong protests have been presented through the State department at Washington to the Brazilian Federal Government, against this action on the part of one of its states, and the British and Portuguese houses engaged in the trade are also stirring their respective governments to similar representations. The annual export of Para rubber amounts to over 38,000 tons, or almost $60,000,000.

Turns Over Selden Royalty Excess.

Among the chief October disbursements of the receivers of the Electric Vehicle Co., of Hartford, Conn., according to the reports filed for the month, was the turning over of $76,580.41 to the Association of Licensed Automobile Manufacturers, representing Selden patent royalties in excess of the $150,000 per annum maximum which the company is allowed to keep under the terms of the new agreement with the association and its members. Of the $150,000 which it retains, a maximum of $60,000 per year goes to George B. Selden, and the balance of $90,000 to the company itself, this amount having been recently set aside by the court's order for the benefit of the creditors as the company's share in the royalties for the past year.

The receivers' report for October discloses an increased factory activity, the purchases amounting to $23,208.37 as against $9,371.54 in September, and the pay roll being $24,780.12 as against $17,262.67 in the previous month. The balance on hand November 1 was $175,834.28, as against $208,188.46 on the first of October.

Freight Concessions in the South.

Important freight concessions have been obtained from the Southern Classification Committee by the traffic department of the National Association of Automobile Manufacturers, representing also the Association of Licensed Automobile Manufacturers and the American Motor Car Manufacturers Association. A lowering of rates in the Southern States south of the Ohio and east of the Mississippi has been effected, and the concessions also in some instances reduce the through rates to points in the South from points in the Central Freight Association's territory, lying between Buffalo and Chicago, and rates from points east of Buffalo on shipments routed via southern despatch lines.

New Location for Philadelphia Show.

Instead of holding Philadelphia's show in the First Regiment armory as on the past two occasions, the Second Regiment armory has been chosen, being a much larger building, located at Broad and Susquehanna avenue. The event will take place from January 27 to February 3, inclusive, and will be under the management of J. H. Beck, who has managed former shows.

Cleveland Postpones Its Show Dates.

Cleveland's automobile show has been postponed a week from the date originally set. The time now selected is the week of February 22, at the Central armory. The management will not be in the same hands as formerly, having been given to a committee of the Cleveland dealers.

Albany Concern in Receivership.

The Albany Automobile Co., which for a time undertook to manufacture cars in Albany, Ind., has gone into a receiver's hands. The proceedings are before the U. S. Circuit court in Muncie, Ind., where Judge Leffler has appointed the Muncie Trust Co. to act as the receiver.

Goshen Gets a Rubber Company.

The Goshen Rubber & Tire Co. has been organized by Dayton (O.) capitalists. The plant will be located in Goshen, Ind., and is expected to be in operation by the first of the year. It will include the old buildings of the Goshen Rubber Co.

Rider-Lewis to Move to Anderson.

The Rider-Lewis Motor Co., of Muncie, has made arrangements to move to Anderson, Ind., on the first of the year. A new factory in the latter city is being hurried to completion by that time.

Changes Name to Rome-Turney.

The Long-Turney Mfg. Co., of Rome, N. Y., which makes radiators and automobile specialties, has changed its name. It will hereafter be known as the Rome-Turney Radiator Co.

Gilbreath Goes with Oakland.

W. S. Gilbreath has severed his connection with the Waverley Co., of Indianapolis, Ind. He is now with the Overland Automobile Co., in the same city.

TO DROP THE 1909 PARIS SALON

French Makers Signing an Agreement not to Exhibit—Heavy Bond Forfeitures for Violation.

Having tired of the burden and expense of annual shows, the French makers, according to advices from Paris, are signing a general agreement, the effect of which will be to abolish the Paris Salon for the year 1909. The agreement provides that the makers subscribing to it shall not exhibit at any motor show which may be given in Paris during the coming year, under penalty of a forfeiture of 50,000 francs. The signatures of practically all the larger makers —those making over 100 chassis per year— are said to have been obtained already, and the circular will be presented to the smaller makers, as well.

The object to be accomplished is not the complete extinction of the Paris show, but to bring an interval of at least two years between the forthcoming event and the one to follow it, after which the shows may be held biennially, annually or not at all, as conditions may suggest. The fact that a year's time no longer develops changes or improvements of any very striking character in the French models has lead to the belief that the time has come when a show once in two years would be sufficient, being of more interest by reason of the greater length in the intervening period and presenting an economy to the chief participants in such affairs.

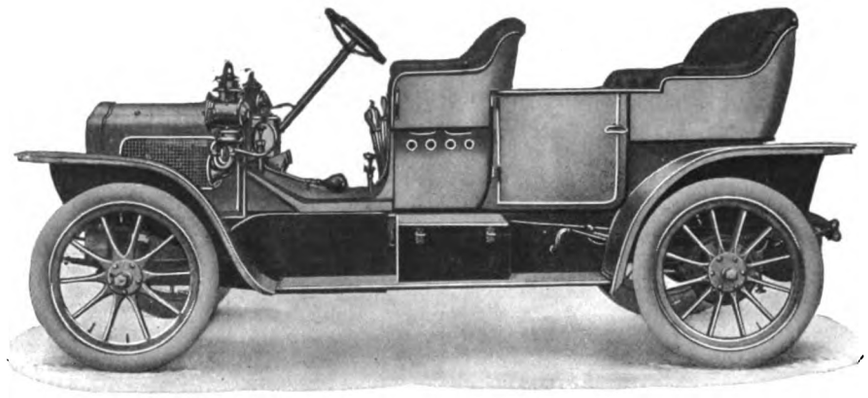
Last year the subject of biennial shows had considerable agitation, but was not carried to the point of concurrence which it now receives. The agreement which is being circulated does not affect the 1908 Salon, except that the makers are being urged to do their utmost to make the this year's show a success because of the prospect of its being the last for two years. If it be deficient in interest or returns, however, the exhibitors will be the more ready to turn to the biennial plan, which now enjoys every likelihood of adoption.

Shawmut Factory is Destroyed.

Fire consumed the factory of the Shawmut Motor Co., of Stoneham, Mass., on the 13th inst., causing a loss estimated at $100,000, of which the Shawmut company's share is given as $75,000. The company carried $42,000 insurance. The plant, a three-story wood structure, located at Kidd and Pine streets, was seen to be in flames shortly after midnight, and burned so rapidly that the efforts of the firemen were unavailing. Frequent explosions of small quantities of gasolene endangered their work. Several finished cars and some in process of construction were destroyed, together with much valuable machinery.

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A WHITE STEAMER FOR $2000!



Not since 1904 have we made a car priced at so low a figure as $2,000. The White—"the car in a class by itself"—has thus been brought within the range of a larger number of purchasers than has been the case in recent years.

The new $2,000 White car, known as our Model "O," has none of the attributes of the "cheap machine." It is simply a "smaller edition" of our $4,000 car. The new model "O" is rated at 20 steam horsepower, which means that it can do the work of gasoline cars rated at much higher figures. The wheel-base is 104 inches; the tires, both front and rear, are 32x3½ inches. The car is regularly fitted with a straight-line five-passenger body. The frame is of heat-treated pressed steel. The front axle is a one-piece forging of I-beam cross section.

The nature of the steam engine is such that the engine of small power has all the desirable attributes of the engine of high power. In other words, as the weights of our small car and of our large car are proportionate to the power of their respective engines, the small car can do anything that our large car can do.

To summarize the features of our new Model "O" car—it is noiseless, odorless, smokeless and absolutely free from vibration. All speeds from zero to maximum are obtained by throttle control alone. The speed of the car responds instantly to the throttle; the engine can never be stalled. The directions for driving are summed up in the phrase, "Just open the throttle and steer." It starts from the seat—"no cranking." It is the ideal moderate priced machine. It is the best for the man who wishes to drive and take care of his own car. It is a result of our nine years of experience in building the White Steam Car—the only machine which finds a ready market in every portion of the globe.

Write for circular giving full details of this car.

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CHICAGO, 240 Michigan Ave.

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The Rise in Rubber and Its Effects.

Unexpected developments in the crude rubber market have brought about a condition which, taken in conjunction with other industrial conditions have wrought no little disquietude among the tire makers. In fact it has become recognized pretty generally throughout the trade that a combination of high prices, a reputed shortage in the crop and a strong demand on this and allied markets are so endangering the future of the tire industry as to render the advisability of long continuing the present listings a matter of grave question. Indeed after investigating present conditions, the Motor World has no hesitancy in predicting that barring unforeseen contingencies the present prices for automobile tires will be abandoned by the first of next January and a new and higher scale adopted, thus reversing the movement of last August when a general cut in prices was agreed upon by a number of the makers.

That the effect of increasing prices demanded for crude rubber already has been felt abroad is evidenced by the fact not generally known, that two of the largest foreign makers have announced a 10 per cent. increase in price within a few days. In America, following a year of general curtailment in all lines, rubber manufacturers are universally short of stock. With prices for the raw material at low water mark and the market well supplied, they have been buying conservatively and in many instances producing only sufficient finished material to supply the current demand. With the closing in of fall, however, a sharp and continued rise in price has set in, the visible supply has dwindled, and as a final blow it has become impossible to contract for deliveries after the first of the new year.

The present low prices were based upon the conditions existing last summer when the rubber market was in an unusually favorable condition. The prospect of a heavy demand, the general resumption of business in all lines, together with the fact that the upriver fine Para rubber was then selling at 89 to 90 cents a pound as against $1.08 and $1.22—the minimum quotations for August markets in 1907 and 1906, respectively—tempted the makers to reduce their own quotations to a uniform extent.

With the last of September, however, prices had risen toward the figures of 1907, the last of October saw them at $1.03 and $1.04 as against $0.99 and $1.00 a year ago, and reports of the Brazilian market published this week give an authenticated maximum of $1.30, with unconfirmed reports of trading at $1.32, still referring to the upriver grade of fine Para. Other grades have followed the trend in descending scale. Local buying is in moderate amounts only among both dealers and manufacturers.

Foreign markets also are reported as feeling the pressure, and in at least one instance, the "American demand" was mentioned as exerting a strong influence in boosting the prices. That the market may soar to $1.40 by the first of January is far from improbable.

At the same time, other lines of rubber manufacture are beginning to evidence recuperative tendencies with the improvement of business conditions following election, this also tending to increase the agitation, while in the tire market itself the outlook for a prosperous season for the automobile industry tends to encourage plans for production on an increased scale. For the most part the automobile manufacturers are pretty well covered by contracts made at current prices. The increased demand of the early spring induced by the general refitting of cars in the hands of private owners therefore, is the contingency against which the tire makers are now anxious to provide.

About "Going into Politics."

According to one of the New York "auto editors," who, like Senator Frelinghuysen, and so very many other alleged Jerseymen, earns his livelihood in New York, all sorts of things are likely to happen to the New Jersey Automobile and Motor Club for the part it played in the defeat of Senator Colby in the recent election; disruption and the formation of a rival club are among the several dreadful things that are likely to occur.

Because Mr. Colby stands for the New Idea—for a higher order of politics than that practised by the wardheeler and grafter his defeat may be somewhat regrettable, but because of his very high-mindedness and reputation for intelligence and righteousness, the automobilists were justified in expecting not a narrow view, but a square deal at his hands. When he failed to give evidence to this end, he courted opposition and as he received what he courted, he should have small fault to find with his defeat. It was high time that the automobile conscience of New Jersey was quickened. The manner in which the legislature has assumed a stand-and-deliver attitude and picked the pockets of all who use automobiles in the state, is not short of disgraceful.

The New Jersey club performed a much needed public service in directing attention to the fashion in which $14 is extracted from the pocket of even the non-resident who enters the state but once, and to other iniquities of the Frelinghuysen law. It is bad enough for a resident to be compelled to pay for the supposed right to use the public highways, but it is infinitely worse when one state in the union undertakes to issue "passports" and exact what is practically an admission fee from the residents of all other states in the Union, and requires that they shall stop on demand that their "passports" may be examined. It is contrary to the American notion of republican institution and republican government. It is directly opposed to the American notion of a union of states. It is legislation of the narrow-minded and offensive sort.

As Mr. Colby stands for that sort of government it was right and proper that his

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victims and their friends should turn on him. It is to be hoped that they will turn on the Colbys and the Frelinghuysens wherever they may exist. Apparently it is the only way that the victims ever will be able to obtain a square deal. "Going into politics" was the only way the cyclists nearly a quarter century ago obtained their full measure of legislative fair play. They obtained exactly the same freedom accorded other road users and the automobilists should not remain content with less. All they need to do is "knock out" a few more Colbys and a Frelinghuysen or two, and to upset the results at a few precincts or wards in an occasional state. They now are strong enough to do it and it should be done. The news will spread fast enough. Politicians do not squeal unless they are hurt. The squeal from the Colby camp is evidence that the automobilists' work was effective. the fear that Colby may seek revenge in legislative halls which has depressed some timorous souls, need cause no great concern if the men with backbones who led the New Jersey fight let it be known that any attempt of the sort will visit on the parties to it the same sort of treatment accorded Mr. Colby.

As for the New York-New Jersey "auto editor," who is anybody's press agent, his efforts to stir up strife in the New Jersey automobile club well may be discounted. He possesses a small commission from the state and is anxious to hold it. If he really desires to turn the light on anything he might turn a few rays on the late New York-Montauk efficiency run, in which he himself had such a large hand, as according to some accounts, the real reasons why the participants were lodged on an uncomfortable boat when a comfortable hotel was available, will make unusually interesting reading.

Electricity for Car Lighting.

Considering the amount of attention which has been paid to the subject of car lighting, it is somewhat to be wondered at that no more effort has been made to introduce electricity for this purpose. As applied to electric vehicle useage it has proved the unquestionable servicability of incandescent lamps for this purpose when properly made and installed—this being the chief point in doubt as to the general practicability of the system. The only other question, that of its relative expense and ease of maintenance, remains to be solved. But its solution must depend in part on the relative convenience of the three possible systems quite as much as upon their first cost or upon other factors which are involved. For limousine cars the use of interior electric lighting is almost universal. To a limited extent it also is applied in machines of this type to tail-light and dashboard work. Its extension to the field of pleasure cars should be by no means the difficult and unproductive task it may appear.

The continued vogue of the acetylene searchlight has led to so many abuses that its use in cities is now pretty generally frowned upon by considerate motorists. Yet no form of tempered light has been advanced to take its place, so that a majority of the machines in night use about the great cities, are driven with only the insufficient service of the oil dash lamps. These for the most part, serve only the purpose of warning signals, and have no practical value in illuminating the road in front of the machine, which, though it may not be necessary for ordinary city work, yet is an advantage when traversing poorly lighted streets, or when running during stormy weather. The powerful acetylene lights, despite their advantage for work in the open country, are ill-suited to driving under such conditions and at times constitute a source of positive danger, both to pedestrians and drivers of other vehicles, because of the confusion wrought by their blinding glare. Systems of shading these lights, or deflecting their beams have been devised, but for some unaccountable reason have failed to come into general use.

The electric light has the marked advantage over other systems that it requires no trimming, always is ready for use, and gives a soft glow which, by properly proportioning the size of the lamp to the requirements, may be as strong or as mild as may be desired. It is as certain in a high wind, or when the car is being tossed about on a rough road as when it is standing in the garage, is free from all taint of fire risk, discharges no combustible oils or gases in the event of accident, and may be lighted at will without taking the driver out of his seat.

Apparently those most intimately concerned with it are not aware of the real immensity of the automobile industry. Its magnitude just has been made plain by a concern which makes a specialty of selling "representative mail lists," of the various trades to those who are not wholly free from guile. Among many others, it has for sale lists of 819 "auto manufacturers and assemblers," 347 manufacturers of "autos driven by gasolene," 70 "electric automobile manufacturers," 31 "automobile buggy manufacturers," and 69 "auto lamp manufacturers."

If the Society of Automobile Engineers desires to be accepted seriously and not merely as a medium for personal exploitation, it might risk something more than an eye on the advertisements of the gentleman who is serving as its president. Perhaps he is not using his office for personal benefit and means no harm in attaching his official title to the advertising of his business, but it is such an unusual procedure as to give rise to varied impressions.

Whenever a milkman breaks one of his bottles, he is quite apt to throw the broken pieces out on the pavement. Automobile clubs in various cities are awakening to the fact and it is probable that this class of offenders will be given special attention in the near future.

COMING EVENTS

November 25, Savannah, Ga.—Automobile Club of America's 200 miles light car race.

November 26, Baltimore, Md.—Automobile Club of Maryland's hill climb, Belvidere avenue hill.

November 26, Savannah, Ga.—Automobile Club of America's 400 miles race.

November 27, Denver, Col.—Colorado Industrial Exposition Association's race meet. Overland Park track.

December 5, Long Island Motor Parkway—Speed trials against time, auspices of the Long Island Motor Parkway, Inc.

December 31-January 7, New York City—American Motor Car Manufacturers' Association's annual show in Grand Central Palace.

January 16-23, New York City—Association of Licensed Automobile Manufacturers' annual show, Madison Square Garden.

January 23-30, Philadelphia, Pa.—Philadelphia Automobile Trade Association's annual show.

February 6-15. Chicago. Ill.—National Association of Automobile Manufacturers' Show, Coliseum and First Regiment Armory.

February 27-March 3, Hartford, Conn.—Automobile Dealers' Association show.

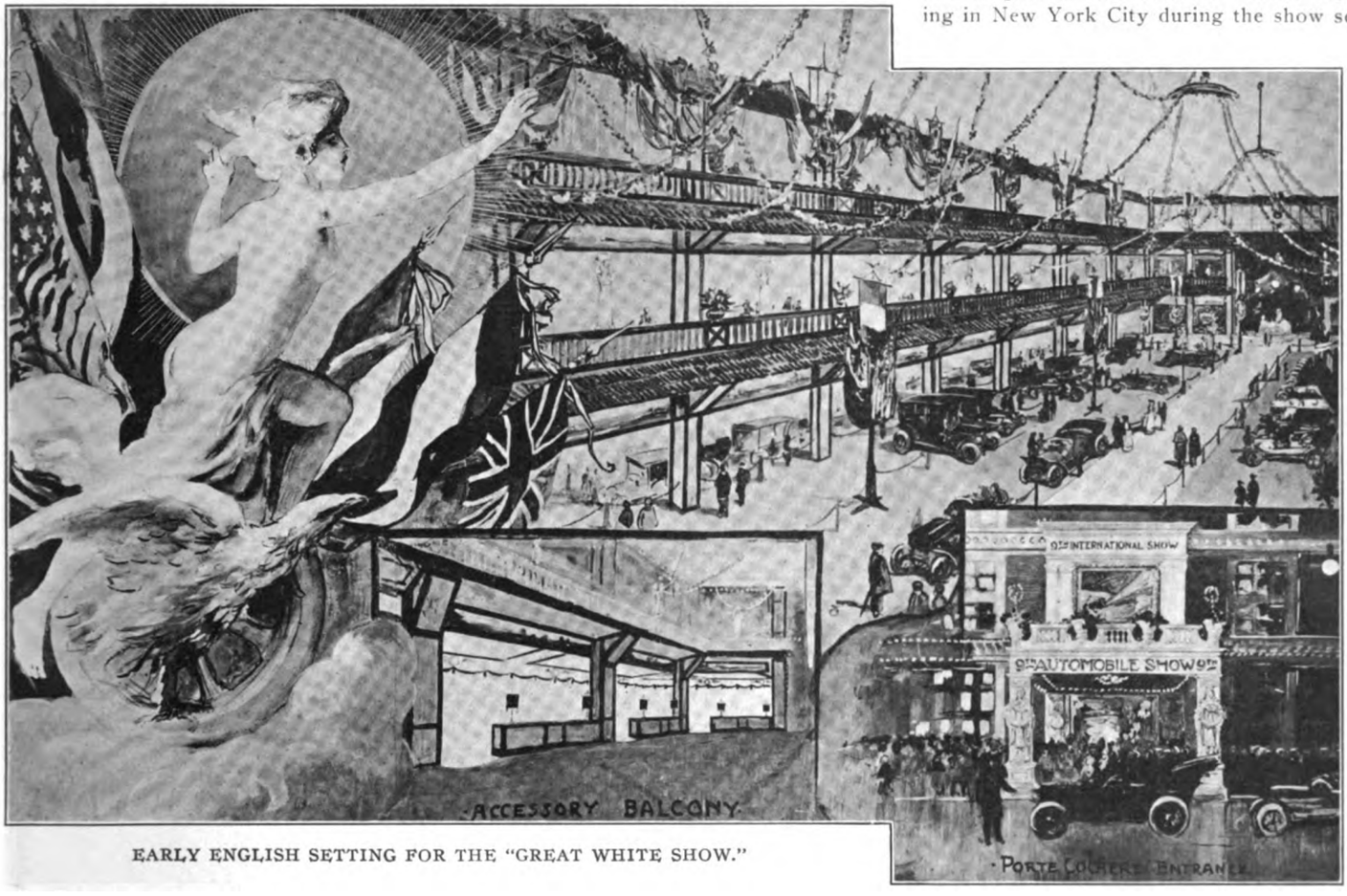
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ART FEATURES FOR PALACE SHOW

Early English Decorative Scheme Adapted to Demand of Exhibitors for Space—Aerial "Extras" Crowded Out.

So great has been the demand for space at the Grand Central Palace show, which opens in New York on New Year's eve, that the exhibits of balloons, aeroplanes, gliders and other aeronautical contrivances which have been an "extra" in the past, will be crowded out entirely to make room for the regular exhibitors. Of the latter there are 75 car makers and about 250 accessory makers, making an aggregation which is claimed to be "by far the largest numbers of exhibitors ever congregated under one roof at an automobile show."

Even the decorations have had to yield to the necessary economy in space, and while sacrificing nothing in artistic beauty, will be on the "sheath gown" order of slimness as far as possible, so that no bulky masses or protuberances will encroach on the area available for the space holders. The work on the decorations is progressing to a point where everything is available for the purpose. As indicated by the illustration presented herewith, they will form a suitable setting for the affair without obtruding on the vital displays of the exhibition.



EARLY ENGLISH SETTING FOR THE "GREAT WHITE SHOW."

Demonstrations of cars will remain as one of the features of the Palace show, it being the belief of the American Motor Car Manufacturers Association that dealers and buyers still find them a valuable aid in determining the running qualities of a car and in judging the advantages of the various control systems. When the question of abolishing demonstrations was presented to the show committee, the representations as to their value and desirability were so strong as to insure their continuance.

In accordance with the policy of giving the affair "tone," the catalog which is to be issued in connection with it will be kept free of advertising. The catalog will contain a complete list of the evhibitors, together with a directory of their spaces and a summary of their products, being in the nature of a handsome souvenir and record of the occasion.

The difficulties of the show committee in providing space for all those desirous of obtaining allotments have been very great, indeed, and have made it necessary to use every nook and corner of the building. "It has been a case of trying to make two feet grow where one grew before," according to H. O. Smith, chairman of the committee. The fact that the exhibits include not only cars of American manufacture, but a number of the famous foreign cars as well, has swelled the aggregate of displays in this class, and the growth in the number of taxicab models which the makers are desirous of displaying has made the taxicab division one of considerable magnitude and importance. Furthermore, the accessory makers have increased in numbers, with no diminution in their respective lines, so that their requirements for room in which to stage their devices to good effect have become greater than in the past.

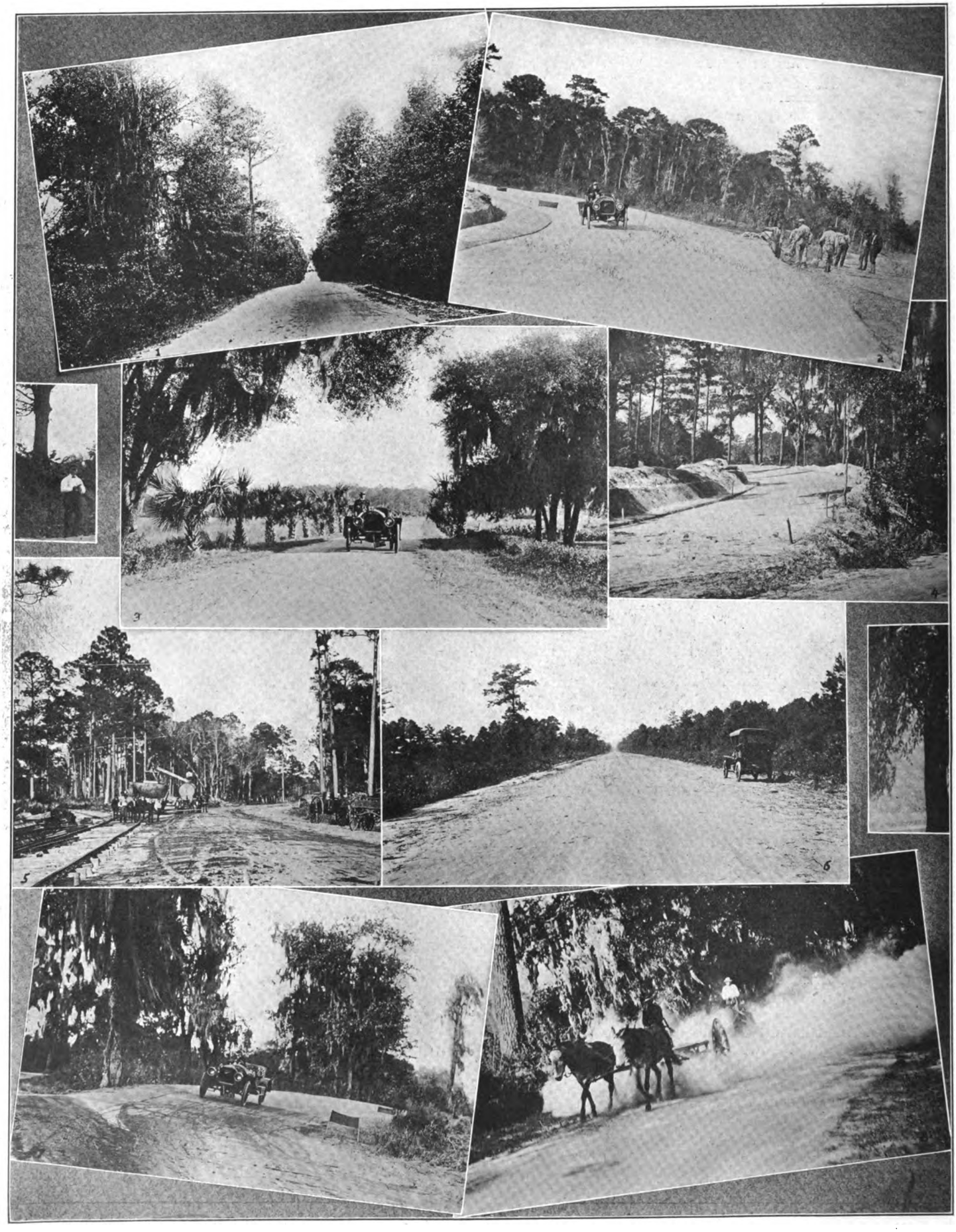
Double Date for Engineers' Meeting.

As is customary, the Society of Automobile Engineers will hold its annual meeting in New York City during the show season. In order to accommodate its various members who are likely to be in attendance at one or the other of the two shows, however, it has been decided to adopt a dual date. The opening sessions will be held beginning Tuesday, January 5, and adjourning to Tuesday, January 19, one of the two gatherings thus falling into each of the two show weeks. In addition to the usual technical program the fourth annual business meeting and election of officers will be held.

Newark Dealers Determine on Show.

Despite a refusal from the Motor and Accessory Manufacturers, Inc., to grant a sanction for their proposed show, the automobile dealers of Newark, N. J., have taken courage again and plan to hold the affair anyway. It is thought that the accessory lines handled by the dealers themselves can be displayed advantageously without the manufacturers' assistance.

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SHAPING UP FOR THE GRAND PRIZE

Turns and Stretches of Savannah Course—Drivers Draw Positions—Preparations for Handling Mighty Crowd.

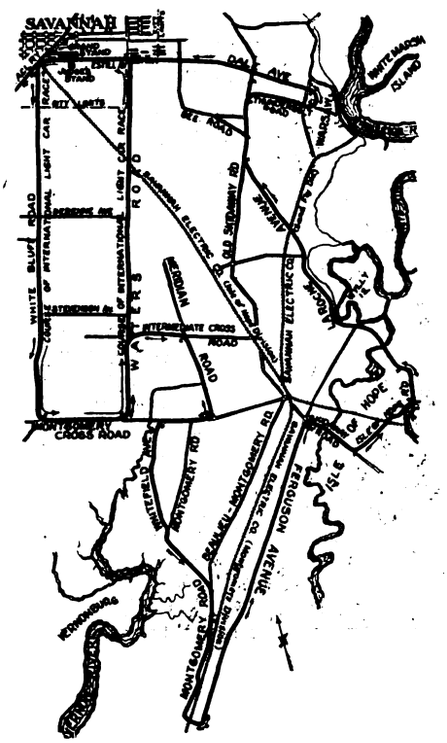
With the Savannah meet but one week off, arrangements are going forward on a large scale to make it a success, and with every prospect that from the competitive point of view at least, it will carry a fulfilment of all the hopes which have been held out for it. Originally conceived by the Automobile Club of America as a foil for the Vanderbilt Cup contest, when that event was ruthlessly shorn of its international character and promoted savagely during the heat of the now forgotten controversy with the American Automobile Association, the peaceful settlement of that difficulty has secured for the Grand Prize race of Thanksgiving Day and the introductory light car race of the day before, recognition which it could have obtained in no other way and practically secured its patronage by such of the northern enthusiasts as care to sever the home ties on the great national home day.

Last April when Savannah saw its first road race, the course was in splendid shape, with the exception that it was narrow in stretches, with one or two rough spots. Inasmuch as $30,000 or more has been spent to widen and bank the circuit and that it will be made as nearly dustless as possible by thousands of gallons of oil, with which it has been soaked, it can be considered without the least hesitancy the finest road course in America, and can rank with the best of European circuits. The Grand Prize course measures 25.13 miles, which will mean that 16 laps over it will make the race 402.08 miles in length. The shorter circuit, or "course within a course," for the light car race, is 9.8 miles around, and will be traveled for 20 laps, or 196 miles.

The setting of the race is highly picturesque. Bordered with the tall pine trees characteristic of the section, which are bearded with great quantities of silver gray Spanish moss, a series of vistas are presented that delight the eye, as the course is toured at moderate speed.

From the grandstand which is within the city limits of Savannah, a well banked turn leads into an absolutely straight stretch some five miles long, known as the White Bluff road. At Montgomery cross roads the route turns into Waters road, and presently is headed back in the direction of the stand. At the end of a short stretch, an abrupt, heavily banked turn to the right is the continuation of the Grand Prize course, while straight ahead is the ten miles quadrilateral which will be used for the light car race. This leads directly back to a right angle turn near the start and finish, over a new laid piece of road.

Following the longer course, the Intermediate cross road leads into Meridian road at a second right turn, and the Vernon River, with its semi-tropical vegetation surrounding it, is approached. Then a third right turn, abruptly made, furnishes a complete reversal of direction momentarily until a right-angled left turn leads into Whitefield avenue and the Montgomery road, where the new part of the course is encountered—60 feet wide and smooth as a billiard table. Two well constructed turns, forming practically a hairpin, lead into Ferguson avenue, where the return journey to



the starting point begins. This section will permit some of the greatest speed of the race when throttles may be thrown wide open and held until a capital "S" turn through the aptly named Skidway road to Isle of Hope road, where six turns, all of which are heavily banked, lead into La Roche avenue. A turn to the right, leading towards the village of Wasson, gives a second hairpin loop back to Delaware avenue, which completes the course back to the grandstand by easy stretches.

Some of the picturesque points on the course are shown on the opposite page, the two upper pictures showing stretches of both ordinary and special road; the latter being the banked turn where the intermediate cross-road turns into Meridian avenue at the county farm, with convict laborers at work. The third panel gives an idea of the stumpy palmettos and the enormous spreading trees along the new stretch of La Roche avenue, while No. 4 shows where a special bank 6 feet high is intended to eliminate the skidding danger. Ferguson avenue has just been oiled, the fifth and sixth panels showing its uniformity. Sixty-two feet wide, and with less than a foot grade, it presents the speediest stretch of the whole course. The two bottom pictures are views of Montgomery cross road where it switches into Whitefield avenue, and the White Bluff road with the final brushing of the surface in progress preparatory to oiling.

Regular practice by the prospective competitors began last Monday, and the course is patrolled daily by 100 flagmen, who keep it clear of invading traffic between the hours of noon and 4 p. m. Between 12 and 1 o'clock, the light cars have the use of the course, while during the remainder of the alloted practice hours it is at the disposal of the drivers of the larger machines.

On Monday of this week, the drawing of numbers for the order of starting in both races took place, there being 20 contestants in the Grand Prize, 6 of whom are Americans, while the light car race numbers 17 contenders. The complete list is as follows:

Grand Prize.

	Driver.	Car.	Country.
1.	Rigal	Bayard-Clement	France
2.	Michener	Lozier	America
3.	Seymour	Simplex	America
4.	Burman	Buick	America
5.	Haupt	Chadwick	America
6.	Nazzaro	Fiat	Italy
7.	Zengle	Acme	America
8.	Hemery	Benz	Germany
9.	Duray	De Dietrich	France
10.	Szisz	Renault	France
11.	Harding	National	America
12.	Cagno	Itala	Italy
13.	Hautvaust	Bayard-Clement	France
14.	Wagner	Fiat	Italy
15.	Hanriot	Benz	Germany
16.	Strang	Renault	France
17.	Fournier	Itala	Italy
18.	De Palma	Fiat	Italy
19.	Erle	Benz	Germany
20.	Piacenza	Itala	Italy

Light Car Race.

	Driver.	Car.
1.	J. Juhasz	S. P. O.
2.	Wm. Hilliard	Lancia
3.	L. G. Bergdoll	Chalmers-Detroit
4.	K. I. Manville	American Aristocrat
5.	F. T. Cameron	Cameron
6.	.....	Isotta
7.	Geo Robertson	Gregoire
8.	Robert Burman	Buick
9.	Arthur See	Maxwell
10.	L. B. Lorimer	Chalmers-Detroit
11.	E. A. Hearne	Buick
12.	Thomas Costello	Maxwell
13.	W. R. Burns	Chalmers-Detroit
14.	Hugh Easter	Buick
15.	Joseph Muntweiler	Maxwell
16.	Earl Jeffers	Buick
17.	C. W. Kelsey	Maxwell

In the big race, Leonard Zengle has been substituted for Patschke as the Acme driver, while the driver of the Isotta in the light race has not been decided upon; Herbert Lytle, who was scheduled to pilot it, having been taken ill with typhoid fever.

Announcement was made late last week that the A. C. A. had decided to award the winner of the light car race a $500 bronze or silver trophy made after one of several designs which the contest committee then had under advisement. This dispelled some

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anxiety which had been manifest lest the winner of this event fail to receive some token of recognition comparable with that awarded the winner of the Grand Prize. In addition to the major trophies, ample inducements are held out to the successful drivers by tire and accessory makers.

Prizes to the extent of $5,000 have been offered by the Michelin Tire Co. for drivers gaining places with that make of tires in the Grand Prize and light car races. In the long race, the winning driver will be awarded $2,000, the second $1,000, third $500, fourth $300, and fifth $200. Prizes in the light car contest for placed drivers using Michelins will be $500 to the winner, $300 to the second, and $200 to the third. The Continental Caoutchouc Co. offers $2,000 to the winner of the Grand Prize, provided his car is equipped with Continentals; with $1,250 and $750 as second and third prizes. In the light car race $500 will be distributed under the same conditions—$250 to the winner, $150 to the second, and $100 for the third. Likewise the Bosch Magneto Co. has offered ample inducements to drivers who carry a Bosch equipment; $500, $250 and $100, are the bonuses offered for first second and third.

Arrangements for the management of the race are probably as complete as have been made for any race ever held in this country. It will be remembered that one distinguishing feature of the stock car race of last spring was the excellency of the policing arrangements. Savannah intends to outdo itself in this respect just now. Complete telephone service, military guards, strict observance of rules as to the maintenance of a clear course, will serve to give the competitors every advantage in the race and also to enable the spectators at the grandstand in keep in close touch with the progress of the events.

A novel feature of the arrangements is the establishment of fire patrol stations at four different points on the course. These stations will have telephone communication with all parts of the course, and be in readiness to send out an automobile equipped with extinguishers, in case a car should catch fire, repeating the incidents of the last Vanderbilt contest.

Twenty or more physicians will be stationed around the course, with fully equipped red cross tents, prepared for any emergency. Arrangements also will be made for a staff of motorcycle couriers.

Arrangements for the accommodation of the visitors have been carried out with equal elaboration. In anticipation of a throng of out-of-town spectators, hotels, lodging houses and private dwellings have been canvassed and listed, and all Savannah is preparing to reap a harvest from the occasion. At that, many of the sojourners will bivouac in the numerous special trains which will be sidetracked "near the grandstand," or, in the case of the A. C. A. delegation, on board the specially chartered steamer, City of Savannah.

A number of railroad and tourist agencies have arranged special excursions to the race and have cut each other's rates ruthlessly in an effort to get the southbound business. In consequence, either one of two things will happen; an amazing number of people will go to witness the race, or else numerous "all expenses covered" and "parlor car special" tours will be financial losses to the agents who are advertising them so profusely. The Pennsylvania, Atlantic Coast, Seaboard Air and other lines will run excursions, while these roads will carry numerous car parties from various cities booked by the tourist agencies. Several large automoblie clubs will send representatives, the Cleveland and Quaker City Motor Clubs being among the number with chartered cars. The "Wall Street Special" and "Business Men's Special," starting from New York City, expect to carry quite a crowd of persons whose business affairs demand that they make a quick trip, in which connection it is promised the latter train will make the jump to Savannah in an even 22 hours.

The Savannah line will provide a pleasant means of making the trip by water, while the Automobile Club of America's chartered steamer will start on Saturday evening, November 21, with perhaps the most elaborate scheme of entertainment of all.



VISTA OF LONG STRAIGHT STRETCH ON LA ROCHE AVENUE

Stricker Killed at Birmingham.

While attempting to make a new 24 hours track record at Birmingham, Ala., on Tuesday, 17th inst., Emil Stricker was thrown from his Renault mount and died shortly afterward. Leon Barrows, his mechanician, was also thrown and badly injured. Stricker had been driving at a rate close to a mile a minute on the mile oval and was alternating with Lewis Strang at the wheel. Strang's explanation of the accident is that when the car skidded on a turn, Stricker's long coat caught in the rear wheel,, pulling him from the seat. Tire failure was not the direct cause, as at first reported, he states. Stricker was a native of Alsace-Lorraine, unmarried, and when in New York lived at the Professional Chauffeurs' Club.

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LOCOMOBILE RECEIVES THE CUP

Festivities Attend Presentation of Vanderbilt Trophy—President Davis Tells the Origin of the Winning Car.

Enthusiasm ran high when the formal presentation of the Vanderbilt Cup was made to Samuel T. Davis, Jr., president of the Locomobile company, at the home of the Automobile Club of America, Broadway and Fifty-fourth street, New York City, on Thursday evening last, 12th inst. Before a gathering of some 300 or more invited guests, Jefferson De Mont Thompson, chairman of the Vanderbilt Cup Commission, presented the trophy on behalf of the donor, William K. Vanderbilt, Jr., accompanied by loud, ringing applause.

"We have waited for five years," he remarked, "for an American car to win this prize that now stands as the one great automobile trophy. We have the car now—American from top to bottom, designed by an American and driven by an American. We have had much to be proud of this year, but nothing more so than this."

In his response, Mr. Davis gave a most interesting chapter of Locomobile history in describing the origin of the car. In 1904, he said, a young Chicago enthusiast, (Dr. Julian P. Thomas, of aeronautic and medicinal fame), who owned a whole fleet of Locomobiles, wanted the Bridgeport company to build him a racer that would beat the world. When the company demurred, the man declared he would have another manufacturer build the car and buy no more Locomobiles. "The customer was too good to lose," continued Mr. Davis. "and he was so insistent that we finally decided to place a prohibitive price on a car we did not want to build. We named $18,000, and he accepted without a murmur, and deposited $6,000 forthwith. Then we had to make good, and we did build a machine for him.

"That first Locomobile didn't beat the world. In fact, it only started in one big race—the Gordon Bennett Cup. It started—that was all it did do. Nevertheless, from that first effort, developed the winner of this year's Vanderbilt race. In 1906 we constructed two racers and the recent winner was one of them."

He then expressed his appreciation of A. L. Riker, the designer, the mechanics who constructed and assembled the car, and last, but not least, George Robertson, who piloted the car to victory, and his mechanician, Glenn Ethridge; mentioning that without a driver of superior caliber, success would be impossible with the best car ever built.

After Riker had said a few modest words, there were loud shouts of "Robertson!" for the gathering wanted a speech from the driver. But while the shouting was at its height, Winthrop E. Scarritt sprang to his feet, and began to deliver his stock speech, harking back as far as the days of the Roman empire and also declaring boldly that the automobile is no longer an experiment—that it has come to stay, and furthermore, that his prophecy of some time ago to the effect that American genius and American brains in building American cars, would some day beat the world, had been fulfilled Again the guests yelled for the winning driver, but again Mr. Scarritt arose; this time to introduce John J. Hayes, winner of the Marathon race at the Olympic games in England.

Hayes received a thunderous ovation, but the Robertson speech that had been anticipated, was not delivered. The modest driver had been "snowed under" by the others.

Ex-Police Commissioner McAdoo delivered an absorbing address on the question of police and motorists, with numerous brilliant touches of humor. Incidentally he made the disconcerting statement that automobilists and the Burglars' Union were on the same par—both bodies forever trying to dodge the police. Also he told why he had inaugurated the scheme of having cycle police wear white caps. At that time people used to observe with a smile that no arrests would be made, because a driver could "spot" a cop a mile away and would slow down; to which the commissioner invariably would reply that that was exactly what he expected. He was not trying to make a record of arrests; he was attempting to make motorists drive at a safe speed. Nine out of every ten accidents in New York City are caused by the failure of drivers to observe and obey the rules of the road, McAdoo declared, incidentally scoring the habitual recklessness of the average taxicab driver. That corners are turned too sharply and in a dangerous manner by many drivers is evidenced by the way so many curbs are worn down at street crossings.

Evidently the peaceful incidents of the past few weeks have resulted in the arrangement of a truce between Jefferson De Mont Thompson and Robert Lee Morrell. That the hatchet has been buried, at least temporarily, was made clear when the chairman of the commission, in a burst of geniality and enthusiasm, proposed three cheers for one who was "unable to be present, a true sportsman—Robert Lee Morrell." With waving arms, Thompson led the cheering in person. Others, absent ones and those who were not, also were lustily acclaimed, but in the exuberance of the moment no one remembered to honor the Cup donor, and about the only name familiar in connection with the contest which was not cheered was that of William K. Vanderbilt, Jr.

A. R. Pardington, vice-president and general manager of the Long Island Motor Parkway, Inc., when called upon, recapitulated the history of the early Vanderbilt Cup contests and stated with no little pride that work on the Motor Parkway would proceed, so that next year would see its completion. Judge E. H. Gary, president of the A. C. A., was another to say a few cordial words. Then entertainment of the combustible variety was distributed, a searchlight photograph was taken following which an Ethiopian singer in a loud pink Prince Albert coat, entertained briefly. Then came the moving pictures.

Results of St. Louis Hill Climb.

After several days of worry and delay, the judges of the hill climbing contest held at St. Louis on Friday, 6th inst., at last reached a decision regarding the winners of the various events. Emulating the example of the Algonquin and other slope tests, the committee of the St. Louis Automobile Manufacturers and Dealers Association in charge of the affair, took the advice of some one who told them that the contest should be decided according to a piston area formula. This was done, but it seems that after the times of the contestants had been duly recorded, the judges did not know just how to plunge into the mathematical part of the game to determine the winners.

They decided that Baldwin, who drove the specially built Stanley steamer, was entitled to the Times trophy and the free-for-all prize cup. Following is the report of the percentages officially given out, showing the order of positions awarded in each class as determined by the formula:

Motor Buggy Class.

Driver.	Car.	Time.	Per Cent.
Allen	Eureka	2:12	10.82
Oliver	Victor	1:53	11.05
Siddway	Success	2:11	19.30

Cars with Piston Area Under 50 Sq. In.

Paine	Chal-Detroit	1:05⅗	5.92
McQuillan	Buick	1:04⅘	6.90
Delaney	Jackson	1:21⅗	8.41

Cars with Piston Area Over 50 Sq. In., and Under 65 Sq. In.

McLain	Apperson	1:00⅗	6.05
Igoe	Moon	1:03	6.85

Cars with Piston Area Over 65 Sq. In., and Under 90 Sq. In.

Tuttle	Stod-Dayton	0:49	6.19
Blumcoe	Stev-Duryea	0:55⅕	7.62
Lewis	Packard	0:54⅘	7.88

Cars with Piston Area Over 90 Sq. In.

Soules	Stearns (4-cyl.)	0:46⅗	7.42
McLain	Apperson	0:44⅗	8.03
Caldwell	Pierce	0:49⅗	8.75
Oldfield	Stearns "6"	0:49⅗	9.00

Free-for-all Event.

		Time.
Baldwin	Stanley	0:40⅘
Baldwin	Stanley	0:43⅕
Woodward	Stanley	0:45
McLain	Apperson	0:46⅗
Cull	Stanley	0:46⅗
Tuttle	Stoddard-Dayton	0:49
Oldfield	Stearns	0:49⅗
Caldwell	Pierce	0:49⅘
Woodward	Stanley	0:55

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FENNER FIRST IN DESERT RACE

Los Angeles-Phoenix Run a Real Test of Endurance—All Four Contenders Survive—Their Exciting Adventures.

One of the most strenuous and unusual contests that ever took place in the West was the "great desert race and sand battle" between Los Angeles, Cal., and Phoenix, Ariz., which started at midnight on Sunday, 8th inst., and finished the following Tuesday. It was won by F. C. Fenner, who drove his White steamer "Black Bess," with H. D. Ryus as alternate, covering the 455 miles in 30 hours 28 minutes net running time. Leon T. Shettler's Kisselkar, driven by Bert Latham and H. Hanshue, was the second contestant to reach the goal, but second prize was awarded to A. J. Smith, who was the third arrival in an Elmore, owing to a time allowance made for delay caused in crossing the Colorado River on a raft. The latter pilot was the only contestant to drive the entire race without relief at the wheel, and covered the distance in 32 hours, 52 minutes actual running time. The Kisselkar was given third place with 35 hours 52 minutes, and Ralph Hamlin's Franklin was fourth. In addition to some side wagers, Fenner won the Republican cup which was offered by a Phoenix newspaper as first prize. This was presented to the driver at a dinner tendered by the Maricopa Automobile Association at Phoenix the following Thursday. Smith was also presented with a silver cup.

The race possessed unusual interest, inasmuch as there were as many distinct types of power plant in use as cars. Gasolene cars of two cycle and four cycle patterns; water-cooled and air-cooled, and one steam car made up the field of contenders. Such a variety in a contest of only four competitors was quite unusual.

From the very start, the contest was most trying. The route led through El Monte and San Bernandino, to Beaumont, where the first stage of desert driving through sand and loose pebbles commenced. Pulling through Palm Springs, Indio, Mecca, and a few other spots on the map, the contestants reached Dos Palmos, 170 miles from the start, where the first checker was located. Hamlin in the Franklin was in the lead up to this point, having gotten that far in 8 hours 61 minutes, with Ryus in the steamer, second in 9 hours 43 minutes, Latham third and Smith fourth.

From Dos Palmas to the Colorado River, the worst part of the trip was encountered. Latham and Hamlin experienced tire trouble and the former had a strained rear axle. At Ehrensburg, where the stream had to be crossed, it was swollen by early melting snows and had to be negotiated on a rather uncertain raft propelled by a quartet of drunken Indians, who had no great desire to work very hard. They managed to get the several contestants into Arizona in separate trips at $8 per trip. Time consumed in crossing this "felly" was noted by appointed observers and later deducted. Just before reaching the ferry all of the contestants strayed from the road and got lost in an irrigation ditch, losing hours in retracing their way.. When Hamlin, the Franklin driver got astray in the pitchy darkness, he decided not to attempt to retrace his steps, but slept until dawn, when daylight helped him to get his bearings. When he at last found his way back to the Los Angeles-Phoenix trail, after losing four precious hours, he hastened on, but in the mean time, the other contestants had secured a lead too big for him to cut down. Fenner and Smith had both halted on the Arizona border after a risky trip across the turbulent river and spent an almost sleepless and uncomfortable night beside a roaring campfire, finally starting on at dawn. Fenner had experienced trouble shortly after leaving Dos Palmas. At that point sand clogged his engine and prevented him from getting up any steam at all. His burners simply got red hot without having the desired effect of making the necessary steam. Two pipes of the car which lay one upon another were melted, and a delay of an hour was occasioned in making a repair.

In order to secure better traction, Smith, who drove the Elmore, rigged a plank on the rear of his car, upon which he made his mechanician sit and it was said to have worked like a charm, from the driver's standpoint, though the mechanic had a different view of the matter.

From Ehrensburg it was a long plug over many miles of sand and rocks, through Quartsite and Salome, until Buckeye was reached miles beyond,where a guide led the way and marked the trail into Phoenix.

Hamlin's "Greyhound" Wins at Phoenix.

Following the desert race from Los Angeles, Cal., to Phoenix, Ariz., the Maricopa Automobile Association held a track meet at the latter city on Wednesday, 10th inst., in connection with the Territorial fair. This was the first track meet Phoenix had ever witnessed and several thousand persons attended. The "feature" event of the day, which was a 10 miles brush open to the four contestants who had driven in the desert race, was disappointing, inasmuch as only two of these started, Hamlin in the Franklin "Greyhound," and Latham in the Kisselkar. A Reo was entered to help fill out. Hamlin, who won the long endurance run of the previous two days, got the Greyhound working well and succeeded in ripping off ten miles in 10:41, and winning the event from Latham.

In a ten miles match between a Buick and a Tourist car, Fremeau, handling the latter, easily disposed of his opponent, lapping him before the finish.

DISQUALIFIED FOR USING DOPE

Denver Endurance Award Altered Because of Ether in Swanbrough's Fuel—Colburn Gets the Prize.

As a result of an ill-advised effort to win the economy test promoted by the Denver Motor Club on November 7th by means of fuel which had been "doctored," E. W. Swanbrough, who was first announced as the winner, was later disqualified and set down at the foot of the list of the 18 survivors. As told in last week's Motor World, Swanbrough, driving a Corbin car, covered the prescribed distance of 112 miles from Denver to Greeley and return, on 2½ gallons of gasolene. This was in accordance with the original report of the contest committee, which awarded both the Ralph W. Smith cup and the Denver Motor Club cup to Swanbrough. On the following day, however, a protest was filed by the Colburn Automobile Co., which had entered a car, charging that Swanbrough's gasolene had been tampered with. The protest was allowed and upon chemical analysis, fuel in the tank of the disputed car was found to have been etherized. The original award was promptly nullified and the dishonest driver was notified that in the future he will be barred from competitions held under the club's auspices.

Inasmuch as the Colburn car was credited with the best percentage, aside from that of the disqualified car, (4.89), the Smith cup was awarded to D. B. Colburn, who drove it. This percentage was determined by formula, taking into consideration the weight of the car with passengers and the weight of gasolene consumed. The club's prize, which was for the least consumption of gasolene, regardless of weight or percentage, was awarded to F. W. Alkire's Ford, this car having consumed 16½ pounds of gasolene, or slightly more than 2½ gallons. In the percentage showing, D. L. Moody's Pope-Hartford was second with a score of 4.817, and George A. Markwell's Stevens-Duryea was third with a score of 4.812.

New Course for Los Angeles Hill Climb.

Instead of making use of the old Box Springs course for the annual Thanksgiving Day hill climb at Los Angeles, the Automobile Dealers Association of Southern California has selected a new slope for this season's contest. The projected route is through open country and does away with the dangers encountered heretofore on the public thoroughfare, where the crowds have been too great for safety. No curves or turns are to be found on the hill to be used in the contests to be held on the 26th and the average grade is about 12 per cent.

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THE INDUCTOR TYPE OF MAGNETO

Daring Example of Reversed Arrangement of Elementary Organs—Remarkable Simplicity of the Ford Device.

So rapid has been the development of the high tension type of magneto during the past two or three years that it is difficult for the layman to keep fully posted on the points of finer theory which underlie it. One of the more recent systems to come into use is sometimes known as the inductor type, in which the arrangement of the elementary organs is practically a reversal of that familiar in the more common instruments of its class. This system is best understood if it be considered as equivalent, electrically speaking, to an ordinary magneto in which the armature is held stationary and the magnet caused to rotate around it. By this means the use of rotating coils and in fact all rotating conductors except such as are necessary to the distribution of the current are dispensed with. An unusually daring and attractive example of the type in question is that embodied in the construction of the new Model "T" Ford cars, and developed in connection with the design of that vehicle.

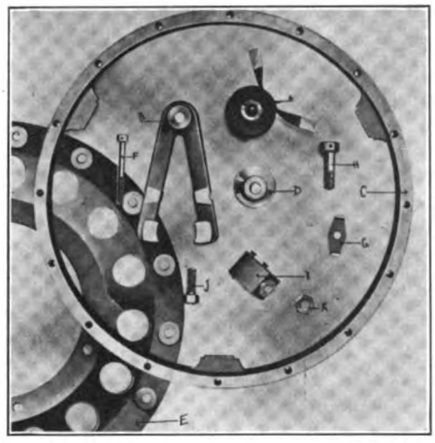


Fig. 2

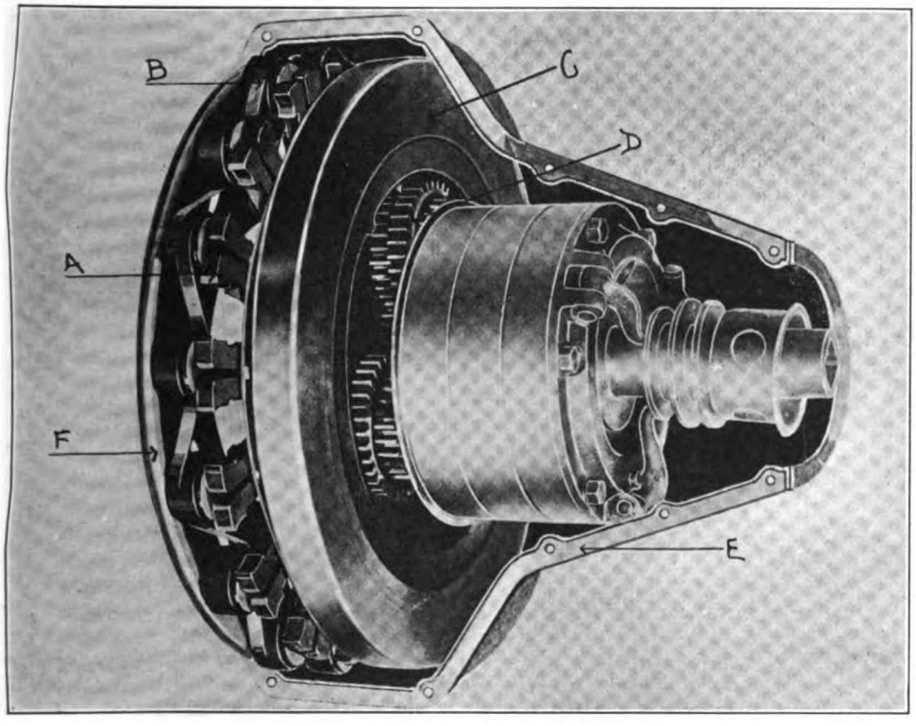


Fig. 1

As already told in connection with the description of the complete car recently published in these columns, the magneto is incorporated directly in the fly wheel and power plant housing construction, where it is not only protected from the invasion of destructive foreign bodies, but also is most effectually concealed. The portion of the device, B, Fig. 1, corresponding to the armature of the usual form of magneto, is mounted in a fixed position and positively attached to the housing, E-F, which extends from the crank case of the motor to include the change gear group, D, in the unit plant arrangement. The moving part, A, which corresponds in its electrical purpose to the magnet of the more common pattern, is incorporated into the fly wheel itself, C, and by virtue of its own weight makes possible the lightening of the fly wheel without reducing the equalizing effect upon the motor in the slightest degree.

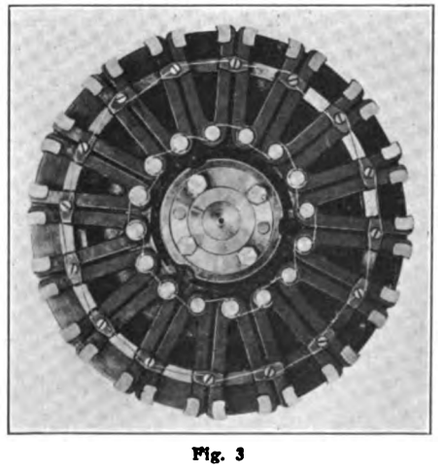


Fig. 3

The components of the magneto, shown in Fig. 2, are seen to be of the simplest possible description. The stator, or stationary part comprises a spider attached to the main housing and mounting a series of small coils, A, which are connected in series. Whenever the fly wheel turns, current is generated in these coils, and so throughout the ignition system, by the passage across the ends of the coils of a series of small magnets, B, which are mounted on the fly wheel by means of the ring, C, and the various locking devices, shown in detail. The magnets are connected in such a way as to form the necessary "magnetic circuit," thus corresponding to the complete magnetic enclosure of the armature in the ordinary form of magneto.

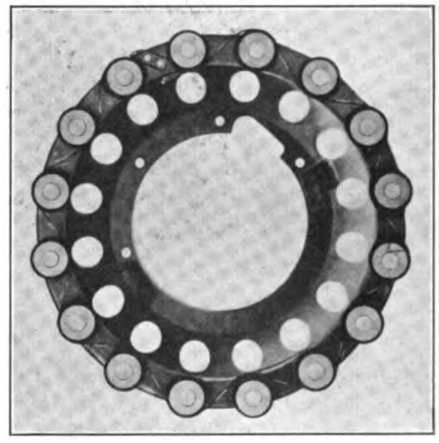


Fig. 4

A better idea of the arrangement may be obtained from Fig. 3, which shows the rotor or inductor complete and mounted on the fly wheel. The view is from the forward end of the part and clearly indicates the relative position of the poles themselves which pass directly over the windings of the stator. This is shown in Fig. 4, ready to be attached to the casing.

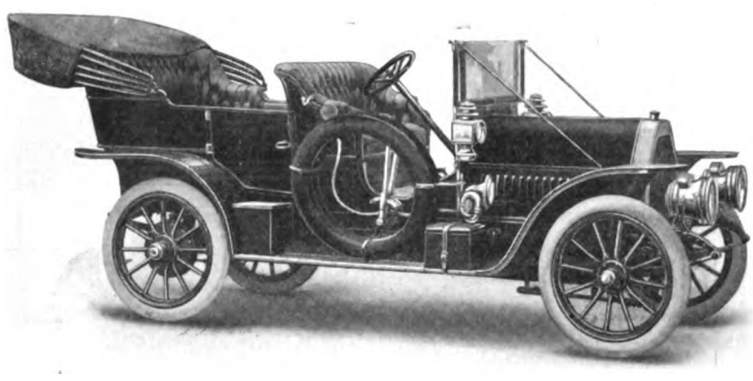
Aside from the advantages derived from the compactness of the arrangement and its protected position, a number of other considerations point to its excellence. Thus the absence of moving gearing of any sort, the elimination of the commutator, as well as of the moving wires, brushes and contacts, constitute features which are of the greatest value from the standpoints of simplicity and economy. Unlike the conventional forms it offers no temptation to the inexperienced tinker and is little likely to suffer from this source.

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NEW JEWEL MODEL ANNOUNCED

Seven Passenger Touring Car the Latest Addition to the Line—Special Details of Design and Equipment.

Originally interested in the production of a peculiarly effective type of light runabout which possessed a number of unique and original features, the attention of the Forest City Motor Car Co., Massillon. O., later was turned to the evolution of a larger car known specifically as Model "G." Early last summer a very attractive addition to this took the form of the Model "40" roadster, a still later and newly announced



JEWEL MODEL "40" TOURING CAR

supplement to which is the Jewel "40" touring car, possessing many of the features of the roadster model, but mounting a seven-passenger body of most acceptable delineation, though exhibiting no striking departures from the routine of current practice. Mechanically, the car reveals these specific points: a 4¾ by 5 inch Rutenber motor of the four-cylinder, vertical pattern; self-contained system of lubrication with constant level pump enclosed in the crank case; double ignition as a regular equipment, including the Bosch high-tension magneto, Connecticut spark coil and Exide accumulators. This equipment is complete to a duplicate set of plugs, either series of which may be brought into action by means of a switch which is conveniently located on the toe board. The transmission is of the propeller shaft type, with three-speed change gear of the selective order, and full floating axle.

The front axle is a single piece drop forging of I-beam section. The front wheels are mounted on Timken roller bearings, as are the steerings knuckles. The rear axle, and transmission mounting also is of the same pattern. The wheel base is 120 inches and the wheels are 36 inches in diameter, shod with 4 inch tires in front and 4½ inch in the rear. The complete vehicle, with equipment, weighs 3.000 pounds, or thereabouts.

From the accompanying picture of the car may be seen its unusually roomy character—a feature which is brought about at once by the employment of the long wheel base, and by placing the rear seat well back of the rear axle. By this means ample foot room is secured, as well as plenty of tonneau space for the extra seating required to bring the capacity up to requirement, while it also serves the happy purpose of allowing ample entrance to the tonneau without crowding the front seat toward the dash. It will be observed that the design of the hood, though arranged to afford ample motor space is not such as to be obtrusive.

An unusually broad equipment is included with the machine, including as it does, the full lighting installation, with 9-inch searchlights, and gas tank; double tire irons and trunk rack in addition to the tool outfit. In the way of an option, choice is offered the purchaser of no less than four distinct makes of tire.

One-Piece Screw Driver, All Steel.

Among the chief features of the new "all steel" screw drivers which are being produced by the Billings & Spencer Co., of Hartford, Conn., is the fact that they are one-piece products, including the handle. Each one is a drop forging, and the handle,



instead of having wooden side pieces, as erroneously stated in a previous description, consists of four longitudinal flanges from the shank itself, as shown in the illustration, affording a grip that is peculiarly firm and powerful in the hand. The new form of screw driver is supplied in eleven sizes.

Machinery for Assembling Wheels.

Assembling automobile wheels entirely by machinery has become possible through the exploitation by an Ohio company of a newly invented system designed for that purpose. Being entirely automatic it makes possible a considerable increase over the ordinary rate of production.

AUBURN ANNOUNCES NEW MODEL

Neat Condensation of Touring Car Lines in Vehicle of Moderate Proportions—Its Double Opposed Motor.

After seven years of unostentatious concentration on the production of a car of moderate power and price the Auburn Automobile Co., Auburn, Ind., has developed a machine which in many respects presents features of peculiar merit in the enormous field to which it is designed to cater. Although one of the numerous products of the middle west which are unfamiliar to many outside their own immediate vicinity, it is well worthy of study, since in simplicity of construction it represents a continuance of a number of excellent features of the light runabout of former popularity in common with the "set-up" and general characteristics of the more elaborate high powered product.

In general appearance it presents a rather neat condensation of the conventional touring car lines, the seats being of ample size, comfortably arranged and so spaced as to afford ample foot room. The bonnet is of the "continental" type with large radiator in front affording no less than 143 square feet of cooling surface, and the mechanism is enclosed beneath by a protecting boot.

The power plant comprises a double opposed motor of 24 horsepower rating, and with cylinder measurements of 5¼ by 5 inches. Transmission is by center chain—a system of meritorious simplicity—with a two-speed, planetary change gear in which the high speed relation is secured by means of a multiple disc clutch. Braking is done through the rear wheel hubs, and the mechanism of control involves a simple arrangement of pedals together with a single side lever.

The frame is of pressed steel, the spring semi and full elliptical, front and rear, and of five and seven leaf construction, respectively, while the axle mounting is entirely anti-friction consisting of Hyatt roller bearings in the live rear member, and ball mountings in front. The major specifications are: wheel base, 100 inches; tread, 56 inches; and tires, 32 by 3½ inches, equipped with detachable rims.

Soap as Lubricator for Clutches.

Lubrication of clutches of the plate or multiple disc type is ordinarily supposed to be best accomplished by the use of a special grade of oil such as recommended by the makers of the car only after reliable and presumably exhaustive tests. A foreign authority, however, is responsible for the statement that "two tablespoonfuls of soft-soap dissolved thoroughly in half a pint of boiling water is better than any oil, and prevents glazing."

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GUARDING AGAINST FREEZE-UPS

Simple Methods of Adapting the Cooling Mixture to Weather Conditions—Uses of Alcohol and Glycerine.

It almost invariably happens that the first cold snap of the fall finds some innocent motorists unprepared for the inevitable and results in the shelving of their cars while repairs necessitated by the freeze-up are being carried out. Such accidents are all the more disgusting because they not only deprive the owners of the use of the machines at a season of the year when they offer the most alluring inducements to recreation seekers, but also because they are as needless as they are provoking and expensive. Several years ago the Motor World published an account of a series of very careful experiments to determine the most suitable precautions looking toward the prevention of freezing, as a result of which it was concluded that wood alcohol and glycerine mixed with water in certain proportions varying with the temperature conditions to be met would serve to best advantage. Although numerous preperations designed specifically for the prevention of freezing have been put on the market since that time, it is significant that the use of these simple commodities remains unquestioned in its value.

A bulletin recently issued by the Association of Licensed Automobile Manufacturers gives confirmation of the principles involved and practically reviews the steps by which original conclusions were reached. Based on the results of the early tests the recommendations given may be depended upon as being perfectly trustworthy.

"Wood alcohol was chosen for the first experiment," relates the bulletin referred to, "because there was not the slightest chance of it injuring any machine. A set of laboratory freezing experiments were made to determine what percentages of water and alcohol would freeze under artificial conditions. The results showed that it is possible to use alcohol and water mixed to resist almost any degree of cold.

"Then the question of whether alcohol would separate from the water and waste away so fast as to make the expense prohibitive, was taken up. It was felt that considerable alcohol might be lost on mild days. A water-cooled automobile was taken and seven gallons of water-alcohol mixture, 18 per cent. alcohol, put in the cooling system. By connecting to the top of the radiator a bottle, into which a pipe led from above the water level, it was found that except under extreme conditions, such as on a mild day, allowing the engine to run without a fan while the machine was standing still, no vapor at all arose.

"This led to the thought that it might be possible to close the cooling system entirely in cold weather, obviating any chance of loss by boiling away. A pressure gauge connected to a cooling system so closed, indicated a pressure of only six pounds under very severe conditions.

"It is also possible that many machines that have relief tubes can be run with a closed system. The safest way to find this out in an inexpensive manner is to take a small bit of rubber tubing, fitting the end of the blow-off pipe, put a wooden plug in one end of the tube and slip the other end over the pipe lightly. Any pressure that could injure the machine at all would blow the tubing off and prevent injury.

"When the temperature was as low as 15 degrees Fahrenheit below zero, a mixture of water and alcohol—33 per cent alcohol—resisted freezing perfectly, even when the car was left outdoors all night. With the temperature around 50 or 60 degrees Fahrenheit, this mixture will boil slightly.

"It is not probable that the temperature will drop below 10 degrees above zero before the first of December; in which case 15 per cent. of alcohol in the mixture is enough. As the season progresses and zero temperatures are likely, nothing less than 25 per cent. of alcohol is safe.

"The combined use of glycerine and alcohol mixed with water solves the question for both hot days and cold days; the boiling point of glycerine, being higher than that of water, will balance the low boiling point of alcohol, so that the boiling point of the mixture will be reasonably high. As the percentage of glycerine required to meet a given temperature is much larger than the required percentage of alcohol, and as a matter probably of comparative cost, a mixture of alcohol and glycerine for use in the water is better, although glycerine slowly but surely destroys rubber tubing connections. A mixture of water and glycerine—30 per cent. glycerine—will freeze at about 15 degrees Fahrenheit. To be safe at 10 degrees below zero, about 55 per cent. of glycerine in the water is necessary.

"Twenty-five per cent. of half alcohol and half glycerine, added to water, will resist freezing at eight degrees Fahrenheit. 30 per cent, of half alcohol and half glycerine, added to water, will resist freezing at practically 10 degrees below zero.

"When the half and half mixture is used, the best results will be obtained by adding a small quantity of wood or denatured alcohol from time to time, as the weather gets colder.

"The right way to handle the cooling mixture is to find out the equation for your own car, using all the alcohol you can stand without boiling the mixture on mild days sure to be met in winter in this climate Some machines will stand all alcohol, that is, mixed with water; others will not and glycerine must be used to keep up the boiling point."

UNSOLVED PROBLEMS OF DESIGN

Dugald Crelk Outlines Future Experiment for the Engineer—The Existing Shortcomings of the Motor.

Among the better informed class of engineers the present day motor car is recognized as a very creditable working hypothesis for future developments rather than as a complete and wholly satisfactory mechanism. A large proportion of the difficulties which confronted the earlier designers with motoring in all its phases are well aware that the department of design is still contemplating a number of problems which are far from easy to cope with. Several of these problems, Dugald Crelk discusses in a presidential address recently delivered before the Incorporated Institute of Automobile Engineers, of Great Britain. "Ever since 1903," this eminent authority observes, "marvelous progress has been made, and most of the difficulties of the engine, clutch, change-gear and transmission have been met with such success that the flexible and smooth-running car of to-day appears to many so desirable as to present no further problems for the energy of the automobile engineer.

"To others the present cars appear to embody only partial solutions of many problems. The clutch, for example, even in its best form, is a contrivance which should be abhorrent to the soul of the mechanic. It is a practicable mechanism, no doubt, which causes less damage to transmission gear than would be expected, but this is largely due to the excellence of the material of the modern car and the intelligence of most car drivers.

"It has long seemed to me possible to design a pneumatic clutch connecting the engine and the driven shaft, so that no violent shocks could reach the transmitting mechanism. Such a clutch would consist essentially of two or more cylinders mounted on the end of the driven shaft and rotating with it, and a crank on the end of the engine shaft connected to two or more pistons working in the rotating cylinders.

"Change-speed gear also seems to be a very inferior mechanical device for varying the effort made possible to the road wheel. This has been much felt by motor car designers, and perhaps more mechanical ingenuity has been expended by them on various methods of getting a wide range of intensity of wheel effort without changing gear than on any other part of car mechanism. The system of gear changing by sliding toothed wheels, notwithstanding its apparent mechanical crudity, has proved to be the principal survivor in the struggle, and its efficiency of action has certainly been greatly improved. If we must have gear changed at all, the quiet and easy gear-change of to-day leaves little to be desired.

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"Other efforts have been directed to the improvement of the petrol engine itself, with the object of dispensing with change of gear ratio as much as possible, and accordingly this mode of development has produced the moderately high-power car of today, with its direct drive, live axle, and highly flexible engine. Success in this direction requires an engine capable of giving the maximum torque required by the road wheels on steep hills while geared on the direct drive, and, of course, it involves a powerful engine which runs at a very light load at customary speed on the level. For the greater part of its running, the engine will be only developing about one-fourth of its maximum power in order that the full power may be available for hill-climbing, without requiring change of gear. The necessity of carrying about this heavy and powerful engine, for but a small use of its full power, has been justly recognized as a disadvantage, and many methods have been devised for temporarly increasing the driving torque to be obtained from a small engine. Such methods include: The petrol-electric car, in which an accumulator supplies an electric motor, giving power to the driving shaft when the resistance to motion increases sufficiently, while the electric motor acts as a dynamo, and charges the accumulator when the engine is running under conditions of lighter load, and proposed air reservoir cars, having pumps to fill up the reservoir, which, in turn, assist the engine when required.

"Other inventors seek to increase torque by providing air pumps supplying the air and petrol charge to the engine under a pressure above that of the atmosphere. Daimler was the first to propose this, and he has been followed by many, including Dawson and O'Gorman. They, however, require a heavier engine to withstand the higher maximum pressure of explosion; and although the cylinder dimensions remain small in reality, the weight of the engine, to provide the same margin of safety, requires to be increased as much as it would be by using larger cylinders.

"So far attempts to increase the torque of a small power light engine have failed; it is very desirable, however, to persevere, as it appears probable that a much better type of car is possible, and many advantages to the public would follow success.

"I have made experiments with super-compression devices of different kinds, which convince me that it is possible to arrange for the increase of the mean pressure upon the piston at the slower speeds of rotation by about 50 per cent. without increase of maximum explosion pressure. To do this it is necesstry not only to increase the charge supply pressure as proposed by Daimler, but also to increase the volume of the compression space. By the simultaneous increase of charge pressure and compression space volume, torque is greatly increased, although, of course, expansion is diminished, and the theoretical economy is somewhat reduced. My experiments have been made on relatively large gas engines, two engines of 22 inches cylinder diameter, one of 10 inches diameter, and another of 7 inches diameter, but the reasoning applies to small petrol engine cylinders. Such an increase of mean pressure as I have suggested would enable cars of moderate power to dispense almost entirely with change of speed gear. My present car, for example, would be able to climb all the hills in my district without changing from the direct drive on the third speed.

"If the pumping arrangements could be operated by a small separate petrol motor nicely balanced and always running, the main engine could be arranged to act as a compressed air engine only when in traffic or on hills at slow speed. The added engine and pumps increase the complication, but it seems to me possible to reduce total weight by the reduction of main engine dimensions and the simplification of gear-box arrangement. A car which could be stopped and started in traffic without the need of the clutch, and could stop on a steep hill in the same way, with the certainty of starting smoothly, would combine the advantages of both steam and petrol engines. . . . .

"As a power producer the horse must be considered as a motor of ideal flexibility; the horse can develop his 33,000 foot-pounds per minute, either by a small pull exercised through a long distance in the time, or a heavy pull through a short distance. He can either give a light or heavy pull, and develop the same total power either by motion at a higher or lower velocity.

The petrol motor cannot do this; within wide limits of speed no substantial variation of mean pressure on the piston follows change from high speed to low speed.

Assume a petrol engine to be running at 1,000 revolutions per minute under a mean effective pressure of 90 pounds per square inch, developing an indicated power of, say, 40 horse; then if the speed be dropped to 500 revolutions per minute, the mean pressure of 90 pounds will remain practically unchanged; if the valves are properly proportioned there will be little change in mean pressure. The engine at half speed will then indicate only 20 horse. To comply with ideal flexibility, 40 i. h. p. should be developed, and to do this 180 pounds mean pressure would be required. In the sense of ideal flexibility the petrol motor is conspicuously deficient.

"Assume, now, a steam engine of either the simple or compound type, to be supplied from a steam boiler capable of supplying steam at a given pressure and rate. The steam engine may consume the whole of its supply either at a high or low speed; take the same speed variation as supposed in the petrol engine, 1,000 and 500 revolutions per minute. At the high speed, a given point of cut-off will utilize the whole steam supply, and give, say, 40 i. h. p. at 90 pounds more pressure. At the low speed, 500 revolutions, the cut-off must be later to use the whole steam generated, and then the steam weight used per revolution will be doubled; the mean pressure will not be doubled, but it will be greatly increased. Say that it rises from 90 to 150 lbs. per square inch, then the i. h. p. at half speed will be 33⅓. The steam engine thus possesses considerable flexibility, although it has not the ideal flexibility assumed to exist in the horse.

"True flexibility in a motor requires the property of producing maximum power at both high and low speeds, and this property is to some extent present in the steam engine, and almost absent in the gas or petrol engine.

"What is commonly called flexibility in a petrol motor is in reality controllability, which is a different thing.

"The steam engine could be more closely followed in this matter by supplying the petrol motor with a constant or even an increasing weight of charge as the speed of rotation falls in the manner which I have already suggested. Recent improvements in the petrol engine, such as very large inlet and exhaust valves and very light pistons and moving connections, have made it possible to greatly increase the total power to be obtained from cylinders of given dimensions by permitting of longer strokes and higher speeds of rotation, while keeping up the weight of charge dealt with per stroke. . . . .

"While even better results may be desired on the two points—clutch connection and true flexibility—another important matter requires persevering attention. I refer to the exhaust products discharged into the air of our streets; the rapidly increasing use of motor cars raises study of the carburetter to a position of importance.

"It has been clearly proved that the product discharged from an engine when the mixture of petrol and air is properly proportioned is innocuous in its chemical nature; combustion is almost complete; but when proportion is incorrect, and vaporizing action imperfect, the products are noxious. Carburetters at present proportion correctly at two or at most three points of load and speed; at intermediate points some deviation occurs.

"The problem of proportioning accurately and automatically for all speeds and loads is one of great difficulty, and existing devices provide an imperfect solution. It cannot be too firmly borne in mind that a mixture of constant composition is required at low and high speeds and low and high loads.

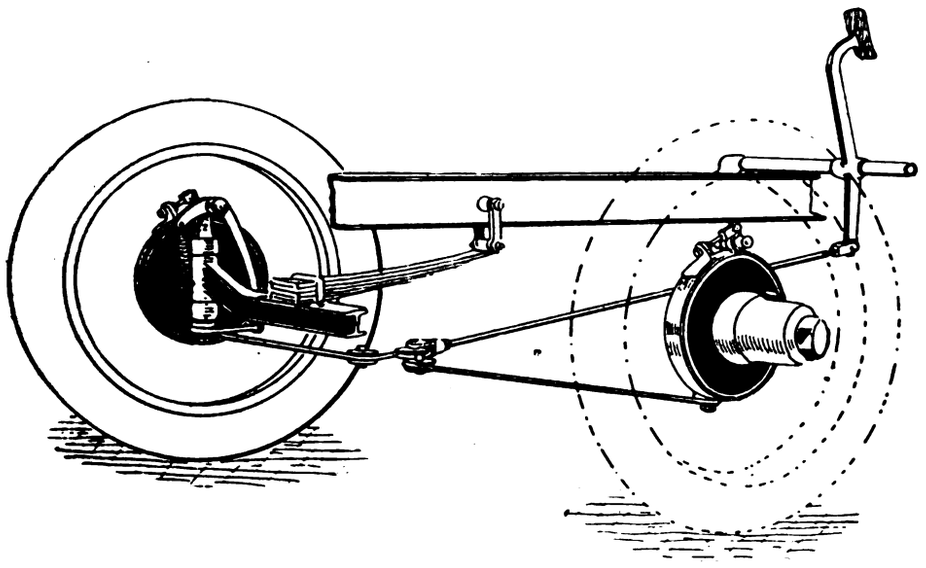
"Methods of carburetter control which depend entirely on engine speed cannot produce accurate results, because the engine may run at the same speed under quite different conditions of throttle opening. What is really required, as I have already pointed out, is some method of controlling depending solely on the charge volume which passes the jet."

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FRONT WHEEL BRAKES UNDER TEST

Details of Foreign Device Designed to Prevent Side Slip—Results of Severe Road and Hill Trials.

It is somewhat unfortunate that the subject of front wheel braking has been given so scant attention by American engineers as a class, as it is commonly recognized to be fraught with great possibilities in the way of preventing skidding and in equalizing tire wear—both, elements of expense and danger which the user would be glad to see disposed of to better advantage. In



England, where front wheel braking has been used to a certain extent upon tri-cars, there is a disposition to regard the subject a little more seriously than here, with the result that several systems have been devised. One of these which has recently come to notice is the Allen-Liversidge, which is so contrived that it may be operated irrespective of the position of the steering knuckles.

The general arrangement of the brakes in question may be seen from the accompanying illustration, shown by the Autocar, in connection with an account of a recent trial of the system. "In the Liversidge brakes," remarks the print in question, "the steering pivots are inclined, so that a line drawn through their centers, if produced, would reach the center line of the tire at its point of contact with the road. This, it is claimed, is equivalent to placing the brake drum head in the center of the wheel—a position which is the ideal one if the steering is to be unaffected. Levers of considerable length are fitted to exert the greatest possible amount of power upon the brake drums with the smallest possible movement of the wires."

By the use of a central drag link attached to the pedal and a cable equalizing device, the pull is transmitted to the levers of the individual brakes, which are arranged to swing with the knuckles and therefore preserve a constant relation to the drums at all times. The equalization compensates for the swing of the knuckles and is so contrived that it is possible to turn the wheels without interference even when the brakes are applied. In fact, according to the observer, no tendency to hinder the steering action was manifest during the test except such as was caused by the side-slipping of the front wheels themselves, due to their loss of traction when retarded and still urged forward by the momentum of the vehicle as a whole.

One of the principle advantages of front wheel brakes is their utility in correcting skidding tendencies brought about by the application of the rear wheel brakes. Referring to a trial intended to demonstrate this particular advantage the writer quoted mentions a stretch of road "having a surface which was distinctly treacherous."

"The back brakes were applied suddenly," he says, "and the car described a quarter of a circle, but before it had time to go any further—and it was fairly on the swing at the time— the back brakes were withdrawn and the front brakes applied, and the car came under control as if nothing had happened." On a hill test over a gradient of approximately 1 in 8, the front brakes alone were found to be sufficient to hold the car satisfactorily.

The makers of this arrangement are already preparing to fit front brakes to any car in place of the more usual propeller shaft or counter shaft brake, and so great is their faith in the system that they offer to remove it and replace the old foot brake in the event of failure in action. The alterations required in the car include a change in the angularity of the knuckles or pivots in cases where the pitch is not sufficient to bring the tread line of the front tires into the projected axis of steering movement, while in some cases the stub axles also require to be reinforced.

STUDYING THE SLIPPAGE PROBLEM

Facts Developed by Long Series of Tests on the Brooklands Track—How Speed Increases Amount of Slip.

How far the frequently excessive wear of the rear tires of a motor car may be governed by the slippage of the wheels, and what factors may be taken into account to reduce this element of annoyance and expense is somewhat difficult to determine at the present time. Certain it is that because of the tractional stresses upon them, the rear tires do slip a good deal more than the front ones and that this results not infrequently in tearing the casings when rough roads are being traversed while under even the best of conditions, it results in a rate of wear which is unpleasantly high.

Hitherto the subject has been given scant attention by engineers. Within a year or so, however, a series of tests have been made on the Brooklands track in England to determine the necessary slippage data on a basis of wheel revolutions, comparing the number of turns made by front and rear wheels, respectively in covering a given course under certain conditions. These results were presented without analysis at first and therefore were of small value to the layman. Reduced to general terms by Henry Souther, technical expert of the Mechanical Branch of the Licensed Association of Automobile Manufacturers, these figures go to show that under the conditions of test the actual slippage may vary from 0.3 per cent. at a speed of 40 miles per hour to as much as 5.4 per cent. at 90 miles an hour.

The tests in question were made on the ideal surface of the Brooklands course, and with round tread tires inflated to racing pressures, so that the results form merely a basis for further investigation. How far the actual slippage on the common highway would be influenced by the altered condition of the road surface is indeterminate just at present. At the same time, these experiments are of great value in calling the attention of motorists and engineers to the fact that the actual amount of slip is really much greater than might be anticipated.

A peculiar fact brought out in this connection is that in making turns the inside wheel tends to slip a very little more than the outer one. According to Souther's analysis of the results, this is accounted for by the fact that the centrifugal tendency due to the curvilinear motion of the machine as a whole tends to lighten the pressure on the inner wheel, thus reducing its adhesion and so permitting it to slip a trifle more than the outer wheel, which, of course, has additional pressure brought to bear upon it in proportion to the lightening of the inner

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one. The possibility of excessive differential action is taken into account.

With this basis to work upon, it is greatly to be hoped that further results of a more useful nature will be obtained within a short time, in which varying conditions of road surfaces, tire pressures, weight distribution in the machine, and the variation of slippage with different tire tread surfaces, are taken into account in their proper relation. The subject is of vital importance to the industry as a whole, because of the universal interest attached to tire economy. The British investigators are now well armed for research, having devised special apparatus for the purpose of recording the revolutions of the individual wheels, together with the distance traveled, the speed of the car, and other necessary data. But up to this time little or nothing in this direction has been done in America.

The percentages of slip recorded in the primary tests already reported, as deduced by Souther, are as follows.

0.3 for a speed of 40 miles per hour.
0.6 for a speed of 50 miles per hour.
1.1 for a speed of 60 miles per hour.
1.8 for a speed of 70 miles per hour.
3.7 for a speed of 80 miles per hour.
5.4 for a speed of 90 miles per hour.

Pyrotechnic Disclosure of a New Danger.

A hitherto unsuspected element of danger to the motorist has developed in the broken non-skid chain with flapping ends. One phase of the danger it presents was illustrated in New York City on Sunday evening last, when a dangling tire chain on a car driven by John Casey caught and lodged in the slot of the northbound tracks of the Broadway surface line, at Thirty-fourth street, and when a strip of the chain hung down and touched the power rail, a display of pyrotechnics and a roaring sheet of flame swept along the line for a distance of three blocks, making the Great White Way still whiter. The driver was thrown from his seat when the links caught and the car had to be pushed off the track to prevent it from being burned. For more than 20 minutes, flames sputtered away until a wrecking crew arrived and pried the slot open, releasing the piece of chain. As such devices frequently weaken and break, particularly in the tread portions, a ragged end is liable to be pressed into a slot or to become otherwise entangled, with the danger of a repetition of accident of this sort.

Commission Fixing Horsepower Basis.

Horsepower in all its vagaries and uncertainties is now in a fair way to be cleared up and put upon an equitable basis. A commission of British engineers has been appointed to digest the matter in its fullness and recently went into executive session in London. The commission is composed of members delegated by the Royal Automobile Club, the Society of Motor Manufacturers and Traders and the Institution of Automobile Engineers.

EXPENSES OF THE PRIVATE CAR

Cost of Maintenance and Operation Shown by an Owner's Statistics—Suggestions for Economy in Tire Upkeep.

Maintenance and operating cost for the private owner, while enjoying a temporary lull as a subject of discussion in a competitive way among manufacturers, is nevertheless a matter of diligent inquiry by prospective buyers. In response to a request for figures as to the cost of running a car, based on experience, the owner of a large machine, driven by a chauffeur, has contributed an account of his own expenses, together with some excellent recommendations as to keeping down the tire bills.

"Since 1900 I have owned cars which have made more than 60,000 miles. Since April, 1906, I have operated one seven passenger car 30,000 miles and have paid every item of cost by check, and I have recently compiled the statistics of cost," he declares, by way of qualification. "The items of direct cost, which vary directly with the mileage, are:

	Cost a mile.
Tires	5.0 cents
Gasolene	2.7 "
Lubricating oil	.2 "
Incidentals	.9 "
Total	8.8 "

"My car averages 1,000 miles a month. It makes a yearly average of 7½ miles a gallon of gasolene. It makes 205 miles a gallon of lubricating oil.

"Disregarding interest and depreciation, which is largely a matter of judgment, and assuming the car to be owned in a suburb of New York City and that it makes an average of 1,000 miles a month, the following is my estimate of cost a year:

Tires	$500
Gasolene, oil, acetylene and repairs	500
Chauffeur and rental private garage	1,300
Direct cost a year	$2,300

"The most difficult item to keep down to the above figures is 'tires.' I now use demountable rims and 4½-inch tires exclusively. I carry in the rack two blown up tires upon their demountable rims, and have a seventh tire and rim habitually at the repair shop. The secret of low tire cost is continual repairs made as soon as needed. With seven demountable rims and tires it is no trouble to keep the tires always vulcanized and in perfect repair. Whenever a cut reaches the canvas that rim and tire should go at once to the repair shop and a spare one should be substituted. Such repairs cost but little and the repaired tire, blown up on its rim and ready for use, can be returned to you the next day. My chauffeur is as good as they grow them near New York, but until I got demountable rims and discovered a reliable tire repair shop I found it impossible to keep my tires always in proper shape. Insist upon vulcanized repairs whenever you can see the canvas; keep your tires pumped to 80 pounds and have seven identical demountable tires and rims, and you can make the tire cost only three or four cents a mile."

Cleaning and Adjusting Spark Plugs.

Most motoring novices learn how to clean and adjust spark plugs properly without much difficulty, but frequently are surprised to discover that their efforts are of small avail. One reason for this is that not infrequently when endeavoring to insert a plug in a hot motor the nervous driver knocks the sparking end against the cylinder opening in trying to locate the thread. The usual result is that the points which have been so carefully adjusted are forced together once more and consequently the expected forceful spark fails to materialize. A further source of difficulty in the same connection arises from the inbred conviction that once attended to the plugs require no further inspection, so that when this happens the trouble hunter wanders off vaguely and needlessly into the intricacies of coil adjustment.

Law Suit to Suppress Garage Noises.

Annoyed by the intermittent explosions from gas engines used by the Star Electrical and Garage Co., of Erie, Pa., a number of property owners in the neighborhood have filed a bill in equity against the concern, asking damages and praying for an injunction which will put a stop to the engines. The bill sets forth that the noise has inconvenienced and distressed the plaintiffs and their families, depriving them of sleep and thereby endangering and injuriously affecting their health. It also is claimed that property values have been lowered as a consequence of the noise, and special complaint is made of the fact that the garage frequently operates all night working on automobile repairs.

Louisville Imposes Tax on Garages.

Automobile dealers of Louisville, Ky., are chafing over the recent passage of a license ordinance which provides for an annual assessment on all garage proprietors regardless of the number or class of machines housed. The ordinance provides that "Each person, firm or corporation who keeps or operates a public garage in which automobiles or similar machines driven by gasolene, steam or electricity are kept in storage or for sale or rent, shall pay a license of $100 per year."

Norfolk Has Automobile Milk Wagon.

Milk delivery by automobile has had an introduction on this side of the water. C. A. Bremer, owner of the Paradise Creek dairy, at Norfolk, Va., has a motor car milk wagon in service which is attracting great attention.

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FIGHT AGAINST MAIL ORDER FINES

Trenton Magistrate's "Absent Treatment" Undergoes Legal Scrutiny—Test Case Pending in Higher Court.

"Absent treatment" of the foreign invader of New Jersey's peaceful countryside after having constituted a source of untold annoyance to the motorists of other states for many months as well as an occasion for considerable expense, the legitimacy of much of which is in question, is now receiving the attention of the courts through a civil action which has been instituted by the Automobile Club of America, through Attorney Richard Boardman, of Jersey City. Manfred Naar, a Trenton Justice of the Peace, is being sued for the recovery of a fine which it is charged he imposed by mail upon an absent motorist for an alleged violation of the speed law. The case is the outcome of a long series of complaints which have been received from motorists who have been, to to speak, arrested, tried and fined by mail, and is brought as a test of the legality of the method.

According to the complaints upon which the A. C. A. has based its action, Naar's method was to have a constable concealed along the Hightstown road for the purpose of jotting down the numbers of passing automobiles. Shortly afterward the owners of cars corresponding to the numbers caught in this way would be notified that they were accused of violating the speed law on a certain day, and proposing to fix a day for trial at Trenton. As the notices were sent largely to non-residents of the State, many of whom would find it a hardship to spend the better part of a week day in Trenton, the accused would ordinarily reply to that effect, upon which a second letter would be received stating that the entire matter could be disposed of by the payment of a fine and costs. The fines ranged rfom $1 to $25, and the costs amounted to about $3.50. Counting the value of his own time into account, together with the expense of the trip to Trenton, the motorist usually found it cheaper to submit to the mail order method of punishment than to stand trial in the regular way. Hence the formality of a defense was usually foregone and the fine paid without question, although in some cases, it is said, the owners themselves were not in their cars at the time of the alleged violation of the law.

When brought to the attention of the A. C. A., the matter was referred to Chairman Winthrop E. Scarritt, of the committee on public safety, who in conjunction with the club attorney, W. W. Niles, made a thorough investigation and then arranged for the prosecution of the test case. The attention of the criminal authorities of Trenton also has been called to Naar's methods, and if the contention that they are illegal is upheld, an effort will be made to secure an indictment against him.

In a wordy defense, Squire Naar responds through a local newspaper that he never "instructed nor had paid officers on any roads of this county for the purpose of taking the number of any automobile passing through"; that he has issued summonses on about 2,000 complaints sworn to before him, and that in the vast majority of cases "summons have been served and service acknowledged by persons complained of for violating the automobile law." He justifies his system of notification on the basis of arranging for trial at the convenience of himself, and the accused, and alleges, "In each and every case where I have imposed a fine it has been where the parties complained of pleaded guilty."

Chicago Club Elects Opposition Ticket.

The "opposition ticket," as it was called, scored a decisive victory at the annual election of the Chicago Automobile Club, held on Thursday, November 12. The ballot resulted in the following members being chosen by a large majority: Ira M. Cobe, president; T. N. Koehler, vice-president; T. J. Hyman, second vice-president; C. A. McDonald, secretary, and George S. White, treasurer. The directors include B. B. Johnson, Claude Seymour, J. F. Gunther, Allen S. Ray, F. W. Blocki, and John Farson.

There were three separate factions in the field; the "administration" ticket, the "members" ticket, which was the choice of the nominating committee, and the "oppositionists" who sprang up at the eleventh hour. It seems that the latter coterie did not care for the other candidates nominated, with the exception of president Ira M. Cobe, who was endorsed by all and sure of re-election. So the "antis," the majority of whom are members recruited during the past year, headed by Ban Johnson, of baseball fame, put up a slate of their own and did considerable electioneering with remarkable success, for of the 210 votes cast, 115 were straight ballots for the latter party, and 59 split ballots also favoring it.

In his annual report, president Cobe asked the members to join in assisting the passing of the proposed convict labor law, for the purpose of furthering the interests of good roads. He also expressed his hopes of holding the much talked of Jefferson De Mont Thompson stock chassis race on an Indiana course next year and was in favor of making the inter-club contest with the Chicago Athletic Club an annual event.

Boston Gives Archbishop a Car.

At least one congregation has settled the burning question, "Should clergymen motor?" in a satisfactory way. Archbishop O'Connell, of Boston, has been presented with a luxuriously appointed landaulet by the Catholic laity of the Hub.

RURAL COURT PRACTICES REBUKED

Conviction of Motorist Reversed for Irregularities—Pennsylvania Court Renders Important Decision.

Important as a victory over the system which has for some time prevailed in Pennsylvania of noting the numbers of cars passing through speed traps and convicting their owners summarily, a decision of grateful import to motorists has been handed down from the bench in the common pleas court of Montgomery county. In effect, the decision will make it a great deal harder for constables and rural magistrates to make their mulcting program stick, and will free automobilists from much legal embarassment. Charles W. Bacon, a real estate dealer of Philadelphia, determined not to submit to the results of the action of a local magistrate in declaring him guilty of speeding on evidence consisting merely of the taking of his number. He secured a reversal of the local magistrate's decision.

"The record of the justice sets forth that an automobile, No. 15,775, was driven on a public road in Lower Providence township at a rate of speed exceeding that allowed by law," says Judge H. K. Weand, in his opinion; "but there is nothing to connect the defendant with the car or the act. It is not set forth that he was the owner of the automobile or in it at the time.

"If he did own it, and it was used without his knowledge, orders or consent, he would not be liable, otherwise he could be sent to jail for an act done without his knowledge by persons for whose acts he would not be responsible.

"To sustain this conviction we must hold without evidence, that he was the owner and its occupant at the time alleged, or at least that it was being used for his purpose and by his consent.

"A summons was issued and defendant appeared and made no defense. As there was no evidence connecting him with the violation of the law he was not required to make a defense.

"The proceedings are otherwise irregular in that the justice after fining the defendant required him to give bail for his appearance at court. And, November 12th, 1908, after argument and due consideration, the exceptions are sustained and proceedings set aside."

Show Profits to Pay for Club House.

Profits from the Denver automobile show, which is to be held under the auspices of the Denver Motor Club about December 1, are to go toward the establishment of a country house for the club. The show will be held in the Denver auditorium. The club is spending its present surplus in posting the route from Denver to Colorado Springs.

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AUTOMOBILES MAY OPEN ALASKA

Systems of Good Roads Making a Tourists' Paradise—Motor Cars the Probable Precursors of Railways.

Frigid, barren and uninviting as Alaska may sound to the uninitiated, as a place for automobile touring it will before many years make a strong bid for popularity, according to those familiar with the country. This is due to the fact that the whole interior is being opened up by a series of splendid roads, which in structure and in scenic beauties are to rival those in any other portion of the world. The projection and building of these roads is under the charge of the Alaska road commission, a government institution, and the highways that are at present planned and under course of construction will make the whole Alaska district easily accessible by motor car.

Contrary to popular impression, the climate of Alaska is exceedingly mild and agreeable during the summer months, resembling that of the northern states in the late summer or early fall. In portions nearer the Pole, the constant daylight presents novel phenomena for the summer tourist, but otherwise the country does not differ materially from the more rugged portions of the United States.

In outlining what is being done, Major W. P. Richardson, chairman of the road commission in Alaska, who has recently returned from the scene of his labors, makes it clear that the roads are to be of a character that will make them entirely suitable for automobile travel.

"As each year passes," he said, "we have the pleasure of knowing that the trunk line roads are being connected to such an extent that it will be only a few more seasons until summer travel in Alaska will be as easy as it is in any state. In fact, I think when we have our roads completed some of the states might pattern after us.

"If any one will look at a map of Alaska he will see that the greater part of the exploited territory is at or near the rivers. This is a simple way of saying that steamboats have been the only means of summer communication, except where roads have been constructed from trading posts to the diggings. All this will change when we have completed the three big lines of trunk roads planned and to a certain extent carried out.

"Beginning at Valdez," continued Major Richardson, "we now have a fine road up through Keystone canyon to Wortmans. That canyon, which has blocked more travel than any one piece of river in all Alaska, can freeze or stay open, we care not which. A road was blasted out of the solid rock to get through, but it was worth the money. At the same time it is a scenic road, for it is nothing but a shelf, in many places the rocks hanging right over the road. From there across Dutch Flat a fine road had been built to Wortmans, and an eight foot trail, which can be traveled by a wagon or automobile, having an easy grade, leads over Thomson Pass.

"Next year we intend to put a bridge across the Gulkana River and with the road we have partially and fully completed, added to what we will do next year, the line will be ready for stages the following year. I rode on a buckboard for 150 miles out of Fairbanks and made fine time. Next year we will widen the road down the Big Delta and put a ferry on the Tanana at McCartys. During the past summer three droves of cattle were driven from Valdez to Fairbanks.

"I am saying we are going to do this. It depends, of course, on our appropriation. We will go before Congress at its next session with a well-defined plan for completing the roads we have planned.

"During the past summer we have built a fine wagon road up the Porcupine country from Haines. This road is now at the boundary line, and we hope to get enough money to put it through to the head of the White and Tanana rivers, forming a junction with the Valdez road at McCartys. If we can get the money to complete this road, we will have accomplished something which will open up thousands of square miles of a rich country, only awaiting transportation, and the roads will make it possible for miners to begin that development which in a few years will attract railroads.

"Our other trunk line road, which may be held back for a year or so to see what development takes place on the Kuskokwim and the Innoko, is planned from Sunrise, on Cook inlet, up through the Sustina valley, across the head of the Kuskokwim, through the Innoko country, across the Yukon at Kaltag, and thence to Norton Bay. If the country this proposed line passes through makes a substantial showing, the road will without doubt be built at once, for I have found Congress willing to give the money when it can be shown that any region is producing something good.

"Now, while these trunk lines will mean much to the big camps, the branch lines will be come the feeders that will make these highways alive with people in a few years. Over these roads the poor man can walk to his destination. Freighting teams can deliver supplies at places, at a fair cost, which now it is almost impossible to reach with provisions. Winter or summer, the roads are there to travel, and, instead of a spring rush in and a fall rush out, a man will come and go back when he pleases. Mail will not be held back for days because some boat gets on a bar. It can be delivered summer and winter on a regular schedule. The man on foot, with a dog team, horse and cutter or automobile are on a level. The roads will be there for their use."

$50,000,000 WANTED FOR ROADS

Pennsylvanians Move to Promote Legislation for Highway Improvement—Three Measures Proposed.

Spurred by the example of New York and the New England States, the good roads enthusiasts of Pennsylvania are making an assault on the Keystone State's legislature with a view to prying out $50,000,000 for highways. Foremost in the work is the Pennsylvania Motor Federation's good roads committee, which has appealed to the mayors of 1,000 cities and to 6,000 township commissioners and road supervisors to join together an an auxiliary committee and get all the signatures possible to a set of petitions which will soon be presented at the state capitol.

The petitions ask the members of the legislature to support three separate good roads bills in the next session and also to appropriate not less than $3,000,000 for use under existing laws. The first of the proposed bills provides for a constitutional amendment authorizing the issuance of $50,000,000 in bonds for highway improvement. The second bill asks for an appropriation of not less than $5,000,000 for immediate use, and also for the appointment by the governor of a state board who shall designate the location of the main state highways to be constructed and maintained by the state, as well as determine where the state aid system shall be applied, and further provides that such board shall be authorized to purchase certain toll roads. The third measure comprises a plan for the application of preservatives to the stone roads constructed by state aid. The revenues necessary tor this plan would be derived from motor vehicle license fees. The three bills are designed to work in harmony to effect the one purpose, and, as indicated in the description, are practically complementary to each other.

"Even under the most favorable circumstances, it will take five years to obtain an amendment to the constitution whereby the $50,000,000 in bonds may be issued," explained J. H. Weeks, chairman of the good roads committee. "It is because of this fact that the second bill was drafted by the federation asking for an immediate appropriation of $5,000,000. This will give us an opportunity to secure a partial improvement of the state's bad roads now, inasmuch as it can be passed immediately under the present laws. We expect to obtain the signatures of 80 per cent. of the voters in every election district in the state to the petitions which we have sent out, and by the early part of January we further expect to be able to go to Harrisburg with something like 700,000 or 800,000 names on our list."

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Made In Bridgeport

An Appreciation of

The Locomobile Company of America

From

The Bridgeport Board of Trade

Whereas, The contest for the **Vanderbilt Cup**, the most highly prized trophy in the world for the winner of an international automobile road race, was won by **George H. Robertson** on the 24th day of October, 1908, by covering a distance of **two hundred and fifty-eight and 6/100 miles in two hundred and forty minutes and forty-five seconds**, in a ninety horse-power **Locomobile Made in Bridgeport** by **The Locomobile Company of America**, being the first American driver and the first car of American manufacture to be the victor in this international struggle for supremacy; and

Whereas, The automobile whose position in the race would have been third had the crowded track permitted the car to finish, was also a **Locomobile** manufactured by **The Locomobile Company of America** and driven by **James Florida**; and

Whereas, Notwithstanding the skill, hardihood and daring of the driver, the race could not have been won but for the **superior strength, design, workmanship and construction of the Locomobile**; therefore be it

Resolved, That The Bridgeport Board of Trade, recognizing that this gives the city of Bridgeport further cause for Local Pride, expresses and it does hereby express its appreciation of the honor done to Bridgeport, The Industrial Capital of Connecticut, by The Locomobile Company of America, in so perfecting its manufacture as to produce a car capable of defeating all other entries both foreign and domestic, of breaking the time record in the international race for the Vanderbilt Cup and breaking all records in America for road racing; and be it

Resolved, That The Bridgeport Board of Trade express, and it does hereby express its appreciation of the Ability, Talent and Genius of the designer of the Locomobile, Mr Andrew L. Riker; and of the skill, careful and exact workmanship and the thorough mechanical knowledge of the highly trained mechanics of Bridgeport, all of which brought the glory for the winning of a hard fought contest to the city of Bridgeport; and be it

Resolved, That these resolutions be suitably engrossed and presented to

The Locomobile Company of America.

Fred Cook President.
William Adwicky Secretary.
Treasurer.

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The Week's Patents.

895,437. Tire Protector. Louis Crise, Upper Sandusky, Ohio, assignor of one-half to Charles F. Close, Upper Sandusky, Ohio. Filed Nov. 15, 1906. Serial No. 343,616.

1. In a tire, the combination with a wheel rim, of a pneumatic tube open at its inner side only and having the said inner side secured to the wheel rim, clamping plates fitted against the outer portion of the tube and partially encircling the same, said plates having outstanding flanges, a solid cushion of yielding material fitted between the plates and bearing against the outer side of the tube, said cushion projecting beyond the flanges, and means for connecting the plates together and clamping the cushion between them, and plates and cushion being removable from the tube without affecting the engagement of the latter with the rim.

895,301. Tire. Alfred G. Ritchie, San Jacinto, Cal. Filed Aug. 7, 1907. Serial No 387,467.

1. A vehicle wheel having a rim provided with peripheral flanges one of which is removable, in combination with a cushioning tire having recesses in its inner side forming localized air cushions therein and bolts connecting such flanges together, extending through such tire and also extending through certain of such localized air cushions.

895,525. Brake Mechanism. Rollin H. White, Cleveland, Ohio, assignor, by mesne assignment, to The White Company, Cleveland, Ohio, a Corporation of Ohio. Filed May 10, 1906. Serial No. 316,074.

1. In an automobile, the combination with the rotatable wheel, a brake drum fixed thereto, and a non-rotating disc within said drum in a plane at right angles to its axis with arc shaped brake shoes located within said drum and provided with internal circumferential grooves which embrace the edge of said disc, means for thrusting said shoes apart and into contact with the drum, and a spring for drawing apart and into contact with the drum and a spring for drawing said shoes together upon said flange.

895,557. Lubricator. Charles C. Haller, Chicago, Ill., assignor to McCord & Company, Chicago, Ill., a Corporation of New Jersey. Filed July 25, 1907. Serial No. 385,511.

1. In a lubricator, the combination of a casing having admission and discharge ports, a cylindrical valve adapted to oscillate for communicating with the ports in said casing, a piston working in said valve, tappets in said casing and having ports therein pets for operating said valve and reciprocating said piston and a rotating member common to said tappets for operating them.

895,561. Vehicle Wheel. John B. Hembree, Piedmont, S. C. Filed May 21, 1907. Serial No. 374,816.

The combination with a solid rim or felly having an annular transversely concaved channel in its periphery and sets of opposite spaced undercut elongated sockets opening into the opposite sides of the channel and disposed at intervals about the rim or felly longitudinally thereof, said sockets tapering toward their inner ends to substantially sharp corners and having flat end walls forming stop shoulders, of a pneumatic tire that is seated in the annular channel, said tire comprising a single integral yielding wall that is substantially circular in cross section and has oppositely outstanding integral spaced elongated lips or tongues of yielding material located at intervals around the inner side thereof on opposite sides of the center of its inner wall and engaged in the sockets of the rim or felly, the lips or tongues being outwardly tapered to substantial edges and filling the sockets, said lips or tongues having flat ends disposed at substantially right angles to the tire wall and abutting against the flat end walls or shoulders of the sockets, said tire being thereby interlocked with the rim or felly and being held by said abutting end walls or shoulders against longitudinal movement or creeping thereon, the lips or tongues slipping freely into and out of the sockets when the tire is deflated.

895,618. Power Transmitting Device. Leonard K. Clark, New York, N. Y. Filed Nov. 20, 1906. Serial No. 344,348.

1. In a power transmitting device the combination with a generator having a rotary armature member and a rotary field member and a motor having a rotary armature member and a fixed field member; of means for rotating the field member of said generator and means for coupling together and uncoupling the generator armature member and the motor armature member.

895,632. Collapsible Foot-Rest for Vehicles. Charles J. Harris, Bridgeport, Conn. Original application filed Nov. 5, 1906. Serial NoN. 341,966. Divided and this application filed May 22, 1907. Serial No. 375,127.

1. A collapsible foot rest for vehicles, comprising a pair of notched plates, a foldable jointed frame consisting of side links pivotally connected to one another and at their opposite ends provided with means for removably engaging said notches, and a foot board secured to the corresponding side links.

895,645. Valve Timing Device for Explosive Engines. Lester L. Kell, St. Louis, Mo. Filed Dec. 17, 1907. Serial No. 406,903.

1. In a device of the class described, the combination of a support, a longitudinally movable element on the support, a yielding means for holding the element in normal position, an adjustable member normally separated from the element and movable therewith, a member yieldingly engaging the adjustable member for holding the latter in normal position, means for connecting the second member to one side of a signal including circuit, and means for connecting the element with the other side of such circuit.

895,661. Automobile Construction. William Morrison, Chicago, Ill., assignor of one-third to M. A. Lumbard, Des Moines, Iowa. Filed Oct. 31, 1904. Serial No. 230,877.

1. An automobile comprising vehicle wheels, a suitable body, a motor swingingly mounted on said body, springs interposed between said body and wheels, said motor having a casing composed of segment shaped sections, said sections being adapted to provide a hollow flanged boss, a sprocket wheel having its shaft extended through said boss and connected with the motor shaft, a rear axle construction having a casing provided with a hollow flanged boss, another sprocket wheel provided with a shaft extending through said last mentioned hollow boss and suitably connected with the rear axle of the vehicle, a sprocket chain connecting said sprocket wheels, and a casing inclosing the chain and sprocket wheels, the said casing thus inclosing the sprocket chain and the sprocket wheels being divided both longitudinally and transversely into sections which are rotatably mounted upon said hollow flanged bosses, and a threaded coupling adjustably connecting the ends of said sections, whereby the proper distance is maintained between said sprocket wheels.

895,670. Speed Indicator. Edd C. Oliver, Minneapolis, Minn. Filed July 8, 1907. Serial No. 382,681.

1. In a speed indicating device, the combination, with a rotating spindle, of a weight centrally pivoted thereon, a spring connected with said weight and arranged to swing on a different center, whereby it will be put under tension by the oscillation of said ring, the longitudinal axis of said spring intersecting approximately when extended, the pivot of said weight, when in the normal or zero position and a dial having an indicator hand and means for transmitting the movement of said ring to said hand.

895,709. Carburetter for Hydrocarbon Engines. Edwin F. Abernethy and George H. Abermethy, New York, N. Y. Filed Jan. 19, 1904. Serial No. 189,671.

1. In a carburetter, a fuel valve provided with a plurality of fuel passages, adjustable means co-operating with said valve for varying the area of said passages, and means operated by a suction draft through the carburetter for operating the fuel valve.

895,732. Construction of Batteries and Electrolytic Apparatus. Frank A. Decker, Philadelphia, Pa., assignor, by mesne assignments, to Decker Electrical Manufacturing Company, Wilmington, Del. Filed Feb. 11, 1905. Serial No. 245,223.

1. In apparatus of the class described, a plurality of battery parts forming several compartments, said parts being secured together and sealed by a plastic vulcanized in place, thereby rendering said compartments liquid tight.

895,762. Detachable Rim for Automobile Tires. Richard E. Jeffery, Piedmont, Cal. Filed March 20, 1907. Serial No. 363,403.

A wheel rim comprising a rim portion, a rim section surrounding said portion and secured thereto, said section having an annular flange surrounding one edge, a ring thickened along one edge and secured to said section, and having the remaining portion reduced in thickness to form an annular socket between the reduced portion and the corresponding portion of said section, and a removable section having an annular flange surrounding one edge and having bayonet-slots opening through the inner edge of the removable section being adapted to enter edgewise and be inclosed in the socket formed beneath the ring, lugs struck up from the face of the fixed section and adapted to enter and interlock with the bayonet slots of the removable section, and spring pressed latches carried by the rim and passing through the fixed and removable sections to lock the sections, said latches having offsets normally fitting perforations in the fixed section, said latches being capable of a limited rotated movement to carry said offsets out of said perforations to thereby hold the latches in inoperative position.

895,767. Radiator. Thomas J. Kehoe, Dayton, Ohio. Filed April 5, 1906. Serial No. 309,990.

1. In a radiator having parallel hollow sections, a series of plates each of which has numerous protruded tongues on one of its sides, said plates being secured respect-

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ively with their flat sides against the corresponding sides of said sections.

895,838. Automatic Pump for Tires. James C. Booth, Columbus, Ohio. Filed Aug. 16, 1906. Serial No. 330,800.

1. The combination with an axle having wheels journaled thereon and pneumatic tires carried by said wheels and with air valves operative through the rims thereof, of circular plates secured to said wheels, eccentrics revolubly mounted upon said plates and each having a laterally inward extending stop lug, and laterally extending fianges adapted to receive fastening means, eccentric bands mounted upon said eccentrics, pump cylinders pivotally carried by said wheels adjacent to the tires thereof and connecting with the air valves of said tires, pistons operating with the air valves of said tires, pistons operating in said cylinders and connecting with said eccentric bands, rods slidably mounted upon said axle and adapted to engage the stop lugs of said eccentrics, and means to move said rods, substantially as described.

895,941. Vehicle Wheel. Linda H. Barry, Durango, Mexico. Filed Oct. 10, 1906. Serial No. 338,263.

1. A vehicle wheel, comprising a rim, a plurality of longitudinally curved spring members clamped to the rim and formed with upwardly and inwardly-curved ends, a plurality of longitudinally curved springs forming tread members, the outer ends of which are curved downwardly and inwardly and are overlapped by the curved ends of the first named springs, clips having sid: flanges between which the curved ends of the respective spring members are received, and means for uniting the clips to said curved members.

895,958. Electromagnetic Sparking Plug. Otto Carlborg, Providence, R. I. Filed June 9, 1906. Serial No. 320,972.

1. In an electric-magnetic sparking plug of the character described, the combination with a lower section or plug member proper adapted to be removably secured to the cylinder of an explosive engine, and normally contacting fixed and movable electrodes mounted in said section, of an upper section secured to said lower section so as to produce a comparatively large open air-circulating space between their adjacent ends, an electro-magnet and armature mounted in said upper section and operatively connected with said electrodes so that when in use upon energizing the magnet the resulting movement of its armature automatically separate said electrodes to produce an electric spark, the heat from the plug at the same time being materially reduced or tempered by air circulatnig in the said open space, substantially as described.

895,975. Auxiliary Relief Wheel Rim for Motor Cars and Vehicles. Thomas M. Davies and Walter Davies, Llanelly, England, assignors to The Stepney Spare Motor Wheel, Limited, Llanelly, England. Filed April 11, 1904. Serial No. 202,582.

1. The combination of an auxiliary wheel rim, inwardly projecting radial guides fixed to said rim, an abutment upon each of said radial guides, a hook-shaped clip movably mounted in each of said radial guides and adapted to engage the outer periphery of a vehicle wheel rim, and adjustable means securing said hook shaped clips to said abutments, substantially as herein shown and dscribed.

895,982. Gasolene Engine with Mixing Cylinders on Crank Cases. Frederick A. Dobbins, Newark, N. J. Filed June 21, 1907. Serial No. 380,024.

1. The explosive vapor engine having an explosion cylinder, the crank-casing below such cylinder having bearings at opposite sides, with crank shaft extended across the same and provided with a bent crank below the explosion cylinder and with an eccentric at the side of each crank arm within the bearings, a gas mixing pump cylinder projected horizontally at one side of the casing, and the two eccentrics having direct connections to the pump piston, equi-distantly from the center of the piston whereby the pump cylinder may be disposed upon the center line of the bent crank and bedplate.

895,984. Pneumatic Hub. John Duchan, Elizabethport, N. J., and Roland Duchen and Johann Duchan, Vienna, Austria-Hungary. Filed March 16, 1907. Serial No. 362,662.

1. In a wheel, is combination, a hub having a bore, a tubular case received in said bore and presenting a projection on the inner side thereof, a sleeve, and a pair of pneumatic pads disposed around said sleeve and filling the space between said sleeve and said case, said projections affording means for preventing the rotation of said pads relative to said case.

896,034. Transmission Gearing for Automobiles. Grover I. Mitchell, Cornell, Ill. Filed April 4, 1908. Serial No. 425,105.

1. In a transmission gearing for automobiles, a motor driven shaft having a thrust bearing, a wheel upon said shaft having a friction rim, a transmission shaft suitably supported in axial alignment with the motor drives shaft, a hub supported slidably and adjustably upon the transmissios shaft for rotation therewith and carrying a wheel having a friction rim, a shaft supported slidably at right angles to the motor driven shaft a friction disc carried by said motor driven shaft adapted for engagement with the rims of the wheels upon the motor driven shaft and the transmission shaft, and a spring supported idler adapted for engagement with the face of the friction disc.

896,057. Automatic Starter for Gasolene Engines. Franklin A. Corey, Santa Paula, Cal. Filed Dec. 16, 1907. Serial No. 406,806.

1. In an automatic engine starter, a casing provided with a recessed hub, a recessed collar in said hub adapted to be secured to said shaft, balls mounted in said recesses, means for locking said casing against rotation in one direction, a spring within the casing having one end secured thereto, and intermittent grip mechanism for detachably connecting the other end of the spring to said shaft.

896,104. Guard or Fender for Vehicles. Charles W. M. Guhle, Philadelphia, Pa., assignor of one-third to Frederick J. Ritter, Philadelphia, Pa. Filed Jan. 20, 1908. Serial No. 411,594.

1. The combination with the running gear of a vehicle, of protective means extending outside of said running gear, parts of said means being pivoted to said vehicle to permit the same to be swung clear above the running gear.

896,112. Starting Device for Hydrocarbon Engines. Russell Huff, Detroit, Mich., assignor to Packard Motor Car Company, Detroit, Mich., a Corporation of West Virginia. Filed Nov. 30, 1907. Serial No. 404,522.

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1. In controlling means for motor vehicles, the combination with the mixture inlet pipe and a throttle valve therein, of a starting crank for the engine and connections between the starting crank and the throttle valve whereby the latter is opened when the crank is moved to operative relation with the engine.

896,136. Recoil Compensator. Frederick J. Mellen and Burton A. Edwards, Beloit, Wis. Filed Nov. 14, 1907. Serial No. 402,217.

1. A recoil compensator of the character described, comprising a cylinder forming a chamber for a fluid medium, a solid partition secured in said chamber, a piston mounted to oscillate in said chamber, and formed with a passage extending therethrough, and a relatively small port also extending therethrough, a spring pressed check valve connected to said piston and adapted to close said passage, the piston being formed with a laterally projecting shaft extension extending out of the cylinder, said extension being formed with a bore intercepting said port, an operating arm secured to said extension, and a plug mounted in said bore and adapted to vary the size of the port, as and for the purpose set forth.

896,161. Change-Speed Device. David E. Ross, Brookston, Ind. Filed Nov. 6, 1905. Serial No. 286,015.

1. In a change speed device, a drive shaft, a driven shaft, a member carried by one of said shafts, said member having a grooved surface on its interior, a rotatable device secured to the other shaft within the said member, said device having projections for engaging with the grooves in said member, and means co-operating with said device for controlling the rotation thereof, whereby the relative speeds of the shafts are regulated, substantially as described.

896,195. Universal Joint. Fred H. Bogart, Hartford, Conn., assignor to Hartford Automobile Parts Company, Hartford, Conn., a Corporation of Connecticut. Filed Aug. 12, 1907. Serial No. 388,269.

1. A universal joint comprising an annular bearing plate having diametrically opposed bearings thereon, the ends of which are open, two forked members provided with hubs, the axes of which extent through the axis of said plate, each member having a swinging movement in two of said bearings on opposite sides of said plate, the planes of oscillation of said members being at right angles one to the other, and a two-part casing to inclose the bearing plate, and removably secured thereto.

896,254. Valve for Explosive Engines. Paul Schramm, Alameda, and Ira E. Wise, Wallace, Cal. Filed Oct. 12, 1905. Serial No. 282,440.

In an explosive engine, a valve chamber having a single opening communicating with the cylinder for the entrance of the explosive mixture and for the exhaust of the products of combustion, and provided with a single passage for the admission of a gaseous mixture and an exhaust passage communicating with said opening, and a single valve controlling said opening and passages, said valve comprising a head adapted to seat in the chamber opening, and a hollow cylindrical body portion depending from said head and connected therewith by a reduced portion arranged in one position of the valve to form a direct communication exteriorly of the valve between the cylindrical and exhaust passage, said reduced portion having ports therein adapted when the valve is moved to another position to establish a communication between the passage for the gaseous mixture and the cylinder through the body of the valve, and means for actuating said valve.

896,305. Device for Simultaneously Controling the Spark and Throttle of an Internal Combustion Engine. Hermann Lemp, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed June 30, 1906. Serial No. 324,195.

1. The combination with the spark control and the throttling mechanism of an internal combustion engine, of means for simultaneously regulating the advance and retardation of the spark with reference to the opening and closing of the throttle which changes the point of ignition at a rate proportionate to the sine of a given angle while varying the opening of the throttle at a rate proportionate to the versed sine of said angle.

896,314. Motor Vehicle. James C. McCurry, Texarkana, Tex. Filed Aug. 26, 1907. Serial No. 390,196.

1. A motor vehicle comprising a wagon having a box body, a fixed rear axle, and wheels mounted thereon, a movable front axle and wheels mounted thereon, an explosive engine mounted upon the rear end of the wagon body above the same and having the engine shaft projecting beyond the corresponding side of the wagon body, connections exterior to the wagon body from the engine shaft to the rear wheels for driving the latter, and steering means also exterior to the wagon body and connected to the front axle.

896,317. Clamp for Spacing the Bows of Vehicle Tops Apart. Frank L. Paxson, Philadelphia, Pa., assignor to Percy L. Neel, Philadelphia, Pa. Filed Oct. 11, 1907. Serial No. 397,014.

1. In a clamp for vehicle tops, two bars of rigid material correspondingly corrugated and pivotally and swivelly secured together, substantially as shown and described.

896,353. Filter. Allen A. Bowser, Fort Wayne, Ind., assignor to S. F. Bowser & Company, Fort Wayne, Ind., a Corporation of Indiana. Filed June 23, 1906. Serial No. 323,043.

In the device for the purpose described, the combination of a flat or shallow casing embodying two separable members, one having an inlet and the other an outlet formed in the edges thereof, the member having the inlet opening being also provided with a trap, a diaphragm composed of chamois skin dividing said casing into an inlet compartment and an outlet compartment and having its edges between said members, and spaced ribs formed along the inner face of one of the members in which the outlet is formed in the direction from the inlet to the outlet and bearing against said diaphragm, said members being secured together so that the inlet and outlet openings will be disposed diametrically opposite to each other and with the trap located between the inlet and the outlet openings.

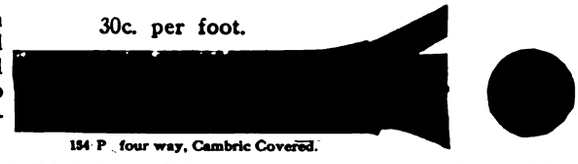
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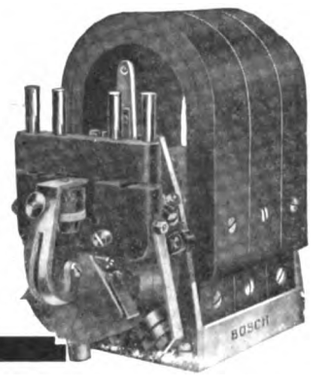
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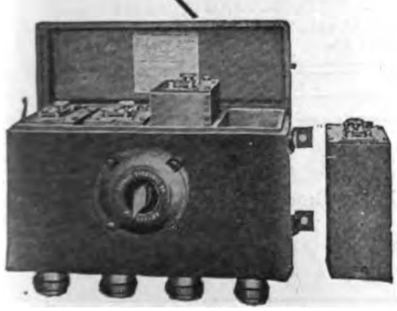
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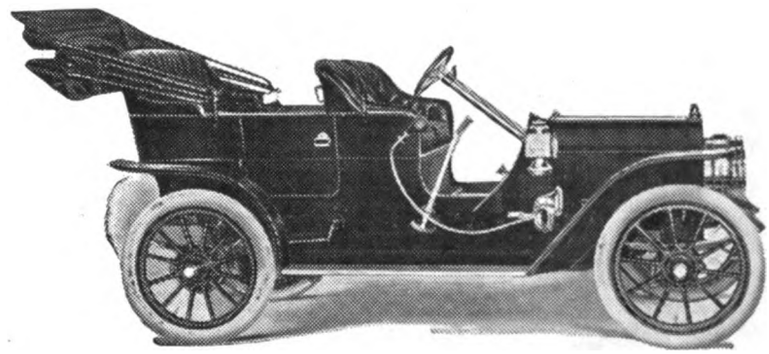
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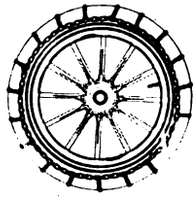
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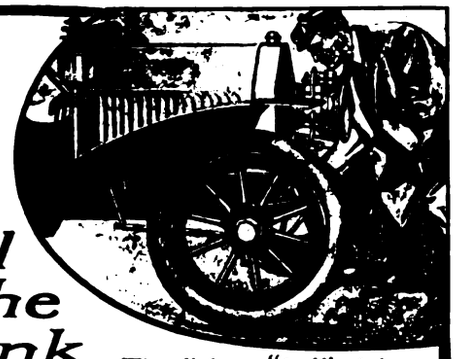
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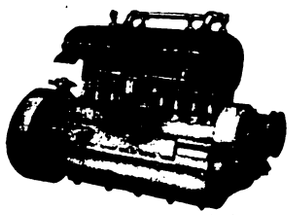
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If your car is wired with PACKARD ENAMELED IGNITION CABLE you can be dead sure you will have no trouble so far as the wiring is concerned.

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Get Rid of Tire Troubles
Try a Set of
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The Device that made Safe, Speedy and Comfortable Automobiling Possible.

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AVOID ACCIDENTS
by using the
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which adds to the efficiency of the lamps, and keeps glare from blinding other users of the highways. Can be fitted to any existing lamp.

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DIAMOND CHAINS
drive their cars more miles per dollar cost than any others
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THE OIL THAT GRAPHITIZES
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YOU NAME THE CAR
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A SUPERB LINE OF CARS—
THE JACKSON
"No Sand Too Deep—No Hill Too Steep."
2-Cylinder and 4-Cylinder
Runabouts, Roadsters, Touring Cars,
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Complete catalogues now ready.
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HIGH GRADE
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HAVE YOU SEEN
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The newest and best wrench made; all steel—great strength; instantly adjusted; easily and quickly operated; positive grip; immense time, trouble, and temper saver; best "all round tool" ever offered for sale.

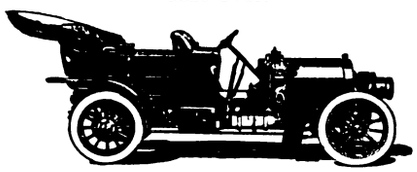
"You will want one when you see it."

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PENNSYLVANIA
"FIFTY"

We had the best car in America. We thought for a long while how to improve it and left it alone. You think that over.



Touring Car, Baby Tonneau or Roadster bodies, with double ignition, $3,000.

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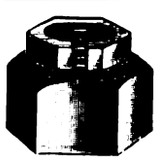
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Includes genuine $150 Splitdorf Magneto (free) and ½ inch larger tires than you get with any other car at this price. To have other cars equipped with these tires you must pay $50 extra. Write for full information to-day.

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Write for 1909 Catalog.
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CANNOT shake loose. They add an important factor of safety and give a feeling of security. Columbia Lock Nuts are the best kind of accident insurance. Used by most makers of the best cars and by leading railroads, etc. Send us a two-cent stamp, size and thread of the bolt, and we will forward a Columbia Lock Nut for it.



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Does Franklin air-cooling cool? Over 5,000 Franklins are in active use. Catalogue tells what else it does. Write for it.
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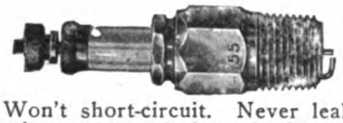
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The "Gotham" **STA-RITE** will end your spark plug troubles. Soot can't stick to the porcelain. Won't short-circuit. Never leaks. Can be taken apart and cleaned with ease. Of dealers, or direct, $1.00.



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IT'S SAFE TO COAST
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It is not possible for any chain to be better than
BALDWIN CHAINS
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The Acme JUSTIFIES ITS NAME
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Steel Tires
Full of Air.
Tire expense cut in two.
Cannot Blow Out, Rim Cut or Puncture.
As Flexible as Rubber
Anti-Skid.
That part of a tire with a blowout or a rim cut in it will last longer than any other part if encircled by a few sections of steel.
Thousands in use.
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The Only Cure for Tire Troubles

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THE BILLINGS & SPENCER CO.
Hartford, Conn.

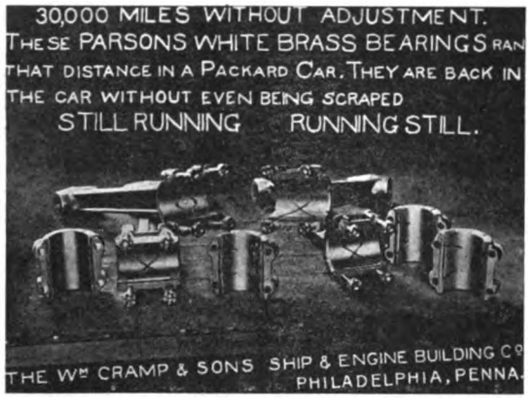
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THE STARK ROLLING MILL COMPANY, CANTON, OHIO

Model B—Brush Runabout

A CAR OF SIMPLE DESIGN MADE WELL
NOT A COMPLICATED DESIGN MADE CHEAPLY

Its records and the opinions of its users speak more loudly than self praise. Agencies for 1909 are being closed rapidly. Much good territory still open.

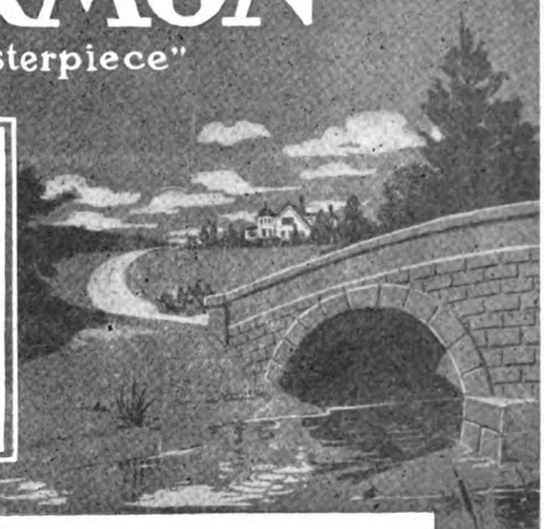
BRUSH RUNABOUT COMPANY, Detroit, Mich.

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THE MARMON

"A Mechanical Masterpiece"





A Durable Car—A Car You Can Depend Upon and Be Proud of—And A Bargain

No other light car in the market, under $3,000, presents the actual value found in the Marmon "Thirty-two."

Weighing slightly less than 2,000 lbs., with 32-40 H.P., it has a world of speed and ability.

Built like a fine watch, each part is accurately wrought and harmonizes with all other parts. Parts interchangeable.

The workmanship, materials and design maintain the Marmon reputation for dependability and durability. The Marmons of 1903 are still giving splendid service.

The design appeals instantly to the man who knows good machinery.

A reading of the specifications will convince the experienced motorist that this "Thirty-two" equipment and Marmon construction considered, is the real bargain of the year.

Genuine Krupp and Chrome Nickel Steels used for important parts. Bosch magneto and battery—dual system. Three-point motor support. Straight line shaft drive. Rear axle and transmission in one unit. Marmon Oiling System. Large brakes. Hess-Bright ball bearings. Big tires (34x4 all around). Complete equipment.

Furnished as **Touring Car, Roadster, Four-Passenger Suburban with removable rear seat, or Limousine Town Car.**

We shall exhibit in New York only at Grand Central Palace Show, opening New Year's Eve.

The Marmon "Fifty"—A Superb Car

The fact that this car is a Marmon—one of the three or four really high-grade cars built in America—informs the experienced motorist as to its construction, ability, distinguished appearance and ease of motion.

In addition to this, a reading of the specifications will show that in hard, practical cash value, it is the superior of the most famous foreign cars or any other American car, at any price.

Marmon "Fifty" (with Seven-Passenger or Four-Passenger Body), $3750. Marmon "Forty-five" Roadster, $3500.

Nordyke & Marmon Co. (Estab. 1851) Indianapolis, Ind.

Standard Manufacturers A. M. C. M. A.





The Easiest Riding Car In The World

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Will You Buy Dreams or Experience?

The car, proved to be in the best moderate-priced automobile, is

THE MAXWELL

The greatest number of satisfied automobile users, now over 11,000,

THE MAXWELL

The greatest chain of automobile plants, New Castle with its ten acres of floor space—Tarrytown with its superb equipment—Pawtucket with its splendid facilities—forming the most important factor in the American automobile industry to-day, are devoted exclusively to manufacturing 9,000 per annum of

THE MAXWELL

Our output for the season of 1907-08 was over five million dollars—all represented by

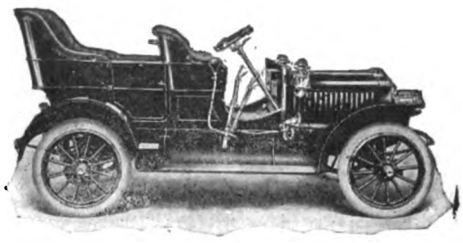
THE MAXWELL

For our production the coming season the public will pay over eight million dollars, a business represented entirely by the sale and satisfactory use of

THE MAXWELL

In our experience we have seen automobile manufacturers come and go. We are proud of our success. It means that good design and superior qualities have been the recognized possession of

THE MAXWELL



THE FIVE-BEARING-MOTOR CAR
Maxwell Model D A, 4-Cylinder, 24-28 H. P., $1,750, Equipped.

The Maxwell-Briscoe Motor Company experiment on themselves, not on the public. Mr. J. D. Maxwell, instead of copying a lot of hodge-podge ideas, has made MAXWELL cars with the closest possible regard to the requirements of the average user. Therefore MAXWELL cars of all types represent the foremost utility American automobiles.

Our two-cylinder cars crowd the highways of the country; our four-cylinder cars are deservedly the most popular moderate-priced cars made.

In all our four-cylinders we use five-bearing crank shafts, as against only two or three in other cars.

The bodies of all of our cars are made of metal, costing more than twice as much as wooden bodies.

We use the unit construction, that is, make the engine and transmission case in one casting, not bolted together, **costing more** than the usual construction, and many times more substantial.

We have found that it has paid to make the best moderate-priced cars in the market. Not to try to make cars cheaper than any one else, but to make them better, and to sell them at a price commensurate with a just profit and a large output.

Advance literature now ready for distribution, showing complete 1909 line

MAXWELL-BRISCOE MOTOR CO.

P. O. 106, Tarrytown, N. Y.

Factories:

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The Value of the AJAX 5,000 Mile Guarantee

is known and appreciated by every individual **AJAX** user. It also finds substantial recognition at the hands of the automobile manufacturer who knows better than any one how vital the tire problem is to the motorist.

No wonder, then, that careful buyers and conservative manufacturers like the **Maxwell-Briscoe Motor Comapny** give to the **AJAX** the largest tire order ever received by a single tire firm.

Incidentally they give to their customers the benefit of the **AJAX five-thousand mile guarantee,** which insures the user against tire worry and gives him a security that no other tire maker can afford.

MAXWELL-BRISCOE MOTOR CO.

NO. 2146-T

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MANUFACTURERS OF "The Maxwell"

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PLEASE SHIP US WITHIN ... TO ... VIA

4000 Sets 28" x 3" Ajax Tires Complete.

1500 " 30" x 3" Ajax Tires Complete.

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750 " 32" x 4" Ajax Tires complete.

Shipment to be made to our several factories, in accordance with instructions to be given later.

MAXWELL-BRISCOE MOTOR CO.,

A. R. Connelly

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ACCEPTANCE OF THIS ORDER IMPLIES AN OBLIGATION TO FILL OUT AND RETURN FORM BELOW.

The World's Largest Tire Order

Naturally given to the AJAX. Every one of the 29,000 Tires is accompanied by our 5,000-mile Guarantee.

Would you insist upon incurring tire hazard when you can buy **AJAX** tires and **AJAX** tire insurance at the same price at which users of other tires buy tires alone, without any guarantee?

Think this over and write for a copy of our 5,000-Mile Guarantee, also for **"AJAX,"** a magazine published in the interest of makers, sellers and users of rubber tires and kindred products of the rubber industry

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The Warner Instrument Co.
of Beloit, Wis.

Announce their Masterpiece—



The 1909 AUTO=METER

The illustration shows the form of the new instrument. The chaste simplicity and artistic beauty of the design is self-evident. It harmonizes perfectly with other dash equipment and gives tone to any car.

The Speed Recording mechanism is unchanged. It was perfection before. Improvement was impossible.

The Odometer is now of our own construction. Therefore, as simple, durable and dependable as the Auto-Meter itself. The figures are so large and distinct that they can be read from the seat.

The Season dial registers 100,000 miles. Other odometers register 10,000 miles only.

The Trip dial registers 1,000 miles. Other odometers register 100 miles only.

The Trip dial-set is simplified. A single turn of the button resets to zero.

Those who have used any kind of Speed Indicator will realize what these points mean to them.

The entire dial is illuminated by concealed electric bulb. The pressure of a button makes speed and distance plainly readable in the darkest night.

The Shaft Drive is now made simpler and stronger than ever before. We use special steel, heat treated, in its construction. This was really not required. We have seldom had shaft or other troubles not caused by carelessness or accident. We changed simply because modern methods had produced something better than we had used before.

The Auto-Meter is constructed throughout of the best materials procurable. It is made and put together by the same workmen who are engaged in making Chronometers and other expensive instruments of precision.

The tests and inspection of each instrument is so rigid that variations from absolute accuracy are only possible when there are variations in tire diameters. This amounts, on the average, to less than 100 feet to the mile.

For these reasons the Warner Auto-Meter has always been specified by those who can afford ***the best,*** and with whom anything short of absolute perfection and unfailing accuracy is of no use whatever.

The Warner Instrument Company

Factory and Main Offices: 311 Wheeler Avenue, BELOIT, WIS.

NEW YORK, 1902 Broadway
BOSTON, 925 Boylston St.
PHILADELPHIA, Cor. Broad & Race
PITTSBURG, 3432 Forbes St.
CLEVELAND, 2062 Euclid Ave.
BUFFALO, 722 Main St.
DETROIT, 239 Jefferson Ave.
CHICAGO, 1305 Michigan Ave.
INDIANAPOLIS, 330½ N. Illinois St.
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Overland

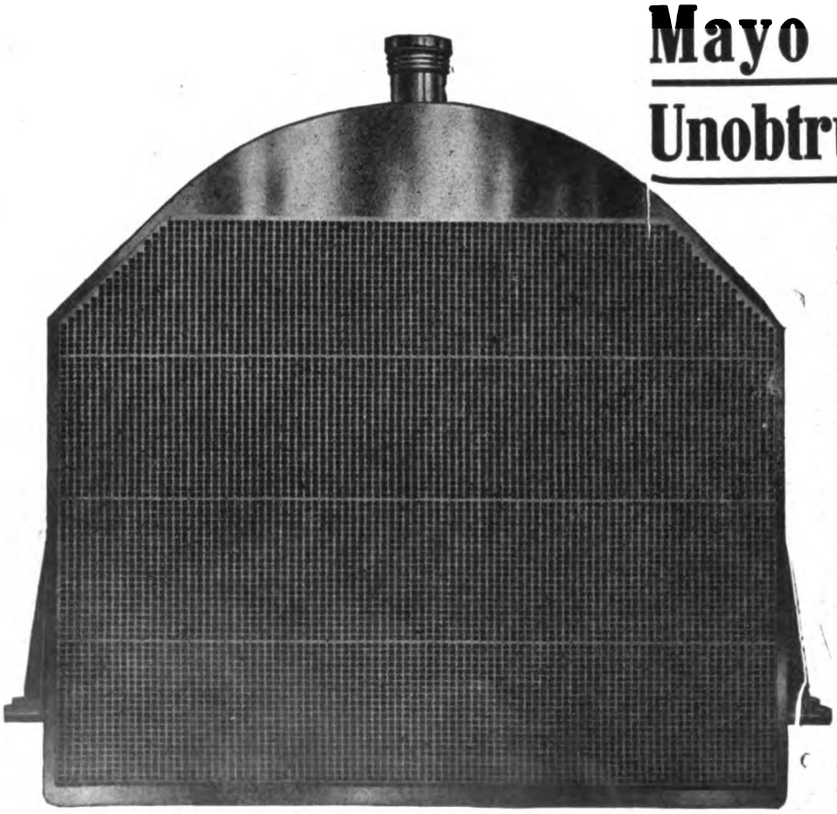
Model 31
Tourist
$1,400

Write for fuller specifications, which will be gladly furnished

Special Announcement

THE demand for an Overland 5-passenger touring car equipped with our well-known and exclusive floor-controlled planetary transmission having become so persistent, we have determined to add a car of this type to our line to list at $1,400. This model will be equipped with our 30 H. P. 4-cylinder motor, high tension magneto, headlight, etc. Early deliveries can be made on this model, which will be known as Model 31.

OVERLAND AUTOMOBILE CO., INDIANAPOLIS INDIANA



Mayo Radiators are as Unobtrusive as Good Form

¶ They don't "spout" or "slop over," and are thoroughly effective.

¶ Mayo Radiators are their own reason for their general use on really high-grade cars.

¶ Mayo Radiators are built first and built as well as the finest kind of artisans working with the best materials and under the most favorable conditions can build, and their cost is based on their worth.

¶ Mayo Radiators assure that whatever troubles a car may have, they are not due to the radiator.

¶ Mayo Radiators are not within the price limit of cheap cars. Equally true it is that they are within the quality limits of all good cars selling at any price.

¶ A Mayo Radiator axiom:
If the rest of the car is as good as the Mayo Radiator, it's all right.

¶ Mayo Radiators are made in a Quality Shop at New Haven, Connecticut.

MAYO RADIATOR COMPANY

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Franklin Model G Runabout

Why should a business or professional man buy any automobile that he cannot use every day in the year?

The Franklin Model G runabout is the highest type of automobile made. Like all Franklin automobiles it is built for what it has to do. It combines high power with strength and light weight. It has no water-cooling apparatus to carry, to freeze, to make trouble and expense. You can use Model G runabout every day in the year.

Model G runabout has a 4-cylinder, 18 H. P. long-stroke, air-cooled motor with fan; multiple disc-clutch, sliding gear transmission, shaft-drive, Bosch high-tension magneto. In quality it equals the largest and finest of Franklin touring cars.

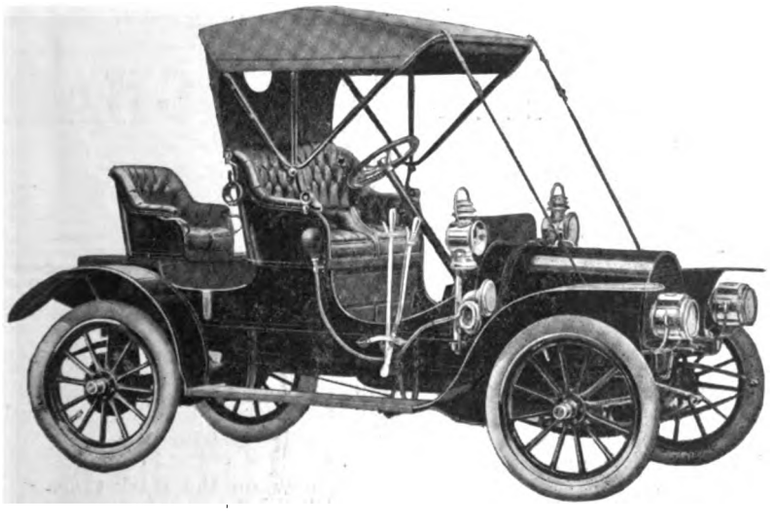
It stands up for every kind of runabout service. In looks there is nothing better for anybody.

While air-cooling is greatly superior to water-cooling for any motor car, its advantage is especially realized in the runabout, which nine times in ten is used principally for business. It must be left standing out in storms and freezing weather.

W. C. Deming, M. D., in a recent issue of the *Horseless Age*, says: "I am a strong advocate of the four-cylinder, shaft-driven car, with air-cooled motor. There are no disadvantages in air-cooled cars that I know of as compared with water-cooled motors. Air-cooling must be efficient or the makers of cars with such motors could not continue in business and prosper. These motors are more economical of gasoline and not less of oil. Then why pay for radiator, pump, pipes and water jackets, carry the weight of these and of the water, and have the trouble of non-freezing solutions in winter or suffer the penalty of frost-wrecked cars?",

The Doctor is right. Why have unnecessary trouble?

Model G Runabout, $1800, F.O.B. Syracuse
(Top extra)



MODELS

G—18 H. P. touring car, $1850. Runabout with hamper, $1750. With single or double rumble seat, $1800.

D—28 H. P. five-passenger touring car, $2800. Or runabout, with single or double rumble seat, $2700.

H—42 H. P. seven-passenger touring car, $3750. Or runabout with single or double rumble seat, $3600.

Broughams, Landaulets, Limousines, Town Cars.

All prices f. o. b. Syracuse, N. Y.

Write for the new 1909 catalogue de luxe.

H. H. FRANKLIN MFG. CO., Syracuse, N. Y.

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The "Whats" and the Facts

Here are the "Whats" that confront the average man who contemplates the purchase of a motor car:

What will a car do for me?

The Premier will go through water, mud or sand, up hill and down dale over all kinds of roads, day in and day out. Its winning records in Glidden tours and all the endurance and reliability runs it has entered prove that. And all Premier owners testify to it.

What must I pay for it?

The Premier models range in price from $2,500 for the "Thirty" to $3,500 for the six cylinder "Forty-five." You can buy cars for less—and get a great deal less. You can buys cars for more—and get not a penny more of value.

What will it cost to operate it?

The Premier holds the official record for economy.

What will the repair bills be?

The Premier, taken apart and examined after a strenuous test run of 12,189 miles in 100 consecutive days, was officially pronounced able to do it over again without repairs. The same answer is found in all its great endurance runs. And Premier owners will tell you that its upkeep is insignificant.

What will be the length of its life?

We can show you any number of Premiers built during our first year, that have gone over 50,000 miles and are doing good service to-day.

What will it be worth next year?

For your own use it will be worth as much next year as it is to-day. If you want to sell your car, you have a car in which there are no radical changes from year to year and you can offer a car of proven value, a car so well known that you need no argument.

Premier Motor Mfg. Co.
Indianapolis, Ind.

Standard Manufacturers A. M. C. M. A.

R. M. Owen & Co.
Distributors
East, North and Northwest

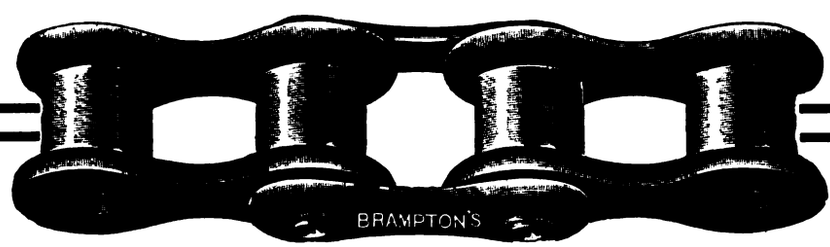
Will exhibit in New York only at Grand Central Palace Automobile Show, Opening New Year's Eve.

THE LARGEST AUTOMOBILE SUPPLY HOUSE IN AMERICA

Your Profit, Mr. Dealer

depends upon your sales. You must sell goods that are in demand and move rapidly, and give you a good profit. We would like to have you investigate

THE CELEBRATED BRAMPTON CHAIN



They are rapid sellers and bring many duplicate orders. Every customer a satisfied customer and a daily advertiser for you and the Brampton Chain. They are the strongest chain on the market. Made of self-hardening steel.

We have in stock all sizes to fit American and foreign cars.

The price is the same as you pay for any other chain, in fact all automobile chains now on the market are same price to manufacturers, jobbers, dealers and users, and our prices are the same as quoted by chain manufacturers.

PRICE THE SAME. QUALITY? INVESTIGATE. Get the best at the same price. Agents wanted in unoccupied territory. Catalog mailed upon request; the largest of its kind ever published.

CHAS. E. MILLER, **Manufacturer, Jobber, Exporter and Importer,** **Main Office: 97-99-101 Reade Street, New York**

BRANCHES—54th St. and 8th Ave., New York; 202-204 Columbus Ave., Boston, Mass.; 318-320 N. Broad St., Philadelphia, Pa.; 227½-229 Jefferson Ave., Detroit; 1829 Euclid Ave., Cleveland, O.; 1392 Bedford Ave., Brooklyn, N. Y.; 824 Main St., Buffalo.

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Dealers Who Sell
Stewart Speedometers
Have a Cinch

As one big dealer says, if you sell Stewart Speedometers it means

No speedometer troubles. No customers constantly coming in with broken shafts. No returned speedometers. No dissatisfied customers. Five times the volume of business

and it's a heap easier to hand him a five-year guaranteed Stewart Speedometer, at a reasonable price, than to spend an hour trying to convince him that he should pay three times as much for some other make, not nearly so good, and if you did sell him feel that you had stung one of your good customers.

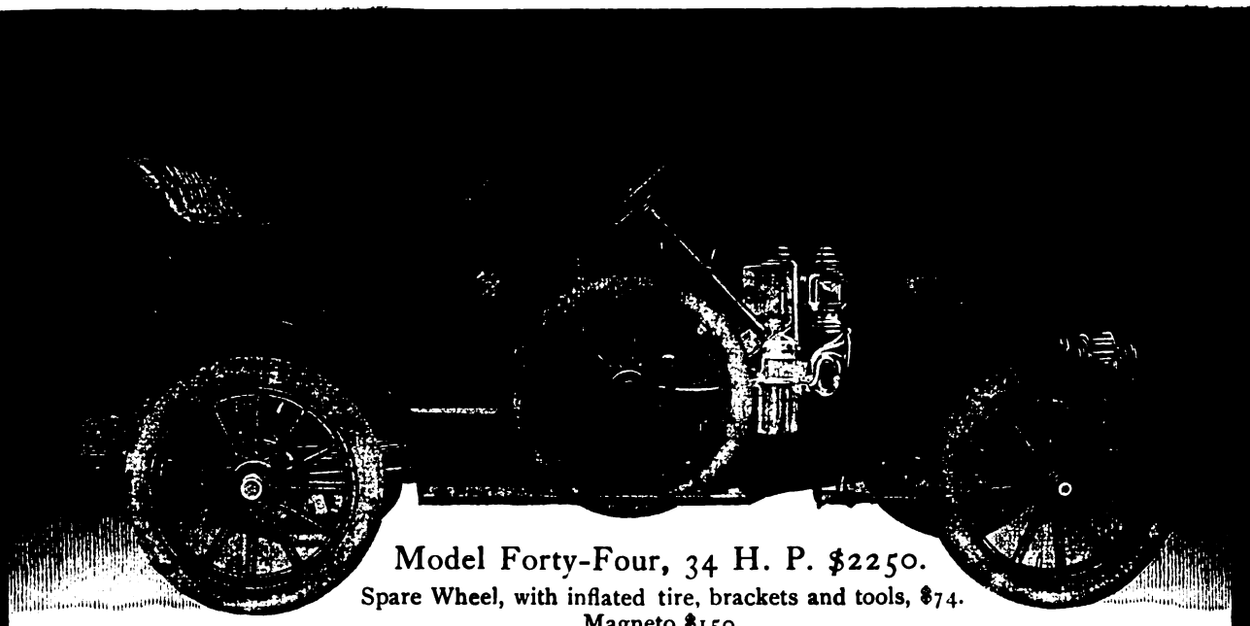
Me for the Stewart

Our new catalog describing new 1909 line is now ready

Stewart & Clark Manufacturing Company

509 Diversey Boulevard, Chicago, U. S. A.

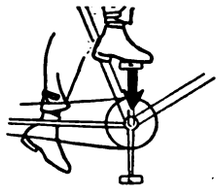
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Model Forty-Four, 34 H. P. $2250.
Spare Wheel, with inflated tire, brackets and tools, $74.
Magneto $150.

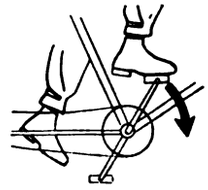
THE OFFSET CRANK SHAFT

Most automobiles develop sufficient power when they are traveling at a *high* speed. The greatest need is for power at *slow* engine speeds. Rambler Model Forty-Four can be operated smoothly and steadily at *three* miles an hour on *high* gear. This is because of the offset crank shaft.

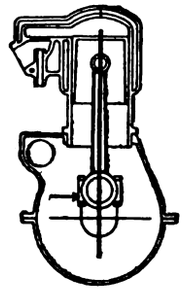


EQUIVALENT TO POSITION IN ORDINARY ENGINE OF PISTON AT EXPLOSION CENTER.

Rambler
The Car with the Offset Crank Shaft

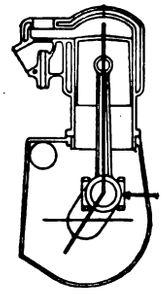


EQUIVALENT TO POSITION IN RAMBLER ENGINE OF PISTON AT EXPLOSION CENTER.



ORDINARY ENGINE. POSITION OF PISTON AT EXPLOSION CENTER. EXPLOSION EXERTS NO TURNING EFFORT TO CRANK SHAFT. THE DEAD CENTER WASTES ENERGY. SHOCK FALLS ON BEARINGS.

How the Offset Crank Shaft is an Advantage



RAMBLER OFFSET CRANK SHAFT. POSITION OF PISTON AT EXPLOSION CENTER. FULL POWER OF EXPLOSION EXERTS TURNING EFFORT TO CRANK SHAFT. DEAD CENTER ELIMINATED. NO ENERGY WASTED. NO SHOCK TO BEARINGS.

Seven passenger model, forty-five horse power with offset crank shaft, $2500. Other models, $1150 to $2500. Write for catalog describing in detail Rambler offset crank shaft, Spare Wheel, straight line drive and other exclusive features of the new Rambler models.

THE CAR OF STEADY SERVICE

Thomas B. Jeffery & Company, Main Office and Factory, Kenosha, Wis.

Branches and Distributing Agencies:

Chicago, Milwaukee, Boston, New York, San Francisco. Representatives in all leading cities.

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, November 26, 1908. No. 9

OUTCOME OF TIRE CONFERENCE

American Motor Car Manufacturers Table Report—Chairman's Communication Brings Conspiracy Reply.

The situation growing out of the conferences of the tire manufacturing members of the Motor and Accessory Manufactuers, Inc., which had for its purpose the reduction of the list prices on tires appears to have caused some misunderstanding on the part of a number of those most concerned.

It will be recalled that at the now rather historic conference in Cleveland the chairman presented a revised tariff which he insisted be adopted, but which by a vote of 6 to 6 was not adopted, the meeting really coming to an end without substantial result. Despite the fact, the chairman appears to have been under the impression that conference committees which had been named by the Association of Licensed Automobile Manufacturers and the American Motor Car Manufacturers Association had been empowered to obligate the members of their respective organizations to abide by the action of the Cleveland meeting. To that end he forwarded a transcript of the minutes of the Cleveland meeting to the respective committees of the two outomobile manufacturers associations and called on them to instruct their agents to specify the tires the makers of which by their vote had inclined to the adoption of his schedule, which was supposed to represent the views of the A. L. A. M. and the A. M. C. M. A. The minutes showed just how each party to the Cleveland conference had voted and the use of them has left a train of bitterness.

What action was taken by the License Association has not been learned, but it just has become known that when their representatives rendered a report, the American Motor Car Manufacturers laid it on the table. It has become known also that the chairman of the latter association's committee wrote the chairman of the tire makers' conference that he (the tire chairman) was laboring under a misapprehension and that none could become a party to any procedure which so plainly suggested a conspiracy in restraint of trade. At last accounts, the matter rested there.

Mitchell to Operate Its First Branch.

A branch store and warehouse in Atlanta, Ga., has been decided upon by the Mitchell Motor Car Co., of Racine, Wis., where James M. Cram, of the home office will be in charge. The branch will be the distributing center for Georgia, North Carolina, South Carolina, Alabama, Louisiana and Florida, and will be the first established by the Mitchell company. Immediately following the Savannah automobile races. President William Mitchell Lewis and Sales Manager Gilson will visit Atlanta to select the location, following which they will visit New Orleans and Cuba.

Freight Rates Due for Big Boost.

Freight rates to California from the East are to be raised considerably on the first of the year, making an increase of from $25 to $40 each on big cars. From the New Eigland States the rate will be $8 per hundren pounds, and from the Middle States about $7 per hundred, as against the old rate of $6 per hundred. The dealers who will be affected by the raise are making the coming increase the basis for a vigorous campaign with prospective customers, urging them to buy at once to save freight costs.

Why Ford's Big Capitalization Increase.

In explanation of the Ford Motor Co.'s increase of capital from $100,000 to $2,000,000, the secretary of the company, James Couzens, says that the change is merely the transfer of $1,900,000 from the surplus to the capital stock. "We are rather proud of the record of the past five years," he continues. "We have been able to grow from comparative insignificance to a $2,000,000 concern, cash all paid up and no stock for sale."

APPROVES POPE REORGANIZATION

Court Overrules Objections and Authorizes Acceptance of $1,500,000 Offer—How New Company Will be Formed.

Despite the suspicions and opposition of Thomas H. O'Connor, the Jersey City holder of 100 shares of the Preferred stock, Vice-Chancellor Howell, sitting in the Chancery Court, Newark, N. J., on Thursday last, 19th inst., authorized the receivers of the Pope Mfg. Co., to accept the $1,500,000 offered for the Pope assets by the reorganization committee.

Steps already have been taken to secure the concurrence of the courts in Maryland, Massachusetts and Connecticut, in which latter state the reorganized company probably will be incorporated.

This favorable decision will permit the company quickly to terminate the receivership and to again stand on its own feet, as well as immediately to pay the creditors the fourth and final dividend of 25 per cent. The creditors thus will have received 100 cents on the dollar, and as the huge $22,500,000 capitalization will be reduced by the reorganization to $6,500,000, with $800,000 worth of 6 per cent. mortgage notes, the burden of the new company will be more in keeping with actual conditions.

Of the reduced capital, $4,000,000 will be common stock and $2,500,000 preferred stock. Holders of the outstanding preferred stock in the old company, amounting to $2,391,000, are to receive 75 per cent. of the par value of the old stock in new preferred stock and 83 per cent. of the par value of the old stock in new common stock. To effect this will require the exchange of $1,793,250 of the new preferred stock and $1,984,530 of the new common stock. Holders of the second preferred stock in the old company get 20 per cent. of the value of the old second preferred stock in new common stock. To redeem the $8,625,100 worth of this old second preferred that is outstand-

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ing, will require $1,725,020 of the new common stock. The common stock in the old company will have no participating value in the new.

The owners of first and second preferred stock in the old company have deposited their stock with the reorganization committee, which will buy in the old company's assets and properties after the receivers have paid off all the outstanding indebtedness, when the new company will be formed and the new stock issued. For its services in financing the transaction and in agreeing to buy up the $800,000 worth of 6 per cent. mortgage notes which the new company is to issue, the underwriters are to take $500,000 worth of the preferred stock in the new company, and $90,450 in new common stock.

The distribution of the securities of the new company upon its starting business therefore will be as follows:

Syndicate for $800,000 cash	$500,000	$90,450
First preferred stock..	1,793,250	1,984,530
Second preferred stock.		1,725,020
Balance in treasury ...	206,750	200,000
Total	$2,500,000	$4,000,000

For the $800,000 in cash supplied by the syndicate there is the corresponding issue of $800,000 in notes, which must be added to obtain the total of security liabilities.

The preferred stock will be entitled to cumulative dividends at 6 per cent. from August 1, 1908, and no dividends on the common stock will be made until all back dividends on the preferred are paid up. Similarly no dividends on any of the stock will be paid until the mortgage notes are paid.

In ruling against the objecting O'Connor and in favor of the receivers, Vice-Chancellor Howell after a brief resume of antecedent circumstances, proceeded to point out the risks involved in the carrying on of such a business from which he drew the conclusion that investors would probably not consider any proposition looking to the taking the plants as a permanent investment.

These circumstances, the vice-chancellor holds, limit the persons who would be likely to entertain the idea of purchasing the property to an extremely small number, and go almost to the extent of demonstrating that the present owners of the properties, the stockholders, are not only the natural and logical bidders, but must be almost the only bidders.

The vice-chancellor adverts also to the fact that the court is always anxious to avoid having any business operated under its control longer than is absolutely necessary to pay the creditors and preserve the property from destruction, and always looks with favor upon business arrangements whose object is to relieve the court from that responsibility. The vice-chancellor goes on to say:

"I think it appears by the testimony that the property which the reorganization committee desires to purchase is worth, as it stands, as a going business, as between a willing purchaser and a willing vendor, somewhat more than the sum offered by the committee, but it is apparent that the value of the property is not sufficient to pay the whole of the first preferred stock, which I understand to be preferred to the other issues, both as to capital and to dividends, and that for the purposes of this motion we may disregard the second preferred stock and the common stock. The committee reorganizations represent all the outstanding first preferred stock except 245 shares, 100 shares of which belong to the objector.

"The discrepancy may be affected by the business considerations above stated, by the financial conditions of the country, by the financial conditions of the automobile and bicycle trade, or by the dozen other matters which enter into a large business.

"Again, the total outstanding first preferred stock of the Pope Mfg. Co. is $2,345,500. The objector's holdings amount to 100 shares of the actual par value of $10,000. While the holder of a single share has the same legal right to object to this sale that he would have if he held a great majority of the stock, yet he does not appeal to the court with as great favor, for the reason that the very great majority of his fellow-stockholders have decided upon the proposition with a judgment very different from his. And particularly is this true in this case in which the objector does not go to the trouble of giving the court any information concerning the facts from his own standpoint.

"The case must, therefore, rest on the petition and testimony adduced on behalf of the receivers. I will advise an order that the receivers be permitted to accept the offer."

Iowa Concern to Specialize Farm Vehicles.

The Bertschy Motor Co., of Council Bluffs, Ia., has been organized to make combination traction engines and pleasure cars, and also freight trucks for city use, with automobile fire engines as a side line. The leader will be a machine for farm use, which after hauling gang plows in the fields or loads of grain to market on week days, can on Sunday be converted to a vehicle to carry the family to church. The company also plans to a rebuilding and repairing business. It is incorporated nuder Nevada laws, and is capitalized at $50,000, of which $20,000 is said to have been subscribed for already, chiefly by members of the Council Bluffs Commercial Club. The officers chosen are: T. R. Children, president; A. J. P. Bertschy, vice-president and general manager; George S. Wright, secretary; and Ernest E. Hart, treasurer.

Buyer Found for Eisenhuth Plant.

Bond holders of the defunct Eisenhuth Horseless Vehicle Co., of Middletown, Conn., have accepted a proposition to sell to the Silent Typewriter Co., of New York City, at 75 per cent. of the par value of their holdings. The total of outstanding bonds is $110,000, and at the meeting in Middletown on the 20th inst., 22 of the bond holders, representing $85,000, signed the agreement, with the provision that all of the owners will sell at the same price. The purchasing company is given until next March to take up its option.

Injunction Saves a Western Factory.

An injunction against dismantling the Owen Thomas Motor Co.'s plant at Janesville, Wis., was obtained by Owen Thomas recently in bare time to prevent the buildings being torn down by workmen employed by the C. & N. W. railroad. The railroad company had leased the building to the Thomas company for a plant, for a year, but as the latter concern did not appear very active, the railway employes tearing down the other buildings in the yard were directed to include the Thomas plant.

To Handle Federal Tires in New England.

William P. Cronin, formerly with the Diamond Rubber Co., has become president of the Standard Tire & Rubber Co., of Boston, Mass., with offices and salesrooms at 102 Portland street. James S. Waddell, long in the rubber business, assumes the duties of treasurer. The concern will handle Federal tires, and will shortly open a branch in the Boston up-town automobile district.

Three New Taxicab Companies Organized.

Three new taximeter cab companies entered the lists last week and despite the asserted legal claim of a New York company to the exclusive use of the word "taxicab," each of the new comers includes that term in its title. They are the Citizens Taxicab Co., Cleveland, Ohio; the Reading Taxicab Co., Reading, Pa., and the Lackawanna Automobile & Taxicab Co., Scranton, Pa.

Speed Changing Pulley Moves to Anderson.

The Speed Changing Pulley Co., formerly of Indianapolis, has taken possession of its new factory at Anderson, Ind. The buildings have 60,000 square feet of floor space, and will be chiefly devoted to the manufacture of the chassis for the Studebaker motor buggy.

Clifton Sails for European Visit.

Charles Clifton, of the George N. Pierce Co., and president of the Association of Licensed Automobile Manufacturers, this week sailed for Europe. He will be absent about one month, and will, of course, visit the Paris show.

Typhoid Lays Hold of Wetzel.

Thomas J. Wetzel, the well known New York sales agent, is seriously ill with typhoid fever. On Tuesday last he was removed to a private hospital and was doing as well as could be expected.

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IN THE RETAIL WORLD.

The Monarch Motor Car Co., has opened a branch at 24-26 Eighth street, N., Minneapolis, Minn. J. H. Kersten is in charge.

The Lewiston Automobile Co., of Lewiston, Mont., is building a large stone garage. The company plans to handle the Franklin.

West & Vaiel, of Springfield, Ill., have opened a garage next their electric light plant. It will have a fully equipped repair department.

H. Perrin & Son, carriage dealers in Mankato, Minn., have embarked in the automobile business. They will handle the Maxwell.

E. D. Carlough, of Paterson, N. J., has moved to his new building at 175 Van Houten street. It comprises a show room and repair shop for Franklin cars.

The Klafferthere Garage, in Chihuahua, Mexico, was destroyed by fire on the 10th inst. The total loss is close to $750,000, including 22 cars belonging to patrons.

Beloit, Wis., is to have another automobile agency. It will be known as C. Mattison & Son, the senior member being the owner of another established local business.

Detroit's already large agency list has had another addition in the C. B. Fear Automobile Co. The concern has taken a store at 844 Woodward avenue to handle the Gyroscope.

Urling & Co., of Pittsburg, Pa., are removing from 939 North Wegley avenue to 6112 Broad street. In addition to handling the Corbin, the firm will manufacture wind shields.

John Hoopes, of Westchester, Pa., has sold his business to Harry J. Walter. The garage and repair shop are being moved to the Mercer building on West Miner street.

W. L. Tedford, formerly in the commission business, has sold out and will start an automobile salesroom and garage in Little Rock, Ark. He is planning a two-story brick building.

Cowan Rogers has leased the brick garage which is being built at Gay street and main avenue, in Knoxville, Tenn. The building will be ready for occupancy on the first of the year.

The Franklin Automobile Co., of Boston, Mass., has removed its repair and garage departments from 61 Wareham street to 31 Irvington street. The change gives a large increase in space.

The Standard Motor Co., 616-618 North Broad street, is the latest addition to Philadelphia's motor colony. William P. David, formerly a member of the Kelsey Motor Car Co., is the proprietor.

The Eagle Automobile Co., of Avondale, near Cincinnati, O., is building a garage at 3139 Reading road. The structure will be of concrete blocks and the foundations will be strong enough for six stories if they are required.

S. G. Chapman has resigned as president and general manager of the Consolidated Motor Car Co., of San Francisco, Cal., agents for Pope and Franklin cars. He is succeeded by Harry A. Weihe.

All the property and effects of the bankrupt Charleston Motor Co., of Charleston, S. C., were sold at auction on the 30th ult. The trustee in bankruptcy, Walter C. Finger, is preparing his final report.

James F. Patton, for five years superintendent of the F. B. Stearns factory in Cleveland, O., has started in business for himself. He has opened an automobile repair shop at 4509 Euclid avenue.

The Weed Garage, 233 Ontario street, Toledo, O., has been sold to August B. Uhl, who has been its superintendent for two years. It will be conducted under the name of The Standard Garage hereafter.

Robert R. Ashwell, of Hartford, Conn., has opened his new garage at 347-349 Trumbull street. It contains 31,000 square feet of floor space and accommodates 250 cars. The show rooms feature the Franklin.

The Sears-Nattinger Automobile Co., of Des Moines, Ia., has changed its name to the Sears Automobile Co. The change is due to the death of Nattinger, who was killed in an automobile accident recently.

Quint Bradshaw and Henry Conn have leased the lower room of the Odd Fellows building on Depot street, La Harpe, Ill., for an automobile salesroom and garage. Adequate repairing facilities are being installed.

Gotfredson Bros., well known merchants of Green Bay, Wis., have decided to embark in the automobile business. A building on Jefferson street, at the corner of Main street, has been selected for their salesroom and garage.

A new agency is being organized in Waterbury, Conn., to handle Pope and E-M-F. cars. Its backers include Charles S. Woodward, Ira F. Bachelder and Henry F. Stackman, prominent real estate men, with offices at 21 East Main street.

The Kansas Auto & Supply Co., 526 Quincy street, Topeka, Kan., has been sold by its proprietor, W. E. Mallory, to A. C. Longren and Claus J. Carlson. Under the new ownership the concern will be known as the Kansas Motor Car Co.

C. W. Lindsay and H. A. Wetmore have formed a partnership for the sale of Thomas cars in Sioux City, Ia., where they will establish a garage. Their territory includes western Iowa, eastern Nebraska and southern Minnesota and South Dakota.

Eddie Bald, once famous in bicycling and subsequently as an automobile race driver, has resigned as sales manager for the Crescent Automobile Co., of Pittsburg, Pa. He has taken the sales management of the Mutual Motor Car Co., of the same city.

Frederick F. Goodman, Inc., automobile garage at 51-55 West Ninety-third street, New York City, has assigned. A petition in bankruptcy has also been filed against the concern. Judge Hough appointed Hamilton Holt as receiver. The assets are estimated at $5,000.

The Auto Livery Co. has been organized in New Orleans, La., to do a general automobile business. The concern is backed by Ginder Abbott and Palmer Abbott, who have had considerable previous experience locally, together with E. J. Hewling and Joseph Woodward.

George Tebeau, baseball magnate and owner of the Kansas City team, has opened an automobile establishment in Kansas City, Mo. It is located at 1716 Grand avenue and has the agency for the Stearns. A large garage is being added, which will be ready by the first of the year.

The Haynes Automobile Co., of Minneapolis, Minn., is to resume business, carrying the agency for three well known cars in a large northwest territory. The company sold out a year ago, but has assumed its old name and will be under the ownership of Harvey S. Haynes, as before.

In Philadelphia the Maxwell-Briscoe Motor Co. has leased the Jeffery building, 207-209 North Broad street. The building will house both the wholesale distribution organization and the local agency, which latter will be called the Longstreth Motor Car Co., instead of the Kelsey Motor Car Co., as formerly.

Wichita, Kan., is to have its seventh automobile agency in the Star Automobile Co., which has been formed by Hugh E. Roberts, E. N. McGregor and A. C. Houston. The company, which is erecting a $16,000 building, will distribute the Overland in several states. J. J. Sprague has been appointed manager.

The interests of A. E. Howe in the Howe Motor Car Co., 51-53 Bank street, Newark, N. J., have been purchased by M. F. O'Neill. While the present location will be retained, the name of the concern will be canged to the O'Neill Motor Car Co. Howe will devote himself exclusively to his automobile business in Paterson, N. J.

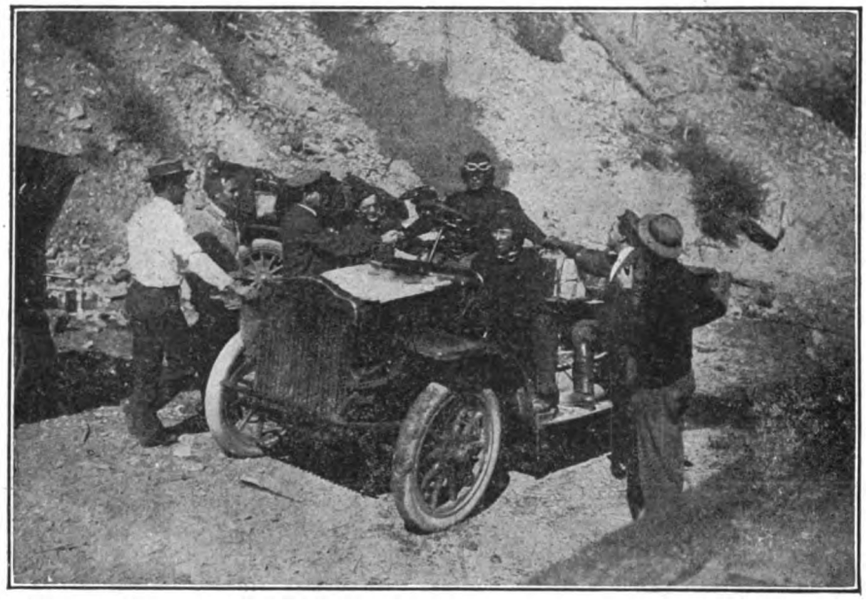
A branch of the Olds is being opened in Louisville, Ky. The local sales will be in charge of Henry C. Colgan, while Frank Glenn, Jr., will be general manager for the territory, including Kentucky, Tennessee, Alabama and Arkansas. A Lexington (Ky.) agency has been placed with Archie Hamilton, who has located next the Phoenix hotel.

To handle Jewel cars in New York City a new company has been formed, which will be called the Jewel Motor Car Co. of New York. A location has been taken at 1662 Broadway where the full line of Jewel models, made by the Forest City Motor Car Co., of Massillon, O., will be shown. J. P. Stoltz, of 420 West Twenty-third street, is the proprietor.

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WHITE WINS

Los Angeles to Phoenix Road Race



A brilliant victory was scored by the White Steamer in the recent stock-car race through the mountains and over the desert from Los Angeles, California, to Phoenix, Arizona. Once again the White demonstrated that in a stock-car competition and over roads such as exist in most parts of the country it is faster than any other type of machine. Such a contest as the Los Angeles-Phoenix race is far more significant than a race between specially built cars over specially selected and carefully prepared highways. This latest White victory indicates to the purchaser just what kind of service he may expect from the type of car which he can buy and over roads such as he will have to cover.

The White is the fastest car on give-and-take roads, not because it has the highest-powered engine, but because it delivers at the rear wheels a larger percentage of the power of the engine than any other type. Furthermore, that power is available under all conditions, whether running fast or slow, and no time is lost in shifting gears or in waiting for the engine to "pick up speed." In other words, under ordinary road conditions, the flexibility of the White engine will do what great power in other types of engines cannot do.

Write for circular describing the 1909 models.

THE WHITE COMPANY

CLEVELAND, OHIO

NEW YORK CITY, Broadway at 62d St.
BOSTON, 320 Newbury St.
PHILADELPHIA, 629-33 N. Broad St.

PITTSBURG, 138-48 Beatty St.
CLEVELAND, 407 Rockwell Ave.
CHICAGO, 240 Michigan Ave.

SAN FRANCISCO, Market St. at Van Ness Ave.
ATLANTA, 120-122 Marietta St.

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THE MOTOR WORLD

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NEW YORK, NOVEMBER 26, 1908.

The Standardization of Control.

Frequent observation has been made of the nonchalant way in which many designers arrange the accommodation for the driver of the car without due deference to his bodily comfort or to the safety which is supposed to lie in the facility with which he is able to operate the machine. The general crudity of the arrangements for controlling the vehicle is disappearing with time and experience, to be sure, but it is manifest even yet to a degree which is far from comforting. Just why it should be necessary to arrange gear levers so short as to require the driver to lean far from his seat in effecting some of the changes, for instance, or why the pedal foot plates should be elevated so far that the heel of the operator must be kept off the foot board at all times when the toe is resting on the plate, is difficult to understand. The inconvenience which is manifest to an astonishing degree is all the more to be wondered at since the subject already has attracted so much attention, and has been so successfully wrought out in a large number of cases.

A point of noteworthy importance in this connection is that the different methods of control prevailing on various cars are tremendously confusing to the operator who is called upon to change from one to another. This objection might not be held valid were it not that many owners possess two or more machines so widely differing in methods of control that to change repeatedly from one to another may constitute a source of real danger. Furthermore, were there any singular merit in the many systems which differ only in smaller details, there would be less objection to the variety. As it is, little aside from the individual taste of the designer appears to excuse many points of difference. Certainly if absolute standardization were welcome anywhere about the machine, it would be in the vicinity of the driver's seat.

Efforts at standardization in this particular thus far have been confined to the size of the steering wheel and its position with regard to the seat, while the height of the seat also has been brought down to narrow limits. The absolute position of the levers and pedals however, the length of throw, and amount of resistance to movement, still remain at the discretion of the builder. Therein lie considerable differences which, to the skilled and cautious driver are of small account, but which to the unskilled driver, particularly if compelled to assume the control of an unfamiliar vehicle on short notice constitute ground for considerable embarrassment, if not actual peril. Generally speaking there would be little to sacrifice if all manufacturers were to agree upon a standardized control, and much to gain. The trend which is guided by imitation of successful achievements leads in this direction sometimes, but frequently is limited rather to appearance and mechanical detail than to the element of the driver's comfort. The subject is an easy one to discuss and as it depends upon no complex or befogging theories, should prove an easy movement to encourage successfully.

While the establishment of the automobile has been accomplished speedily in the appreciation of the public and its utility has been granted open and gratifying recognition, it is evident that its real position remains to be defined properly. This is particularly evdent in the framing of legislative enactments, though the spirit there shown is probably but an index of a feeling which is current pretty generally. Automobile laws are framed for the restriction of automobiles—not of automobilists; accidents are ascribed to the cars, not to their drivers; even where credit is given for a remarkable or unusual performance, it is to the machine rather than to the human agency which guides it. When the definition of the motor vehicle as a purely inanimate and passive utensile in the hands of the operator is properly fixed, it may become a simpler matter to adjust questions pertaining to its use by the public and to eliminate the abuses which do so much harm to the cause.

Private owners who are inclined to rebel at the amount of expense involved in the pursuit of motoring should be taught the judicious treatment of the tire problem. Tire upkeep is, as it always has been, one of the most important items in the grand total of car maintenance. That it is usually much higher than really is necessary, however, is almost a foregone conclusion. If the amateur driver and mechanic could only be taught to keep his tires inflated to the proper pressure at all times, and to have recourse to vulcanization of all small cuts and tears as soon as they appear, there would be far less complaint of the short life of shoes and tubes, which after all, are very little to blame for most tire troubles.

It is crystalizing an expression of contumely to perpetuate the term "toy tonneau." The motor car is frequently referred to as a plaything of the rich, but only in derision, and to endorse the sentiment of its inutility is not alone unseemly, but belittling to the machine. "Baby tonneaus" are bad enough in all conscience from the point of view of discomfort and the danger of being cast out bodily at the first sharp turn in the road. But to label them thus with their shortcomings is to court the inevitable end of a passing fad.

When a large, old and long respected company, such as the Pope Mfg. Co., is able to lift a heavy burden and to wholesomely emerge from serious trouble, the industry with which it is identified and to which it has been a credit scarcely will withhold felicitations. That the company paid 100 cents on the dollar will add to the sincerity of the felicitations.

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THE WEEK'S INCORPORATIONS.

New York City, N. Y.—General Taxameter Co., under New York laws. Increase of capital from $5,000 to $320,000.

Cleveland, O.—Wright Auto Horn Co., under Ohio laws, with $35,000 capital. Corporators—C. M. Hartley and others.

Auburn, Me.—Darling Automobile Co., under Maine laws, with $10,000 capital. Corporators—G. R. Hunnewell, president; V. S. Darling, treasurer.

Chicago, Ill.—Standard Automobile Station, under Illinois laws, with $2,500 capital. Corporators—C. S. Everett, Joseph Seiler and L. G. Roach.

Chicago, Ill.—Woods Electric Garage, under Illinois laws, with $2,500 capital. Corporators—A. L. Schwartz, George H. Foster and John F. Rosen.

Waterloo, Ia.—Moore Auto Co., under Iowa laws, with $10,000 capital. Corporators—D. J. Moore, president; William Galloway, secretary and treasurer.

Sandy Hill, N. Y.—Adirondack Motor Car Co., The, under New York laws, with $10,000 capital. Corporators—M. O. Kasson, George N. Ney and G. H. Ingalsbe.

New York City, N. Y.—Ralph K. Mulford Co., under New York laws, with $1,000 capital. Corporators—Howard O. Lente, Ralph K. Mulford and Michael J. Driscoll.

Chicago, Ill.—Kissel Motor Co., under Illinois laws, with $10,000 capital; to deal in automobiles. Corporators—H. Darnstetter, W. A. Johnston and E. P. Hornack.

Minneapolis, Minn.—Mich Automobile Co., under Minnesota laws, with $10,000 capital. Corporators—William M. Wright, Florence Wright, Harry J. Mich, and Jean Mich.

Madison, Wis.—Madison Automobile Co., under Minnesota laws, with $10,000 capital. Corporators—Norwood J. Hitz, Abraham J. G. Forry, Carlisle Strader and Thomas B. McGregor.

Chicago, Ill.—International Automobile Co., under Illinois laws, with $20,000 capital; to manufacture and deal in automobiles. Corporators—E. C. Haynes, C. E. Hall and J. W. McDaniel.

Chicago, Ill.—Great Central Electric Co., under Illinois laws, with $25,000 capital; to manufacture and deal in automobiles. Corporators—John S. Crowell, J. E. Haschke and F. L. Harford.

Lóganspirt, Ind.—Bendix Automobile Co., under Indiana laws, with $200,000 capital. Corporators—Vincent Bendix, H. Clay Calhoun, Frederick Patterson, W. S. Resor and J. H. Behrens.

Scranton, Pa.—Lackwanna Automobile and Taxicab Co., under Pennsylvania laws, with $10,000 capital. Corporators—William Conrad, Edward Conrad, Otto R. Conrad and Charles C. Conrad.

Cambridge, Mass.—Norris Motor Car Co., under Massachusetts laws, with $50,000 capital; to manufacture and deal in automobiles and accessories. Corporators—Wesley S. Young, president, et al.

Detroit, Mich.—Herreshoff Motor Co., under Michigan laws, with $90,000 capital. Corporators—Charles M. Herreshoff, Louis Mendelsohn and Carl Reese, of Detroit; James A. Marr, Bridgeport, Conn.

Pittsburg, Pa.—Athletic & Auto Club of Allegheny County, State of Pennsylvania, The, under Delaware laws, with $25,000 capital. Corporators—G. S. Merriman, J. M. Ward, W. W. Jarvis, Pittsburg, Pa.

New Haven, Conn.—Baker Mfg. Co., under Connecticut laws, with $5,000 capital, $1,000 paid in; to manufacture spark plugs and accessories. Corporators—Otto L. Hemming, Gustave F. Hemming and Max L. Baker.

Buffalo, N. Y.—E. E. Denniston Co., under New York laws, with $30,000 capital; automobile accessories. Corporators—William G. Denniston, Worcester, Mass.; Edward E. Denniston and Clyde R. Sikes, 184 West Mohawk street, Buffalo.

Elmira, N. Y.—Thomas Resilient Wheel Co., under New York laws, with $25,000 capital; to manufacture wheels and other appliances. Corporators—G. H. Thomas, G. A. Davies, C. R. Murphy, C. F. Thompson, T. W. Cleveland, Elmira, N. Y.

New Haven, Conn.—Wheeler & Wuestefeld Co., The, under Connecticut laws, with $4,500 capital; to deal in automobiles. Corporators—George B. Wuestefeld and Dorothea Wuestefeld, of New Haven; Cyrus E. Wheeler, of Hartford, Conn.

New York City, N. Y.—Post Motor Co., under New York laws, with $30,000 capital. Corporators—George W. Post, Jr., Bronxville, Westchester county; John N. Blair, 27 Washington square, north; Louis F. Staar, 471 Ocean avenue, Brooklyn.

New York City, N. Y.—Greater New York & Suburban Transportation Co., under New York laws, with $25,000 capital; to build taximeter motor vehicles, engines, etc. Corporators—H. Lauterbach, C. E. Volz, Brooklyn, N. Y.; C. A. Conner, New York City, N. Y.

East Orange, N. J.—Brick Church Automobile Co., The, under New Jersey laws, with $100,000 capital; to manufacture and repair automobiles and motorcycles and conduct garage. Corporators—L. Burr Manning, John B. Todd and Melvin O. C. Hull.

New York City, N. Y.—Aero Tire and Supply Co., under New York laws, with $1,500 capital. Corporators—Michael O'Connor, 738 Seventh avenue; Lothair I. Siegel, 426 Central Park West, New York City, N. Y.; William R. Coleman, 147 Pierrepont street, Brooklyn, N. Y.

New York City, N. Y.—Cameron Motor Co., under New York laws, with $150,000 capital; to manufacture motors, engines, cars carriages, vehicles, etc. Corporators—E. D. Alexander, New Brighton, N. Y.; R. R. Logan, New York City, N. Y.; F. Hildebrandt, Tompkinsville, N. Y.

Council Bluffs, Ia.—Bertschy Motor Co., The, under Nevada laws, with $50,000 capital, $20,000 paid in; to manufacture combination traction engines and pleasure cars. Officers—T. R. Children, president; A. J. P. Bertschy, vice-president, and general manager; George S. Wright, secretary and Ernest E. Hart, treasurer.

COMING EVENTS

November 26, Savannah, Ga.—Automobile Club of America's 400 miles race.

November 26 and 29, Bakersfield, Cal.—Track meets.

November 26, Los Angeles, Cal.—Automobile Dealers of Southern California annual hill climb.

November 26, Denver, Col.—Colorado Industrial Exposition Association's race meet. Overland Park track.

November 28, Providence, R. I.—Rhode Island Automobile Club's hill climbing contest, "Dolly Cole" Hill.

December 5, Long Island Motor Parkway—Speed trials against time, auspices of the Long Island Motor Parkway, Inc.

December 12, Denver, Col.—Denver Motor Club's hill climbing contest, Lookout Mountain.

December 31-January 7, New York City—American Motor Car Manufacturers' Association's annual show in Grand Central Palace.

January 1-2—Quaker City Motor Club's two days endurance run, Philadelphia to Wilkes Barre, Pa., and return.

January 16-23, New York City—Association of Licensed Automobile Manufacturers' annual show, Madison Square Garden.

January 23-30, Philadelphia, Pa.—Philadelphia Automobile Trade Association's annual show.

January 27-February 3, Philadelphia, Pa.—Automobile Trade Association's eighth annual show, Second Regiment armory.

February 6-15. Chicago. Ill.—National Association of Automobile Manufacturers' Show, Coliseum and First Regiment Armory.

February 15, Detroit, Mich.—Detroit Automobile Dealers Association's show, Wayne Pavilion.

February 22, Ceveland, O.—Cleveland Automobile Dealers Company's show, Central Armory.

February 27-March 3, Hartford, Conn.—Automobile Dealers' Association show.

March 27-April 3, Pittsburg, Pa.—Automobile Dealers Association's show, Duquesne Garden.

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OLYMPIA UNVEILS NEW MODELS

London's Great Show Anticipates Revelations of the Paris Salon—Preponderance of Light Powered Cars.

Olympia, London's first and only orthodox show, opened its doors on Friday, 13th inst., and closed on Saturday last. As the first show of general significance this fall, and moreover, being sufficiently near to the great Continental centers of automobile manufacture to catch the drift of the times, it attracted more attention in the industry than the exhibitors at the later Paris Salon will admit that it merited. In fact as an excuse for the unveiling of several of the small cars which just now are occupying the attention of many of the makers, both British and Continental, it furnished an authentic endorsement to the current impression that the eyes of the foreign industry are pretty largely turned toward the machine which is easy to build and sell in considerable numbers rather than toward its former favorites of more elaborate construction and higher price.



GENERAL VIEW OF THE OLYMPIA SHOW IN LONDON

In the various exhibits, one feature hitherto of great prominence was lacking. Racing cars were barred—out of deference to the wishes of His Majesty, the King, it was said—and as the prohibition not alone eliminated the immense racing cars built for the big foreign contests, but "all cars designed for competitive purposes," the character of the show was somewhat unusual. One hundred and nine makers and agents staged cars of one type or another, and though racing machines were barred, the effect of the past racing season was manifest not a little in the details of the numerous "four-inch" cars, the engines of which were designed in accordance with the conditions governing the Isle of Man trials of last summer. In this connection also, the growing use of the long stroke motor—bred directly of racing definitions—was very marked. This was most evident in the case of the light cars of two and four cylinders, corresponding in price and other specifications to the moderate priced cars which are coming into so great prominence on this side of the Atlantic. Other "features" of the show included several new types of motor, several new six-cylinder models, the "elimination of the gearbox" in at least one case, increases in the number of shaft driven cars—and the usual surfeit of "detailed improvement."

In the staging of the show, no definite plan of decoration on a uniform scale was adopted, though the subject has been broached more than once and gravely discussed. The conservative and hit-or-miss method of permitting each exhibitor to fix up his own stand according to the extent of his fancy and pocket book resulted in a scene familiar to the show goer of several years ago in this country or to the frequenter of the French Salons. Being out of the atmosphere of Parisian extravagance, however, it lacked both the brilliancy and charm of the Continental shows.

Over 80 of the cars on view were exhibited as new models. Of these, three—the White, Cadillac and Buick—were of American origin. Others which attracted particular attention were the new Daimler models—five of the six types having the Silent Knight engine—the 38 horsepower Minerva, similarly equipped; the new Napier models, of two, four and six cylinders; and the "Two-Stroke," wherein a rather novel form of two-cycle motor is placed in an inclined position and with its air-cooled cylinder head and water-jacketed cylinders appears to embody even more novelty than in all probability it is entitled to. Its form certainly is unique.

Considerable attention was attracted by the latest form of Sheffield-Simplex—a "car without a gear box," just brought out. As its name implies, it is designed for continuous service on the direct drive. Despite the absence of the gearset, however, what might be considered by carping critics as a practical equivalent of that device is contained in a small adjunct to the transmission which contains a low speed forward gear and a reverse. The car is of the six-cylinder type, having a motor of 4½ inches "square" cylinder measurements and has a driving ratio of 3.1 to 1 on the direct connection. The reverse and low speed arrangements give a ratio of 6.15 to 1. It is claimed that the elimination of the gearbox—so-called—results in a reduction of the number of transmission parts by no less than 150.

Of the small cars, quite the leading feature from the point of view of tendencies in the industry, several proved to be forecasts of what the later Salon holds in store. Of these were the new 10 horsepower Mors, the 15 horse Mercedes, 10 Panhard, 12

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Hotchkiss, 10 horse De Dion, 10 horse Delage, and 10 horse Delaunay-Belleville. England's quota in this class included the new Napier, modestly rated at 15 horsepower, and boasting a worm drive among other interesting points; the Austin of the same power, and the 12 horse Talbot. Two cylinder models, suitable for either runabout or taximeter service were shown by the makers of the Delaunay-Belleville, Renault, Darracq, Charron and Napier cars.

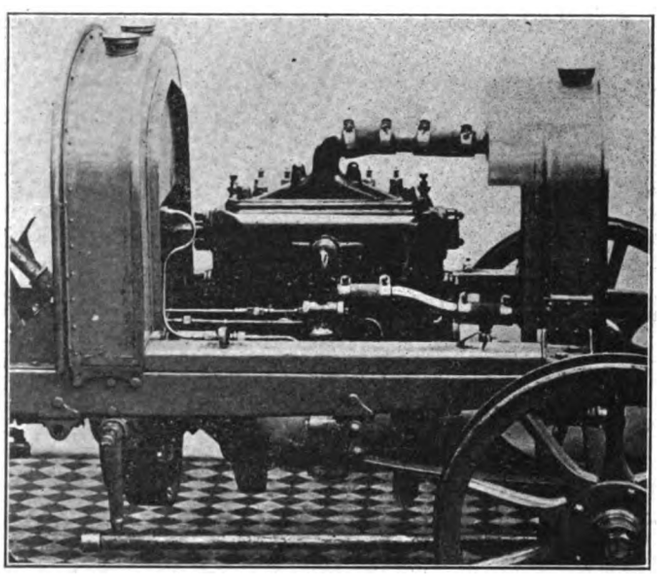
As for the tendencies apparent in detail, it was noticeable among other things that the popularity of the block type of motor is increasing among the makers. Several of the smaller types of car have these motors in remarkably condensed form. The Delage motor is a good example of this, though by no means the most complete in its class. Block castings, however, seems to be confined largely to motors of the popular low powered type. Larger motors, of course, have the twin form of casting to a prominent degree. Where two or more models are produced by the same maker in powers not too widely differentiated, the difference is frequently obtained by altering the bore and retaining the same stroke, one of the two thus obtaining the newly popular long stroke. A trend, which may be supposed to follow in the wake of the long stroke motor, is that looking toward the use of larger valves, many of which already are in evidence.

Improvements in detailed construction of the motors appear in the arrangements for mechanical force-feed lubricating systems for the cylinders and crank shaft bearings; the displacement of exhaust pressure for fuel feed systems in favor of automatic air-pumps; complete, double ignition installations in increased numbers; and a growth in the use of interlocking hand and foot control located either on the foot board or steering wheel. Ball bearings are practically universal on the better grades of car, whether large or small, and appear at practically important points except the crank shaft and the big ends of the connecting rods. The "gate" change gear system is prevalent, though frequently in crude form, and the almost universal type of change gear system is prevalent, though frequently in crude form, and the almost universal type of change gear is the sliding pinion.

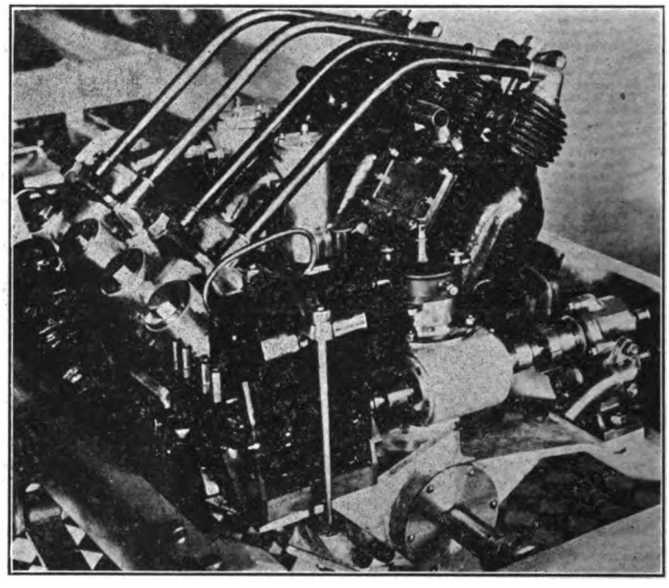
A marked impression gained from a general inspection of the vehicles as a whole was that of the rapid growth in the use of the closed car, particularly in the light landaulette and cab patterns. Covered bodies of all types were very numerous, and upon the larger examples, wonderfully fine workmanship and ingenuity of design were manifest. The bulk of the display of light cabs was at once impressive and suggestive. Prices, as a rule, revealed small reductions, considering the general run of vehicles. A few exceptions to the rule of constancy, however, were to be found in instances where makers had seen fit to make a small advance on former prices.

The accessory section was replete with the usual impossible array of new and old novelties, providing at once the most bewildering and fascinating section of the show. Among the larger components to be found, was the Allen-Liversidge front wheel braking system, described in last week's Motor World. Of the promising novelties on view, the field of ignition furnished the better part. As is always the case with an early show, however, the complete cars furnished so much material for study as to preclude the possibility of examining them in detail.

Among the novelties of the British show season is a collapsible funnel intended for use in filling the fuel tank and radiator when touring. It is formed of successive tapering rings of thin sheet metal much the same as the ordinary folding drinking cup, except that at the bottom it is provided with a neck of relatively small diameter intended to fit into the filling aperture. When collapsed it will go into the tool kit very nicely.



THE COMPACT 4-CYLINDER DELAGE



ODD CONSTRUCTION OF THE "TWO-STROKE" MOTOR

More Taxicabs for San Francisco.

San Francisco, Cal., has taken to taximeter cabs with such avidity that a number of companies for their operation have recently been formed. Among the latest of these is a $300,000 concern headed by Fay C. Beal, president and general manager. The directors include C. M. Beal, George P. Fuller, L. W. Harris, R. J. Marx, Frank Hooper and Clarence R. Ward. It is also rumored that the United Carriage Co., at present operating the largest hack and transfer system in the city is planning to install taximeter motor cabs.

Birmingham to Buy Motor Trucks.

A delivery and transfer business which will use motor cars and trucks instead of horses has been started in Birmingham, Ala., and will be known as the Auto Livery Co The officers and directors of the company are H. T. Shoup, president; N. O. Tyler, vice-president; H. Lee Brown, treasurer, and A. J. Morgan, secretary.

Lindsley to Locate in Seymour.

The Lindsley Motor Car Co., Dowagiac, Mich., is reported to have let contracts for the construction of a factory building in Seymour, Ind. When it is completed it is the purpose of the Lindsley company to remove to Seymour.

Automobile dealers of Omaha and Council Bluffs have decided to hold a show in Omaha, Neb., from March 1 to 6, inclusive. The exhibition will be given in the Auditorium.

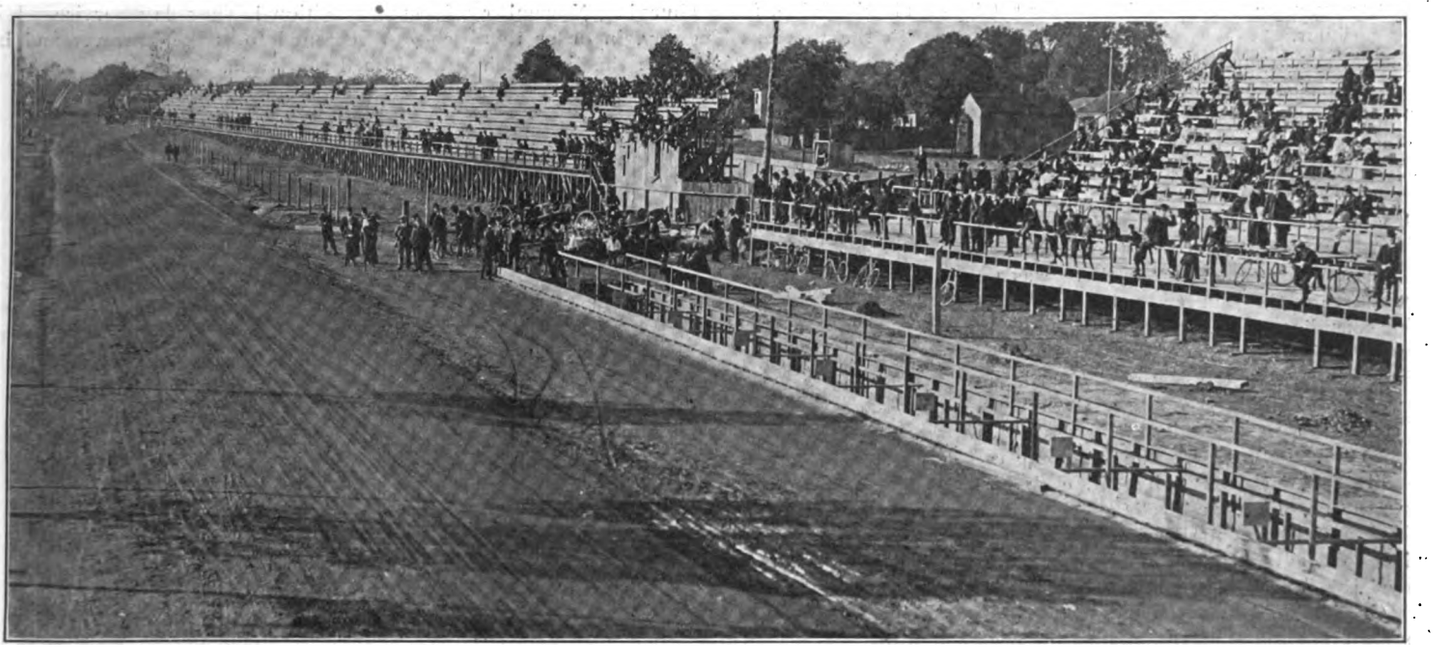
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SAVANNAH ON TIPTOE FOR GREAT SPEED BATTLE

Even Churches Yield to Interest in Grand Prize Event and Hold No Thanksgiving Services—Contest to be a Race of Drivers—Strang Fastest in Practice and Hemery the Favorite—Mighty Influx of Visitors From All Points of the Compass.

Thanksgiving Day in Georgia will be a very different kind of a holiday from that which is being celebrated to-day elsewhere in the United States. Instead of the traditional turkey shoot and church service, all of the city of Savannah, much of the State of Georgia, and of other states, will have started bright and early for the automobile race. Churches are closed, shooting ranges deserted, dinners getting cold, and with a goodly share of visitors from north, east, south and west, but mostly north, a throng which no previous forecasts had overestimated hangs on the outcome of the first American Grand Prize race, and which originally was organized as a "spite race" by the Automobile Club of America, of New York, which organization "used" the Savannah club to assist in pulling its foreign chestnuts out of the fire.

Starting at 9 o'clock, twenty drivers will scurry around the kite-shaped course. But because it is not only kite-shaped, but introduces a number of wonderfully complex side-steppings, kinks and reversals, it is quite the most wonderful course ever laid out in America for a great road race. Much of it has been specially prepared for the occasion. It has been oiled with such zeal that in places it has had to be sanded over to render it safe. It has been banked and tamped and rolled. In its 25.13 miles of length are opportunities for exceptional speed, exceptional skill in driving, and exceptional daring in taking chances. The course is picturesque in its setting; its hazards are all known by fanciful and suggestive names. Where church and State united on Tuesday in offering up Thanksgiving for a bountiful harvest, church, State and the people unite to-day, in the fulfilment of a long-cherished dream.



VIEW OF GRANDSTAND, THE OLD STAND WITH EXTENSIVE ADDITIONS IN THE BACKGROUND.

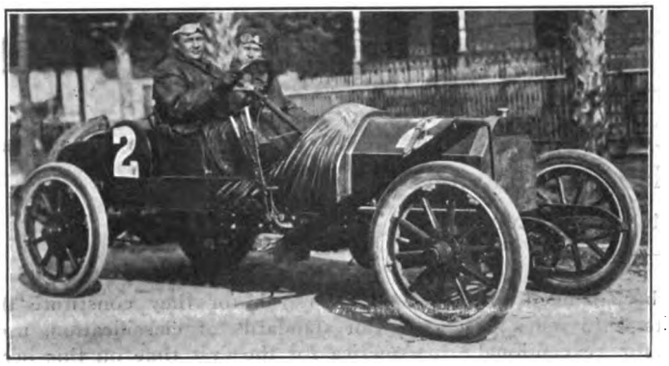
Like the Grand Prix in Europe, Savannah's great race was preceded by the light car race which yesterday afforded a foretaste of what might be expected on the morrow. It attracted attention chiefly because its setting was practically the same as that of the great event itself. Nevertheless in the performance of 15 small cars built not for racing purposes, but—ostensibly at least, and in most cases actually—for runabout and touring work, was sufficient interest in itself to hold the attention of a big crowd. For the difficulties of the 9.8 miles course may be held to have been in proportion, about as great to these machines, as the difficulties of the great course to the big cars.

The present definitions of "big" and "little" cars are intersting in this connection, as well as novel, for they constitute the European standards of classification, used in America for the first time on this occasion. When the disgruntled Automobile Club of America decided to assert its self-constituted prerogative by promoting a big international race in conjunction with the ambitious and aggrieved Automobile Club of Savannah, or even before the 16 lap Georgia circuit had been chosen for the 400 miles race, it announced the adoption of the European standards used this year in the Grand Prix race over the Dieppe circuit.

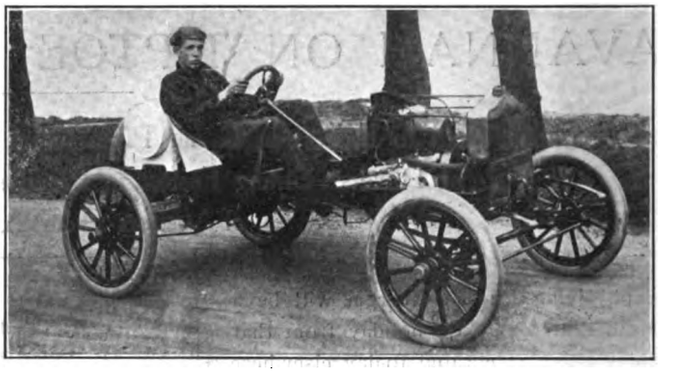
These rules require a cylinder bore of not more than 6.1 inches and a minimum weight of 2,420 pounds. The requirement for the light car race was a maximum bore of 3.75 and minimum weight of 950 pounds. No other restrictions were made as regarded size.

As is already well known, the arrangements for the race are very complete, while all sorts of inducements have been advanced to tempt the ambitious contestants. As a stimulus to encourage the establishment, if possible, of a new road record, the Savannah Automobile Club offers a cash prize of $2,500 to the driver who can beat Nazzaro's average of 74½ miles per hour made in the Targa Florio race on the Bologne circuit

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HILLIARD, LANCIA, READY FOR A SPIN



MUNTWEILER, MAXWELL, IN AN IDLE POSE

in Italy last year. The experts doubt if this can be done; the general opinion being that the average speed will be about 68 miles an hour.

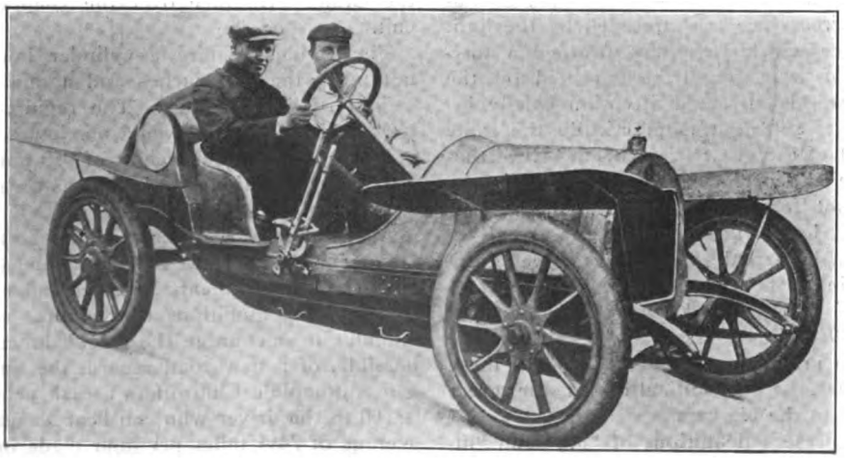
Every precaution has been taken to keep the course absolutely clear so that crowds will not handicap the drivers as has been the case in Vanderbilt Cup races. Even so, the southern crowds, being less familiar with motor cars than those of New York and vicinity, already have proved much easier to control. Last April at the stock car race on this same course, there was no trouble from this source, yet ample provision has been made to curb the unruly element. The military protection includes eight regiments of the National Guard, under command of Major William B. Stevens.

In addition to the military patrol, 135 flagmen line the course. The latter are essentially for the drivers' benefit, each carrying the usual red and yellow flags. The activities of Chairman Robert Lee Morrell and his associates who planned and arranged the contest, have been well rewarded. Grand and press stands have been thoughtfully erected at an angle to the road in order to permit spectators to get a better view of the cars as they sweep down the long stretch than when placed paralleling the course.

Indeed, the extent of the city's appreciation for the event is in no way better evidenced than by the fact that its churches actually changed the date proclaimed by the President of the United States as a day of Thanksgiving, from Thursday, November 26, to the previous Tuesday, in order that nothing might interfere with the Savannah public's desire to see the big race—a thing perhaps unparalleled in the country's history. Realizing that practically every churchgoer would attend the race instead of church services, the various clergymen agreed to hold these services two days ahead—all save one minister, who held out for the traditional Thursday service. His choir threatened to strike however and he was forced to give in.



BURNS, CHALMERS-DETROIT, ON A STRAIGHT STRETCH

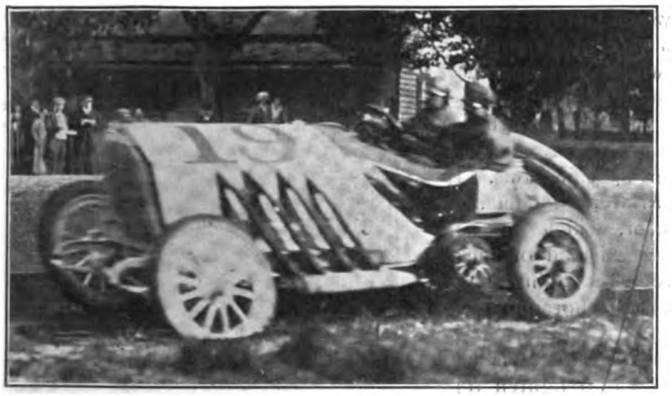


GEORGE ROBERTSON AND HIS BIRD-LIKE GREGOIRE

The big drawing card of the Grand Prize contest to-day is that the cream of the world's most famous drivers will be pitted in the fray, a feature which the last Vanderbilt Cup race lacked. The race will be one of drivers rather than cars, particularly as regards the foreigners. All the cars of the latter are of appoximately the same power and aside from accident and tire trouble handicaps, skill will decide the race.

Italy seems to have her share in the way of an "all star cast" of drivers; the team of six comprising five men who are famous in America as well as Europe. Piacenza is the only pilot not known on this side of the Atlantic, while the remaining quintet is composed of a former winner of the Vanderbilt Cup, Louis Wagner; Henri Fournier, one of the pioneer foreign drivers who made records in America some years ago; Alexandre Cagno, of Vanderbilt Cup note; Ralph De Palma, the one American driver on this team, who holds the world's mile track record of 51 seconds; and Nazzaro,

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ERLE, BENZ, AT THUNDERBOLT CURVE



HAUPT, CHADWICK, AT ISLE OF HOPE

that prince of the "dare-devils." It was Felice Nazzaro who won the three big European races of 1907; the Targa Florio, German Emperor's cup, and the Grand Prix; making an average of 71 miles an hour in the latter, while in the Florio, he set up the average of 74¼ miles an hour, the road-racing record. In addition to this, on the Brooklands cement track with a 4 cylinder Fiat, Nazzaro covered 121.58 miles in an hour. He agrees with other experts in the belief that a new road mark will not be established at Savannah, on acount of the numerous turns.

Of the Frenchmen, Francois Szisz, of early Vanderbilt and later foreign fame, will be watched, and his performance in the Renault compared to that of Lewis Strang, whom fortune favored twice this year and who like De Palma, is an American driving on a foreign team. Arthur Duray, who is to pilot a De Dietrich, as he did in the 1906 Vandelbilt, was born in New York City, although he cannot speak English, having lived abroad most of his life. Hautvast and Rigal are the only members of the French forces not known to Americans.

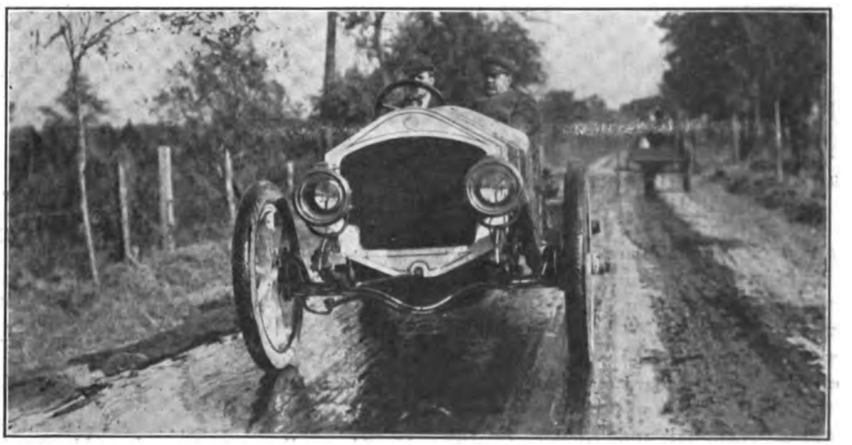
Victor Hemery, winner of the 1905 Vanderbilt Cup race, is the star of the German representation, while his team mates, Hanriot and Erle, will make their debut on this side in Benz mounts.

The American team has some good stuff in it. All are American boys except Harding, the driver of the National car, who is English. Aside from the latter, the team represents the newer crop of our drivers. Mulford and Seymour were brought into prominence through Briarcliff and recent 24 hours races. "Willie" Haupt was not known until the recent Vanderbilt Cup, in which he made such a splendid showing by holding the lead during the fourth, fifth and sixth laps, when an accident to his Chadwick mount spoiled his chances. Leonard Zengle, the Acme pilot, well known to Philadelphians, made his first appearance in a big road race at Fairmount Park on Labor Day, while Robert Burman has been making quite a reputation at hill climbs and track meets during the past year and was one of the Buick drivers in the Long Island Sweepstakes. All of these pilots are young fellows of more or less experience, but none is quite as seasoned as the majority of the European drivers. When the Grand Prize race starts, one driver will be missed—George Robertson, whose only performance at Savannah was scheduled for the international light car race, at the wheel of the French Gregoire car.



HAUTVAST, BAYARD-CLEMENT, IN A FAST TRY-OUT

While it is probable that no new road record will be established, fast time will be made nevertheless, as has been evidenced by the performances of the cars in try-outs. The fastest lap recorded during the days of practice was that of Lewis Strang, who, in his Renault on Tuesday's additional practice, spun around the 25.13 miles circuit in 20 minutes, 53 seconds, which is at a rate of slightly more than 72⅕ miles an hour—amazing speed considering the many turns



ZENGLE IN THE ACME—NOTE EXCESS OF OIL ON ROAD

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encountered. The clocking was, of course, unofficial, although S. M. Butler, of the Timers Club, and other expert timers caught this figure.

A glance at the cars themselves reveals the following brief statistics as regards specifications:

The highest powered machine is Duray's De Dietrich, rated at 125 horsepower, although its bore and stroke is the same as the 120 horsepower Benz and Fiat cars. The lowest powered entrants are a quartet of American cars rated at 50 horsepower—the Lozier, Simplex, Buick and Chadwick. In every instance the horsepower of the foreign motors is rated at just double or more than double that of the Americans; none of the European cars rating at less than 110. All of the latter possess the maximum bore, 6.1 inches, while the Simplex is the only domestic car that aproaches this diameter. The only six cylinder machines in the list are flying the stars and stripes, the Acme, Chadwick and National.

Fifty per cent. of the contending cars are shaft-driven, which is a bigger proportion than has been the case in the majority of big races within the last few years; chain drives having predominated in all the Vanderbilt Cup contests, and important events abroad. Despite the opinion which engineers have held for a long time that the chain drive would in time replace the propeller shaft design entirely on big racing cars, the latter type is apparently gaining favor. All the entered cars have three-speed or four-speed selective type change gears, with the exception of the two Renaults, which are progressive.

The heavyweight of the big contest is the Simplex, which tipped the scales at 3,325 pounds at the official weighing in last Saturday, while the lightest is the Szisz Renault, weighing but 2,525.



VICTOR HEMERY'S HITHERTO UNKNOWN SMILE

Seventeen of the field are equipped with Bosch ignition systems, including the entire foreign representation. The Chadwick and Acme have high-tension and the Buick a Remy equipment.

All of the foreign cars are out-and-out racing machines of Grand Prix type, while the Simplex, National and Lozier, of the American team, are essentially stock cars. The Simplex which Seymour will pilot is the same stock car with which George Robertson won the 24 hours race at Brighton Beach in October, and which participated in the Lowell race. The only change in the car is an increase in the bore of the cylinders and the substitution of larger valves, permitted by the cylinder specifications.

The Lozier entry is a Briarcliff model in all respects save the motor, which has a cylinder bore of 5¾ inches instead of the stock 5¼ inches; the stroke remaining 5¼ inches as in the regular 45 horsepower model.

The six-cylinder National candidate is a stock machine, dressed down to lighten it somewhat for racing, but has no special motor or other vital part. Its transmission is identical with the company's other "Big Sixes."

Inasmuch as the turns in the course are so numerous, there being more than 250 to be swung in the whole 400 miles drive, tires will play a vitally important part. That the strain on tubes in rounding corners is what does the damage, is a well-known fact. This has been demonstrated by performances at Ormond Beach. In the 300 miles race there last March, which necessitated very few turns, the late Cedrino drove the Fiat the entire distance on the same set of tires and the tires were quite cool when he finished and showed no signs of wear, while the same car on circular tracks has chewed up tires within a short time on numerous occasions.

Fifteen of the twenty Grand Prize contestants will be shod with Michelins, the

THE COMMITTEE IN C.



S. M. BUTLER, HERBERT LAW, E. R. HOLLANDER, [illegible]
S. B. STEVENS, A[illegible]

TABLE SHOWING NAMES OF DRIVERS AND SPECIF

No.	Car.	Driver.	Country	H.P.	No. Cyl.	Bore.	Stroke.	Ignition.
1.	Bayard-Clement	Victor Rigal	France	120	4	6.1	6.3	Bosch
2.	Lozier	Ralph Mulford	America	50	4	5.75	5.25	Bosch
3.	Simplex	Jos. Seymour	America	50	4	6.1	5.75	Bosch
4.	Buick	Robt. Burman	America	50	4	5.	5.	Remy
5.	Chadwick	Wm. Haupt	America	50	6	5.	5.	High tension
6.	Fiat	Felice Nazzaro	Italy	120	4	6.1	6.3	Bosch
7.	Acme	Leonard Zengle	America	60	6	4.99	4.99	High tension
8.	Benz	Victor Hemery	Germany	120	4	6.1	6.3	Bosch
9.	De Dietrich	Arthur Duray	France	125	4	6.1	6.3	Bosch
10.	Renault	Francois Szisz	France	115	4	6.1	6.2	Bosch
11.	National	Hugh N. Harding	America	60	6	5.	5.	Bosch
12.	Itala	Alexandre Cagno	Italy	110	4	6.1	6.3	Bosch
13.	Bayard-Clement	Lucien Hautvast	France	120	4	6.1	6.3	Bosch
14.	Fiat	Louis Wagner	Italy	120	4	6.1	6.3	Bosch
15.	Benz	Rene Hanriot	Germany	120	4	6.1	6.3	Bosch
16.	Renault	Lewis Strang	France	115	4	6.1	6.2	Bosch
17.	Itala	Henri Fournier	Italy	110	4	6.1	6.3	Bosch
18.	Fiat	Ralph De Palma	Italy	120	4	6.1	6.3	Bosch
19.	Benz	Fritz Erle	Germany	120	4	6.1	6.3	Bosch
20.	Itala	Giovanni Piacenza	Italy	110	4	6.1	6.3	Bosch

TABLE SHOWING NAMES OF DRIVERS AND SP[illegible]

No.	Car.	Driver.	H.P.	No. Cyl.	Bore.	Stroke.	Ignition.
1.	S. P. O.	H. A. Conners	18	4	3.25	5.1	Bosch
2.	Lancia	W. M. Hilliard	12-18	4	3.5	4.	Bosch
3.	Chalmers-Detroit	L. J. Bergdoll	30	4	3.75	4.5	Bosch
5.	Cameron	F. T. Cameron	18	4	3.75	4.	Remy
6.	Isotta	Al. Poole	10	4	2.4	3.9	Bosch
8.	Buick	Robt. Burman	18	4	3.75	3.75	Remy
9.	Maxwell	Arthur See	14	2	4.5	4.	Splitdorf
10.	Chalmers-Detroit	L. B. Lorimer	30	4	3.75	4.5	Bosch
11.	Buick	E. A. Hearne	18	4	3.75	3.75	Remy
12.	Maxwell	Thos. Costello	14	2	4.5	4.	Splitdorf
13.	Chalmers-Detroit	W. R. Burns	30	4	3.75	4.5	Bosch
14.	Buick	Ewing Easter	18	4	3.75	3.75	Remy
15.	Maxwell	Jos. Muntweiler	20	2	5.	5.	Splitdorf
16.	Buick	Earl Jeffers	18	4	3.75	3.75	Remy
17.	Maxwell	C. W. Kelsey	20	2	5.	5.	Splitdorf

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ARGE OF THE RACE



ERT LEE MORRELL, A. H. WHITING, DR. PARKS, F. J. WAGNER

entire German and Italian teams using them, in addition to three French cars and four American. The two Bayard-Clement cars and Duray's De Dietrich will carry Dunlops, while Mulford, in the Lozier, and Seymour in the Simplex, of the American team, will bank on Continentals. All will use demountable rims.

Savannah, Ga., Nov. 25.—The entire City of Savannah is on edge for to-day's curtain raiser of the Grand Prize event—the 200 miles international light car race, which is scheduled to start at 11 a. m. Never before in its history has this southern city been so overwhelmed with visitors or been under such a strain of excitement. Never has it witnessed such a pilgrimage of northern people as that which has been pouring in during the past few days, while thousands from the adjacent and distant cities of Dixie are augmenting the merry throng. The attendance is surpassing that of the stock car race held here last April many fold and those who are harbored in the special trains that brought them, are perhaps better off in regard to accommodation than those who are housed in the hotels. In addition to the army of respectable visitors a great horde of "promoters" also has embraced opportunities presented. Horse racing and pugilistic carnivals have been in full blast and the crowd of gamblers, card sharps and light-fingered gentry that follow in the wake of such "sports" is large and active.

The race which starts to-day will in all probability see 15 contestants face the mark, provided the S. P. O. car which was wrecked, can be tuned up in season. In this contest of the little fellows, it is hard to pick a winner. In the practice trials so many of them have shown their ability to get around the 9.8 miles course in slightly more than 10 minutes, that they seem pretty evenly matched in most cases.

The Maxwell, Chalmers-Detroit and Buick teams, which make up more than two-thirds of the list of contenders, will strive desperately to outpoint one another, for numerous reasons, while William Hilliard, who got acquainted with the motoring public at Briarcliff, will try to "show" the people with the little Lancia "Lampo," (which means Greased Lightning in Italian), and Al. Poole, who made so many friends when he drove an Isotta here in the spring, will go the limit with the Italian company's cradle youngster, the 10 horsepower "Baby Isotta." This was the car that Herbert Lytle was to have piloted, but his unfortunate attack of typhoid fever has precluded it. The little Isotta was purchased last week by George M. Townsend, a 1908 Yale graduate, and son of the late Judge William K. Townsend, of New Haven, Conn. To-day will be Poole's first appearance in a race since his accident while practicing for the Lowell (Mass.) race nearly three months ago, when he broke his collar bone in a smashup.

Frank T. Cameron will be at the wheel of the only air-cooled car, his 22 horsepower namesake, which he drove in the recent Long Island Sweepstakes. Louis J. Bergdoll, the young Philadelphia brewer and automobile dealer, will be the only real live millionaire driver in the race, and will stick to the wheel of his Chalmers-Detroit. This motor enthusiast first sprang into the



HANRIOT, BENZ, AND HIS NOVEL WIND SHIELD

public eye when he made a 100 miles stock car record at Ormond Beach, Fla., last March and later drove with less success at Briarcliff and Fairmount Park. Robert Burman is the only driver who will appear in both light car and Grand Prize events. K. R. Manville, the entrant of the American Aristocrat, a car of his own special design, sent word last Sunday that his entry would not start.

IFICATIONS OF CARS IN GRAND PRIZE RACE

on.	Clutch.	Change gear.	Drive.	Weight.	Wheel Base.	Tread.	Tire sizes, inches or mm. Front.	Rear.	Make of tires.
	Disc	Selective-4	Shaft	2,775	107	50	870x 90	880x120	Dunlop
	Disc	Selective-4	Shaft	3,075	124	56	34x 4½	34x 5	Continental
	Disc	Selective-4	Chain	3,325	126	56	910x110	920x120	Continental
	Cone	Selective-3	Shaft	2,700	108	56	34x 4	34x 4	Michelin
nsion	Cone	Selective-3	Chain	2,950	112	56	36x 4	36x 4	Michelin
	Disc	Selective-4	Chain	2,750	107	50	870x105	880x120	Michelin
nsion	Cone	Selective-4	Chain	2,600	109	56	34x 4½	34x 4½	Michelin
	Cone	Selective-4	Chain	2,925	108	52	880x120	880x120	Michelin
	Disc	Selective-4	Chain	2,875	107	52	870x105	880x120	Dunlop
	Cone	Progressive-3	Shaft	2,525	105	50	875x 90	875x120	Michelin
	Cone	Selective-3	Shaft	2,750	116	56	34x 4	34x 5	Michelin
	Disc	Selective-4	Shaft	3,150	118	54	875x105	895x135	Michelin
	Disc	Selective-4	Shaft	2,700	107	50	870x 90	880x120	Dunlop
	Disc	Selective-4	Chain	2,750	107	50	870x105	880x120	Michelin
	Cone	Selective-4	Chain	2,925	108	52	880x120	880x120	Michelin
	Cone	Progressive-3	Shaft	2,550	105	50	875x 90	875x120	Michelin
	Disc	Selective-4	Shaft	3,275	118	54	875x105	895x135	Michelin
	Disc	Selective-4	Chain	2,775	107	50	870x105	880x120	Michelin
	Cone	Selective-4	Chain	2,875	108	52	880x120	880x120	Michelin
	Disc	Selective-4	Shaft	3,300	118	54	875x105	895x135	Michelin

CIFICATIONS OF CARS IN LIGHT CAR RACE

Clutch.	Change gear.	Weight.	Wheel Base.	Tread.	The Sizes—Inches or mm. Front.	Rear.	Make of Tires.
Cone	Selective-3	....	110	56	32x 4	32x 4	Michelin
Disc	Selective-4	2,000	105	52	810x100	810x100	Continental
Disc	Selective-3	1,600	110	56	32x 3½	32x 3½	Michelin
Cone	Selective-3	1,125	98	56	32x 3½	32x 3½	
Disc	Selective-3	1,500	82	49	710x 90	710x 90	Michelin
Cone	Planetary-2	1,500	88	56	30x 3½	30x 3½	Michelin
Disc	Planetary-2	1,525	84	56	30x 3½	30x 3½	Ajax
Disc	Selective-3	1,600	110	56	32x 3½	32x 3½	Michelin
Cone	Planetary-2	1,475	88	56	30x 3½	30x 3½	Michelin
Disc	Planetary-2	1,175	84	56	30x 3½	30x 3½	Ajax
Disc	Selective-3	1,900	110	56	32x 3½	32x 3½	Michelin
Cone	Planetary-2	1,125	88	56	30x 3½	30x 3½	Michelin
Disc	Progressive-3	1,125	96	56	32x 4	32x 4	Ajax
Cone	Planetary-2	1,550	88	56	30x 3½	30x 3½	Michelin
Disc	Progressive-3	1,150	96	56	32x 4	32x 4	Ajax

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READY TO MEET ANY FIERY EMERGENCY

While the unofficial clocking of the light cars has not been complete by any means, the best time recorded for the 9.8 miles course during the early practice was Earl Jeffers's lap in 10:42 with his Buick, while on Monday, the last day of practice trials, this figure was clipped materially, when Burman had a brush with Cameron and the former made a lap in 10:19 against the latter's 10:23, the best times recorded since the course was thrown open.

Two bad accidents, one of which resulted fatally, marred the practice for the light car race. The first mishap occurred on Wednesday of last week, when Burman's Buick burst a tire and hit a tree, badly injuring his mechanician, Grinnon, who is still confined to the Savannah hospital, where he is said to be improving. He sustained several broken ribs and fractured left elbow, but will recover. Burman pulled through unhurt.

The other casualty which resulted in the death of Marius De Rosa, the S. P. O. car's mechanician, came on Saturday, when Jean Juhasz was trying out this car. Juhasz had made two circuits in 13:32 and 13.21, respectively, and was attempting more speed, when it is said he tried to avoid hitting a dog and swerved into a telegraph pole. De Rosa had his skull fractured by the fall, in addition to internal injuries, and died shortly after being taken to the hospital. The driver of the unlucky car was picked up with a broken leg, but his chances for recovery are good. An effort has been made to repair the car and Conners, who was the late Emil Stricker's mechanic, has been nominated to pilot it. Two days have been spent in straightening out the smashed frame and a rear wheel and axle have been borrowed from a touring car and fitted—an ingenious piece of substitution inasmuch as the new axle is of larger size.

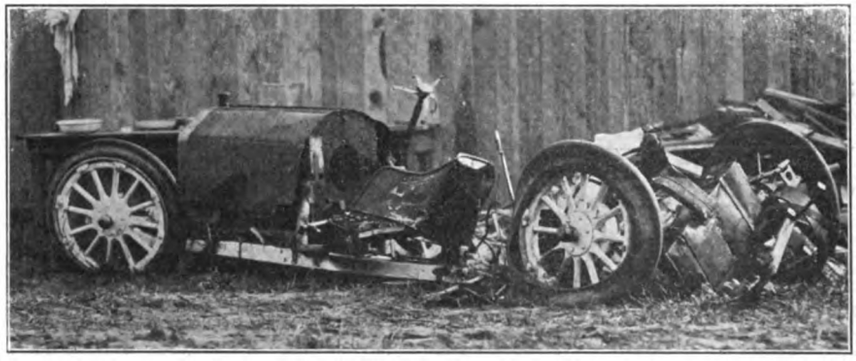
The announcement that George Robertson will not drive to-day has caused much disappointment. He was scheduled to handle the French Gregoire car which, through an error in shipping, did not arrive until yesterday, giving him no opportunity to try it out on the course or tune it up sufficiently.

Another change in drivers for the Grand Prize event has been announced; Ralph Mulford having been named to take Michener's place in the Lozier entry.

Yesterday (Tuesday) additional practice of 1½ hours was permitted on the long course, during which Lewis Strang in his Renault made the record time for the course, going one lap in 20:53. Hautvast, De Palma, Burman, Piacenza and Fournier were also out for less speedy trials.

Scores of negro convict laborers have been at work during the hours when practice was not in progres, repairing spots around the course, that were roughened during trials, and making every effort to put the road in the pink of condition.

The crowds have been swarming the course ever since daybreak, although the fray will not begin until 11 o'clock.



BURMAN'S BUICK AFTER ITS SMASHUP



REPAIRING THE COURSE AFTER PRACTICE

Another Climbfest for Giant's Despair.

That mountain which is considered the best climbing ground in the East, by many people in the motoring industry—"Giant's Despair"—is to be the scene of another annual contest on May 29th, 1909. The Wilkes-Barre (Pa.) Automobile Club has definitely decided upon this date, although the matter of a sanction has not been fully settled. At the time of the Vanderbilt Cup contest President George F. Lee, of the Wilkes-Barre Club, conferred with officials of both the American Automobile Association and the Automobile Club of America, but did not formally apply for a sanction from either body. It is known that the Automobile Club of America intends to run at least one big hill-climbing contest each year and the local motorists, it is said, would like to see this event take place on "Giant's Despair" course.

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BALTIMORE SEES GOOD CLIMBING

Smith Makes Best Time up Washington Hill and Wins Two Events—Live Contests in All Classes.

Baltimore's maiden effort at holding a hill climb occurred on Saturday, 21st inst., when the Automobile Club of Maryland conducted its competition on Mount Washington hill. Success crowned the attempt, which several thousand spectators witnessed, and while hill climbs are usually stupid affairs, Baltimore's contest proved a welcome exception to the rule.

The fastest time made for the day was 43½ seconds for the six-tenths mile course, made in the free-for-all event, when Wilfred Smith, driving W. W. Lanahan's 60 horsepower Stearns, succeeded in beating a field of six, including a Stanley and a White steamer. In view of the steep grade, his time was considered no less than remarkable. In addition to this performance, Smith captured the $4,000 event with the same mount in 0:45½, and a few minutes later, when Lanhan, the owner took the wheel in the high-powered amateur event, he drove the machine up the incline for another first place to the tune of 0:46.

In the opening event for cars listing between $1,251 and $2,000, J. L. Cassard, driving a Stoddard-Dayton, made the best time, but was later disqualified for the reason that his car carried a magneto, which not being a part of the $2,000 equipment, placed it above that class. Harry A. Tate, who drove a Chalmers-Detroit, was awarded first place, his time being 1:03½, with J. F. Heaver in a Kisselkar second.

Wallace C. Hood got away with the $2,001 to $3,000 event in 0:54½, when he dusted up the slope one-half second better than J. Sperry's Stevens-Duryea. O. I. Yellott drove a 15 horsepower Ford into first place in the $3,000 and under amateur division, in 1.05, beating his only opponent, H. H. Heyser, in a 48 horsepower Winton, by 5 seconds.

The electric timing system was so manipulated that after each trial the time was at once reported to the spectators along the line and not withheld as is so often the case at hill climbs, at which the mere spectators are kept in the dark as regards scores. The event was so satisfactory that similar future contests seem to be assured.

Non-Repair Trophy for Glidden Tour.

It is possible that the complexities of Glidden tours in general will be further augmented when another competition of the sort is undertaken by the introduction of a new subsidiary competition in which the contestants shall seek to eliminate all repair work. The subject has been broached by Col. George Studebaker, of South Bend, Ind., who has declared his willingness to offer a $5,000 trophy to be competed for in some such way, subject to the approval of the touring board of the American Automobile Association. No special limitations would be placed on cars competing for the "Studebaker Gold Cup," but any device hitherto used to guard against the making of repairs and to ensure an honest reliability score would be employed. These would include sealed bonnets, sealed tool boxes, and official observers. The idea is based upon the desirability of reducing the number of "perfect scores" usually obtained at such times, and of furnishing manufacturers a difficult sort of competition which they might enter to some purpose, yet without the necessary outlay involved in either of the special races of the year.

Belmont Park a Possible Motordrome.

Now that Governor Hughes and the horse racing bills have forced horse trainers, bookmakers, $20,000 jockeys, touts and other professionals to seek occupation as elevator boys, car conductors, shoe clerks and chauffeurs, it is only natural that the race track managers in New York state should cast about for new fields of effort. Morris Park, Empire City oval and the Brighton track that was, became motordromes, to be sure, and now it is suggested that Belmont Park may become an automobile course if no horse races take place there in the spring. As this is a 1½ miles track and is well banked at the turns, it would doubtless prove safer for motor car contests than was the Brighton course, and it is not unlikely that the future may see considerable agitation for its use.

Two Days of Racing for Bakersfield.

Two days of motor racing have been planned for Bakersfield, Cal., to take place on Thanksgiving Day and the following Sunday, November 29. The holiday event is to be a mixed one; both horses and automobiles performing on the same track the same afternoon. The automobile races will be confined to local cars, while on the following Sunday, there will be a 5 miles event for cars listed at $1,250 and under, two 10 miles races—a $3,000 class event and a free-for-all, winding up with an 8 miles handicap. Among the starters in the latter matinees will be several well known western drivers, including Frank Free, Bert Latham, Bert Dingley and Frank Murray.

Five Events for "Dolly Cole" Hill.

Five events have been scheduled for the Rhode Island Automobile Club's annual Thanksgiving Day hill climb at Providence. "Dolly Cole" Hill is the battleground of the affair and various contestants who have entered will endeavor to decide the permanent ownership of the C. Prescott Knight trophy, which has been won two successive years by L. F. N. Baldwin, with a Stanley steamer. Should the latter driver succeed in winning the cup for the third time to-day, it will become his property for all time.

STRANG ORGANIZES HIPPODROME

His Motoring Troupe Ready to Furnish Thrills to Order—Galveston Gets His First Bid for a Date.

Those who have followed with more or less interest, the performances of racing automobiles at various state fairs and track meets in the past will be interested to learn that Barney Oldfield's old "Green Dragon" and "Red Devil," as well as the "Grand Prix" Renault, are now "properties" of a hippodrome team headed by Lewis Strang, under the management of Bill Pickens, of United States Motor Racing Association fame. The newly formed company recently hippodromed at New Orleans, and he who was lauded as the hero of Savannah, Briarcliff and Lowell, evidently expects to make a circuit of dates after the Grand Prize race is run. Associated with him are Arthur Redfern, the ex-jockey, and one or two others, who will provide a line of high strung spectacular performances to the order of any enterprising organization willing to close dates with them on their own terms.

A letter which Strang recently wrote to E. H. Labadie, secretary of the Galveston Automobile Club, is self-explanatory. The driver who is about to follow the circus style of Barney Oldfield and Christie, writes:

"I am going on a trip to the Pacific Coast, starting from Savannah, I will have in addition to my Grand Prix Renault of 120 horsepower, and my Renault 24 racer, two cars formerly used by Oldfield, the Peerless Green Dragon and the Peerless Red Devil. Will, of course, have drivers for the cars and two great motorcycle racing men with racing motorcycles from the Indian factory.

"Here is the first opportunity Galveston has ever had to get such a lot of noted cars for a speed carnival on the beach. If the Board of Trade or other organization can be seriously interested, I would be pleased to figure with you or them for a couple of days. I would say as an estimate of the cost that about $750 would be required to defray the expenses. But you would get some real racing and great speed in return. The date would be early in November. Awaiting your early reply, yours very truly,

"LEWIS STRANG."

Paper Trail to Thanksgiving Feast.

Chasing paper trails for a good dinner is the prospect opened to members of the New Haven Automobile Club for Thanksgiving Day. The plan is to have a secret dinner rendezvous, to which the members must find their way by means of the scatterings of confetti along Connecticut's highways. Those who cannot read the trail correctly will miss the dinner.

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JACKSON OFFERINGS FOR 1909

Four Distinct Vehicles, Including Two Brand New Models—Improvements in Older Members of the Line.

Four distinct vehicles comprise the line which the Jackson Automobile Co., Jackson, Mich., is announcing for the forthcoming year. Two of these are entirely new and include a number of unusual features. Of the others, one is continued over from last year with practically no changes, while the other has undergone a number of alterations in matters of detail. The brand new offerings are known as Models "H" and "K." The former a 30 horsepower touring car having 110 inch wheel base and shod with 4-inch tires, and including magneto equipment, sells for $1,600, and the latter a light touring car, also boasts a price feature in its $950 listing, with a $100 reduction when sold with only the runabout form of body.

Model "H" has a 4½ by 4½ inch motor of the quadruple, vertical type, with the conventional arrangement of the valves in offset pockets, three-bearing crank shaft, and cylinders cast in pairs. In many ways it may be regarded as a smaller size of the larger Model "E." This is true in the case of the steering gear, clutch, magneto and other parts which are made to the same specifications for both models. The front axle is a single-piece drop forging. The rear axle, which is of the floating type, is provided with roller bearings next the wheels, and adjustable ball bearings on either side of the differential, which are so contrived that they may be regulated without dismounting the group from the chassis. The propeller shaft has two universal joints and a separate torsion rod. The wheels are 32 inches in diameter, shod with 4-inch tires.

The second of the new models also is a shaft driven car which, however, is propelled by a double-opposed motor, placed transversely in front. The cylinder dimensions are 5 by 4 inches, and the rated output is 18 horsepower. Except for the change gear, the mounting of this machine is similar to that of the last named—at least so far as regards the method of axle mounting, and the arrangement of the propeller shaft and torsion rod. The change speed arrangement, however, is of the planetary type.

The largest member of the line—Model "E"—retains the over-head cam shaft construction which was its distinguishing feature last year, as well as the design of the unit power plant, which is particularly pleasing. The unit is mounted by means of positive suspension members on either side of the fly wheel casing, and flexible members in front and back of it. A feature of the motor design is the use of very large bearing surfaces for the cam shafts and rocker members, while the inclined position of the valves gives an interior cylinder formation which conduces to successful thermal action. The transmission is by propeller shaft, through a multiple disc clutch having five units, of 12 inches diameter, selective change gear, and floating axle. The system is mounted on annular ball bearings, and is lubricated by automatic circulation from the engine base reservoir.

Brakes are arranged in such a way that all linkage is brought inside the frame, and the drums for the internal-external members, are separated by a liberal air space. The steering gear embodies a combination of the screw and nut and rack and pinion types—the nut being long enough to embrace the entire body of the screw, while its exterior on one side is toothed to engage a pinion on the steering rocker shaft, the arrangement providing great strength.

The remaining model—"C"—has a 5¼ by 5 inch, opposed motor, chain drive, and 32 by 3½ inch wheels. Like the other models of the line it has the thermo-syphon system of cooling which has been a Jackson feature since 1906, and is similar to the standard in a number of other respects. While resembling its predecessor of the current year in a number of details, it differs from it in the matter of wheel base, that dimension having been lengthened to 104 inches.

Auto-Meter Presents New Features.

Quite different in appearance from previous models, the new Auto-Meter, produced by the Warner Instrument Co., of Beloit, Wis., embodies a number of changes calculated to add to its desirability as a speed indicator and mileage recorder. In the new model the mechanism is enclosed in a circular case having a flat face, with openings for the figures. The trip register records to a total of 10,000 miles as against 1,000 miles, the usual maximum for trip dials, and the total mileage register has a 100,000 maximum, where 10,000 has prevailed in the past. The speed indications are similar to those in the older models produced by the company, but a new feature consists of a concealed electric bulb which lights all the readings when a button is pressed. Improvements also have been made in the flexible shaft and connections looking to the utmost durability. The instrument incorporates a clock when desired.

Care in Handling Tilting Bodies.

Users of cars provided with tilting bodies should beware of the danger of the supports jarring loose when the engine is running and permitting the body to fall. This contingency usually is carefully provided against by the manufacturer, but at the same time there is danger that a careless operator may neglect to fasten the supporting struts or braces properly when lifting the body to effect a wayside repair.

APPERSON MAKES TAXIMETER CABS

New Product Adapted to Private Town Use or Commercial Purposes—Specifications of the Construction.

That taximeter cabs have for some little time been a product of the Apperson Bros. Automobile Co. has just been disclosed. The factory at Kokomo, Ind., is turning out quite a number of machines of this type, mounted on the regular Model O chassis. The vehicles sell for $3,000 and are suitable for either private, town service or commercial purposes. The motor is of 30 horsepower, with four cylinders cast separately. A double system of ignition is used, including magneto and storage battery. The change gear is three speed selective, and shaft drive is employed, with a full floating type of rear axle. The wheels are "dished," running on a "plumb spoke," and carry 34 by 4-inch tires. The body is of the landaulet type. When desired the top may be pushed back, all the windows concealed within the body work, and the window frames folded down. On order a removable top is placed over the driver's seat and also a removable front glass.

Antidote for Poorly Designed Carburetter.

Although it is not generally appreciated it is doubtless a fact that a considerable amount of fuel is wasted from poorly designed carburetters when the car is running, owing to improper float regulation and consequent dripping from the base of the mixing chamber. To obviate this, it is well in some instances to "damp" the action of the float valve in some way, thus making it less responsive to the dancing action of the float. Sometimes this may be accomplished by limiting the travel of the valve, sometimes by stiffening the action of the light mechanism which connects the valve and float. At all events, it is not sufficient to see that the float chamber does not overflow when the car is standing still and the motor at rest. This must not occur when the engine is being raced, or when the car is running over rough ground. In either case, the waste is at once a source of a small amount of expense and a great amount of danger.

Diamond Rubber Improving a Street.

For a huge manufacturing concern to offer to repave practically an entire street free of expense to its home city is an incident as unusual as it is unexpected. Just such an offer has been made by the Diamond Rubber Co., to the city of Akron, Ohio, the privilege being asked in return for the right to utilize a small portion of the street in order to connect recent additions to the plant with the old buildings. The offer has been accepted and the work will involve a $20,000 outlay.

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BUSY PRODUCING CLOSED BODIES

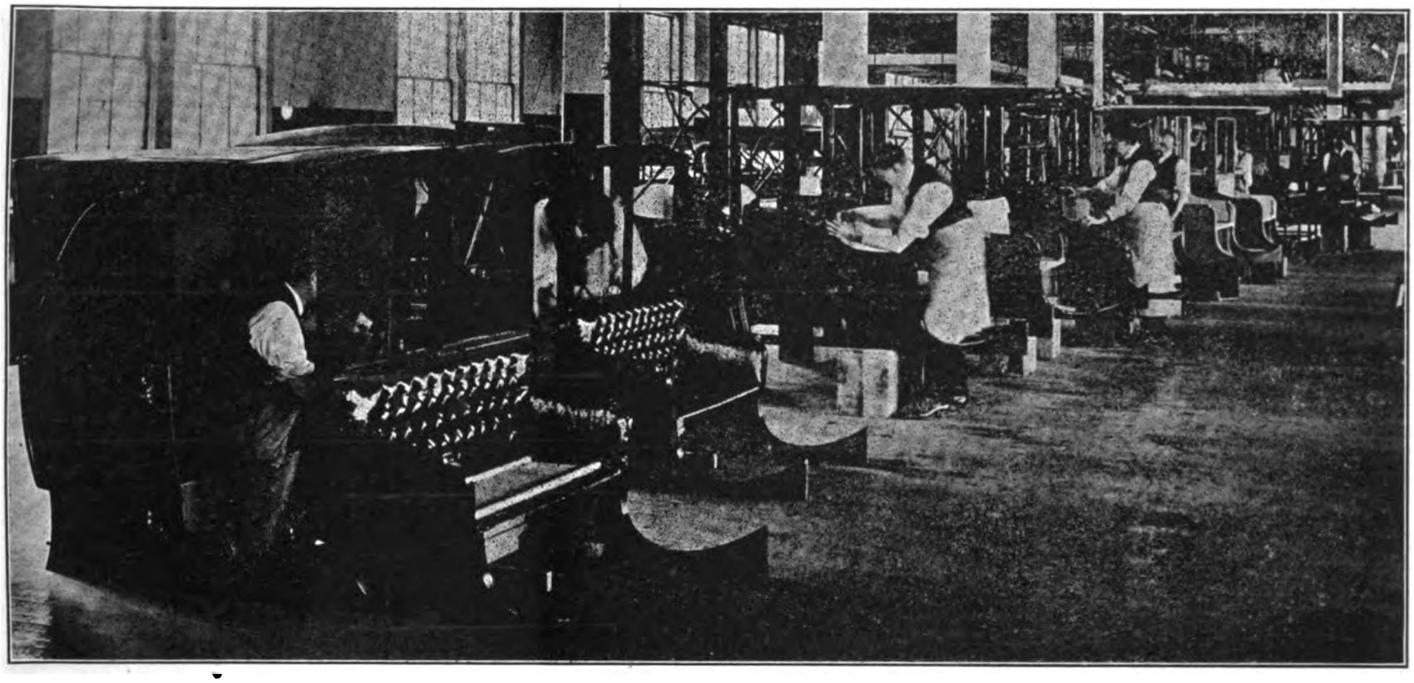
Activity at the Franklin Factory Indicates the Growing Demand—Differing Types Included in the Line.

Careful development of the body building department in many of the better equipped automobile factories has been the means of bringing about an unforeseen contingency in the business of production. With the perfection of body types by the car builders has come a growing demand for bodies in some little variety and especially where this demand is beginning to run to mountings of the closed type, it has been found necessary in more than one instance to increase the capacity of the department to keep pace with the orders. In the case of the H. H. Franklin Co., Syracuse, N. Y., the work of the body department is now reported to be a more important factor in the business than ever before. Just at present, work is being advanced rapidly on large orders for closed bodies in the rough and the trestles in the wood shop and the trimming floor are well filled with bodies in all stages of advancement toward the finished state. The rate of production is being increased as the new addition to the plant nears completion, and is gradually being absorbed by the growing departments.

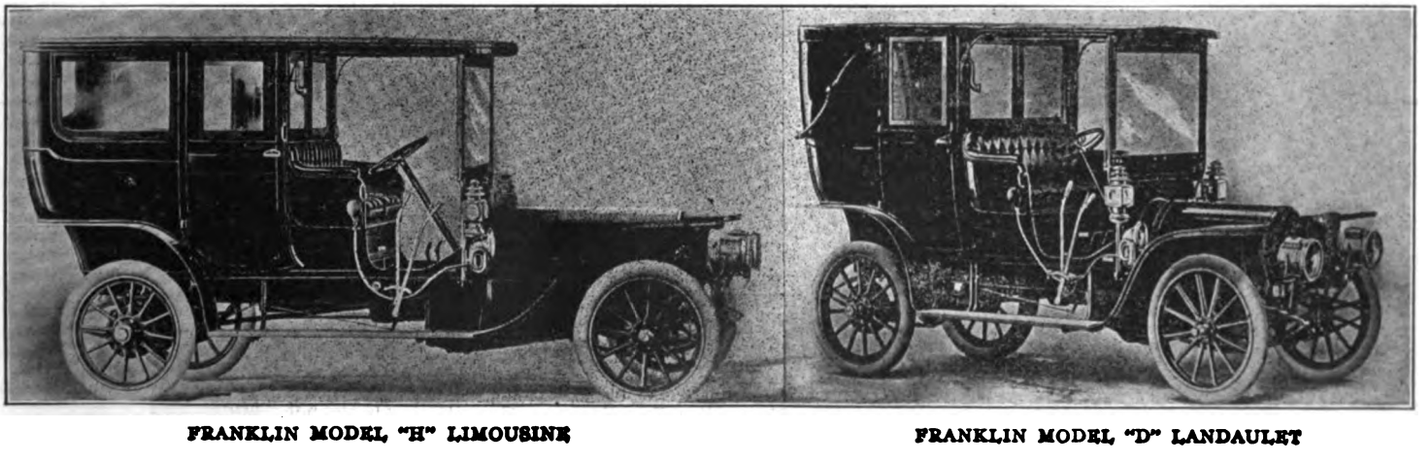
Some idea of the activity in this department, is furnished by the accompanying picture showing a corner of the shop where a lot of landaulet bodies are being finished. The presence of such a large number of stock orders in a single factory, moreover, casts some light on the growing demand for this class of vehicle throughout the industry, for it was only a year or two ago that bodies of this type were made up only on special order, and few makers ventured to risk holding them in stock.

The closed body line, which is a comparatively new feature of the Franklin output, is produced in several different types. They include an 18 horsepower, inside-driven brougham seating two passengers; the "K-2" town car, which is a six-passenger vehicle mounted on the motor cab chassis; an 18 horsepower, four-passenger landaulet—which is claimed to be the smallest vehicle of its class at present on the market, and which is listed at a figure calculated to attract attention—and a second landaulet which is mounted on the 28 horsepower chassis. Both of the landaulets are similar in design and construction, differing only in the matter of size. The limousine is the largest of the group, and is driven by the 42 horsepower, 6-cylinder motor. It seats seven passengers and is quite the most pretentious and largest in the line.

The body construction is all of original design, incorporating a combination of wood and aluminum materials. The chassis employed are practically the same as are used for the touring cars and roadsters of corresponding powers, but are especially strengthened for the purpose. That is to say, in addition to being lengthened out, the frames are stiffened to meet the extra requirements of the added weight.



WHERE THE FRANKLIN CLOSED BODIES ARE BUILT



FRANKLIN MODEL "H" LIMOUSINE

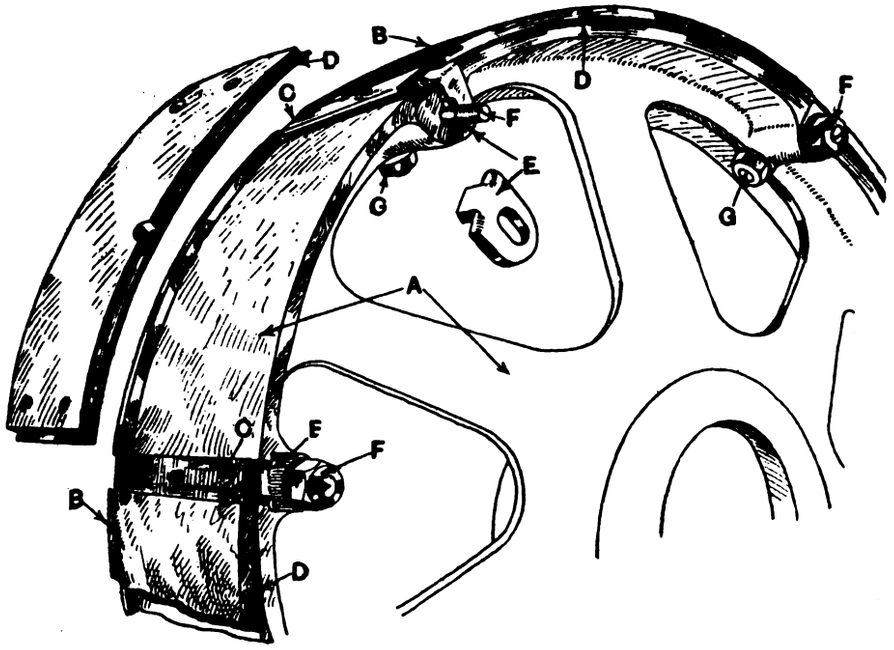
FRANKLIN MODEL "D" LANDAULET

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NEW FEATURES IN CONE CLUTCH

Provision for Removal of Leather Lining in Sections—Novel Construction of Springs Under Bearing Surface.

It might be supposed that the ordinary type of plain cone clutch had been reduced to practically its lowest terms long since. That such is not the case, however, is shown by the development of a new device in connection with the clutch applied to the latest model of the British Austin car, in which provision is made for the complete removal of the leather lining in sections and by means of an attachment suggestive



in a way, of the mounting of the familiar detachable rim in the tire field. An additional feature of unusual merit and originality lies in the use of relieving springs which are continuous throughout the bearing surface of the leather, and secure the initial contact at the center of the leather instead of at the smaller end of the cone as in ordinary practice.

In order to effect these improvements the ordinary conical spider—otherwise cast in the same manner as the usual clutch cone—is provided with a set of six T-shaped lugs running across the face of the cone parallel to its axis and forming with the cone surface a series of slots into which the ends of six strips of flat spring steel are fitted. These strips form at once the relieving springs and the backing for the leather facing of the clutch, the facing being in sections corresponding to the shape of the strips, and which are riveted in place in the usual way.

The accompanying illustration indicates the arrangement in detail. The clutch spider proper, A, is of perfectly regular formation except that at intervals it is provided with bosses running across its lower face and arranged to mount the lugs, C, which engage the ends of the spring plates, D, upon which the leather facing, B, is secured. Studs, F, projecting from the ends of the bosses carry the clips, E, which hold the plates in position once they have been slid into place. Additional security is furnished by the secondary studs, G, which draw the lugs, C, downward.

Instead of being perfectly flat, the strips are crowned through the center, thus forming a very slightly elevated ridge through the center of the engaging surface of the leather, but one which yields to pressure due to the flattening of the crown of the strips when the female cone of the fly wheel is engaged. The arrangement of the slots in the male cone into which the strips are slid permits the latter to be withdrawn at any time without removing the clutch from its shaft or in any way disturbing its mounting. When the cone is disengaged, a series of six bolts on its rear face are loosened, thus releasing as many lugs, which lock the sections of the facing in place. As soon as this is done, one or more of the sections of the working face may be withdrawn, when it may be renewed, cleaned, treated with oil by soaking it in a pan, or otherwise repaired in a few minutes time. The clutch is but little more complicated or heavier than the ordinary type, is simple to handle, and possesses the further advantage to the tourist that a complete extra working face may be carried in the tool kit, packed in small compass, for use in case of a burn out of the leather or any other accident of a similar nature, this in itself compensating for whatever there is of extra weight in the part itself.

RATIOS OF WEIGHT AND CAPACITY

Wherein Automobile Design Excels that of Railway Vehicles—Data Based on Results of Actual Comparison.

Vehicle weight in proportion to horsepower has received considerable attention in the automobile industry at one time or another, although the question of weight in proportion to passenger or load-carrying capacity has not been subjected to close scrutiny. In other lines of transportation, however, and particularly in the field of railroading it is rated a matter of considerable importance, though exact figures are not always readily obtainable. Considering the fact that in only rare instances the railway car is compelled to carry its own power plant complete and that in any event it is driven or drawn over a right of way which is specially prepared for the purpose, it might be supposed that its ratio of weight to useful capacity would be greater than that of the motor vehicle designed for highway use. That such is not the case, but rather that the automobile, even when of the most complete and luxurious type is considerably lighter, is much to the credit of the designer.

Until recently no data on this subject that might be regarded as authoritative, has been compiled. A street railway and electrical journal, however, a short time ago, made an investigation of various models of electrically driven passenger cars. Forty-six different cars were used as the basis for the compilation and most of them were found to weigh from 1,200 to 1,333 pounds a seat, the number of seats ranging from 40 to 71. The range in weights may be appreciated when the fact is shown that of two cars, each seating 60, one weighed 854 pounds per passenger and the other 1,213. Little argument would be needed to show passengers which of the two would be safer for traveling, or a buying company which would prove more durable. The Pullman company goes still farther on the question of weights, its sleeping cars with a capacity for 30 people, weighing about 125,000 pounds, or 4,166 pounds per passenger.

In this connection it is interesting to compare with the figures the weight of the full-fledged touring car. As an example, a six-cylinder Pierce Arrow, developing 48 horsepower, with the water, oil and gasolene tanks filled, and equipped with a cape top and glass front, weighs only 572 pounds per passenger. One of six cylinders, developing 60 horsepower and with the tanks all filled and similarly equipped, weighs 639 pounds per passenger. The weight per passenger of the touring car as compared with the interurban trolley is thus just one half, while in the same way it has but a little less than one-seventh the weight of the Pullman sleeper.

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BATES'S BAIT FOR ORDERS

Cut Prices for Customers Ordering by Mail —"Just as Good as Anybody Else's" the Modest Claim.

Solicitation for mail order retail tire business has been tried for some time by cut price houses, but a rubber company manufacturing tires and planning to sell its output by mail order methods at cut price figures is a little bit newer. Yet the blessings of such an institution were not to be withheld from the private owner forever, and at last he is to be delivered from the greed of the established tire concerns through the introduction of that modern method of merchandising expressed in crystalline form as "from Kalamazoo direct to you."

Kalamazoo does not happen to be the place in this instance, but the principle is the same, or is intended to be. Rutherford, N. J., is the happy spot, and the Rutherford Rubber Co. is the firm. That the company knows what it is about in soliciting business by mail almost goes without saying after it is disclosed that its president is none other than Charles Austin Bates, who as an advertising expert at one time deigned to criticize and improve the "copy" for advertising letters and pieces of business literature, at from $5 to $50 per piece.

Until recently Bates has been proving the efficiency of his circular letters by marketing mining stock through their use. In turning to tires he brings to bear the master touch of experience in the letter writing art, giving at once a vigorous presentation and an impression of great self-restraint in endeavoring to state the facts fairly and with simple modesty.

According to the letters, the Rutherford proposition contemplates saving the owner of a car from $10 to $40 per tire, or from 25 to 60 per cent. on tire expense. Even the most ardent seeker after bargains would make an inquiry into the quality of tires offered, however, so that this point is carefully covered.

It is all very simple. As Bates himself explains, "There is no mystery about an automobile tire. Anybody who wants to and knows how, can build a good one—just as good as anybody else's." Continuing he names several prominent makes which he pronounces "good tires simply because their makers use good rubber and fabric and put them together right."

Such being the case it is made clear where the company's own tires stand. No bragging or wild statements when it comes to that point. Not a bit of it! Bates actually confesses that "they are not better than the best—only as good." Who could help but feel confidence in products backed by people making their claims in such a gentle, open and above-board way? Most people in trying to sell goods enumerate certain advantages or points of superiority, but Bates is quite content to pick out the world's best in tires and to let it be understood simply that his tires are of the same quality.

It will no doubt be a great surprise to the trade to learn that "there are no secrets" about the manufacture of automobile tires, according to Bates. The blow will fall hard on some of the bigger makers who have been paying enormous salaries to men who make pretences of special rubber knowledge. After all the money that has been spent in the past in developing successful "compounds" and vulcanization treatments, it is disheartening for the older tire manufacturers to find that Bates has wrested their secrets from them and is willing to share them with the world at large.

Following the policy of making it as easy for the customer as possible, the first letter to the owner whom the company seeks to interest, contains a return postal card which only requires the filling out of the name and address to bring all the details and prices. As a quiet tip, however, it is unnecessary to fill out the card, the proposition being pretty sure to come along anyway. Sure enough, the second letter tells all about it, whether the first one has been ignored or not.

Enclosed with the letter is the price list, together with a duplicate order blank, just such as one would fill out in buying mining shares, and having pretty red serial numbers in the corner. Under the name of the tires is printed "Wear! Wear!!" but it is not made clear whether slowly or quickly. As for the price list the "blue tubes" are exactly the same in price as the retail list prices on Diamonds and other lines, while the prices on the casings in no instance are as much as either $10 or 25 per cent. less than the retail list on standard tires, which in view of the fact that the letters promised a saving of from $10 to $40 on each, or from 25 to 60 per cent., is something of a disappointment, no doubt, to the man who has fallen under the spell of the persuasive Bates advertising "copy."

Instructive Reading for Agents.

Agents ambitious to become well posted on modern methods of selling motor cars as well as of advertising and building them —and Rambler agents in particular—are likely to derive no small interest and profit from the pages of the Dealer's Number of the Rambler Magazine which has just been issued by Thomas B. Jeffery & Co., Kenosha, Wis. In addition to a complete description of the 1909 line of Rambler cars, considerable space is given over to descriptions of the methods of manufacture and sale of the cars, suggestively illustrated and conveniently arranged.

RATING OF IGNITION CAPACITY

British Society of Motor Manufacturers and Traders Adopts Specific Rules—Official Label to be Used.

One of the minor abuses to which the accessory branch of the British automobile trade has been subjected is the rating of ignition accumulators according to a more or less imaginary capacity. "Ignition capacity," as it is called, of course is of practically no value to the user, because of the varying consumption of ignition devices under different conditions of adjustment and load, as well as the varying resistances which they oppose to the passage of the current. To simplify matters and ensure for the user a rating which shall be at once comprehensive and sufficiently accurate to enable him to use the batteries intelligently, the tire and accessory section of the Society of Motor Manufacturers and Traders has made an investigation as a result of which certain recommendations are made and an official "S. M. M. T." rating established which all manufacturers may use, provided they agree to certain conditions.

The rating rules are as follows:

"(1.) Accumulators shall have printed on their labels their actual capacity when discharged at a definite rate continuously, this rate being one-twentieth of the capacity claimed. An interval of rest to be allowed, such interval not to take place until half the period of discharge has expired.

"(2) The accumulators can have printed on their labels the approximate capacity with intermittent current, which shall be arrived at by doubling the actual capacity obtained by following Rule 1.

"(3) In cases of dispute on the subject of the actual capacity of an accumulator, such dispute may be referred to the S. M. M. T., who may order tests carried out on the basis of Rule 1 by some competent authority, such as the Electrical Standardizing and Training Institution, Faraday House. London."

The officially sanctioned labels will read:

Capacity.	S.M.M.T. Rating.
Actual capacity at constant discharge	Amp. hours
Approximate capacity with intermittent current	Amp. hours

White Construction for Ambulances.

How the principles of White construction have been embodied in the various ambulances, patrol wagons and buses which have been produced by the White Co., Cleveland, Ohio, is told in a booklet recently issued. Illustrations show ambulances used by the War Department, Navy Department and by the cities of New York, Philadelphia, Chicago and Trenton, as well as those of private hospitals.

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CLUB AND ASSOCIATION DOINGS

How the Organizations are Promoting Interest in Motoring—Active Work for Making the Highways Better.

Treason to the horse might almost be suspected in the case of the organization of the Fulton County Automobile Club, at Atlanta, Ga. The club had its orginzation meeting in the rooms of the Piedmont Driving Club, supposedly sacred to equine interests. But many of the members of the latter club are broad enough in their view to appreciate both motor cars and horses, and did not hesitate to go into the new movement. The officers chosen are as follows: Edward H. Inman, president; Charles I. Ryan, vice-president; W. G. Humphrey, secretary and treasurer. It is the intention of the club to build a country club house immediately. Among the objects of the new club the creation and promotion of interest in the good roads movement naturally holds prominence, and in this it will co-operate with the horse drivers' organization.

At Newton, Kan., the motorists have organized the Newton Automobile Club, and among its first activities is the preparation of a good roads campaign. A "permanent roads committee" has been appointed and it will be the duty of the committee members to make frequent trips over the neighboring highways and to take note of road defects and the possibilities of improvement. Following these investigations, conferences will be held with the road overseers in the districts where the poor conditions exist, with a view to arranging for the necessary repairs and attention. The club declares itself willing to pledge financial aid for the work.

To establish a fund for the apprehension and conviction of automobile thieves and to take action against persons who throw nails and glass in the streets, the motorists of Fort Wayne, Ind., have formed the Fort Wayne Automobile Owners Protective Association. A fund of $500 was subscribed at the first meeting, for the purposes indicated. In addition to its aggressive legal plans, however, the club expects to effect more social objects as well. The officers selected include E. H. Merritt, president; George DeWald, vice-president; A. L. Randall, secretary, and Van B. Perrine, treasurer.

By the appointment of "inconsiderate driving committees" the local clubs belonging to the Royal Automobile Club of England are not intending to further inconsiderate driving as might be supposed, but are preparing to lessen it as far as possible. Strong action is to be taken against offenders, including expulsion if they be club members, and the police and public are invited to co-operate with the committees in reporting and prosecuting the guilty drivers. The committee for each local club consists of five members, and they are required to investigate all cases within their jurisdiction. The club's definition of "inconsiderate driving" includes every case in which another user of the road is put to unnecessary inconvenience, whether there has been an actual infraction of the law or not.

Prizes for those of the Chicago Motor Club who bring in the most new members indicate the earnestness of the club's intention to raise its membership to at least 300. The "300" campaign is now under full swing, and awards of $100, $50 and $25, will be made to those who secure the first, second and third largest number of applicants, respectively. To create an interest in the club's election, a novelty has been introduced, consisting of a nominating committee whose duty it will be to select at least two complete tickets for all the elective offices, before the club election on December 12.

Instead of waiting to get driblets from the legislative mill, a number of wealthy Trenton automobilists, comprising the membership of the Mercer County Automobile Club, have just completed at their personal expense, the oiling of a section of road between Trenton and Mercerville, N. J., on the route from New York to Philadelphia. The treatment given the road surface is said to have proved an entire success in laying the dust, and the people along the section express themselves as delighted with the result.

Burdened as it is with the name La Moviganta Klubo, the fashionable women's motoring club of Philadelphia is thriving and happy. Among its latest achievements is the perfecting of an arrangement with the Royal Automobile Club of England by which the Movigantans become associate members of that organization. The compact gives the Philadelphia women all the privileges of membership in the Royal club in European touring.

Over fifty automobile drivers and mechanics of Omaha, Neb., met recently and formed the Nebraska Association of Automobile Drivers. The association plans to increase the efficiency of its members by providing a technical library and by having technical addresses, from time to time. In addition to its social program, the association will also take a hand in local legislative regulation. The officers elected are: A. Schultz(president; Charles Crawford, vice-president; Gus Rudolph, recording secretary; Robert Melvin, financial secretary and treasurer.

Danger signs at short distances from railroad crossings and bad hills, culverts and turns, are to be put up by the Columbus Automobile Club in Columbus, O., and on the outlying roads. The latter will also be posted with signs giving road directions and distances. All the signs will be in blue and white enamel. Contributions for the work, which is quite expensive, are being sought from all automobile owners of the vicinity.

Distribution of scenic tour maps has been undertaken by the Wilkes-Barre Automobile Club, the maps showing ideal tours to New York, Boston, Philadelphia and other large cities, by way of Wilkes-Barre, Pa. The club is also completing arrangements for a magnificent new club house, where visiting tourists will be welcomed.

Under the name of the Lehigh Valley Motor Club, 35 automobilists of Bethlehem, Pa., have organized for both social and practical purposes. The first election of officers resulted as follows: Robert L. Stuart, president; H. R. Seaman, vice-president; William D. Shantz, secretary; Fred H. Sterner, treasurer.

Holding the interest of the members through the winter months is the object of a series of dinners and lectures that have been arranged for by the Automobile Club of Portland, Ore. The lectures will be given in a convention hall which has been engaged for the purpose.

Herbert M. Sawyer has been elected secretary of the Massachusetts State Automobile Association, to take the place of J. Fortescue, resigned. The new secretary resides in Worcester, Mass., and has been assistant secretary of the Worcester Automobile Club.

Private owners and agents have combined at Madison, Wis., and have formed the Madison Automobile League. The following officers have been chosen: W. E. Petrie, president; Dr. Frank Smith, vice-president; A. E. Austin, secretary; and M. H. Conklin, treasurer.

The Port Caddo Motor Club has been formed and will have its headquarters at Caddo Lake, Texas, where a commodious clubhouse is being built. Judge Lyttleton has been chosed president, with Sid Coleman, secretary, and Fred Heidelberg, treasurer.

Santa Barbara Vetoes Road Bonds.

After a very animated campaign, the voters of Santa Barbara county, Cal., have rejected by a close vote the proposition to issue $1,250,000 worth of bonds to aid in the construction of a through road from San Francisco to Los Angeles. The chief objection made was that it would put too great a burden on the county alone, particularly in view of the fact that Governor Gillette's plan to have the State issue $18,000,000 in bonds for the building of improved roads is likely to go through in the near future, in which case the money would be forthcoming from that source.

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HOW FINES ARE IMPOSED BY MAIL

Magistrate Naar's Methods Aired in Prosecutor's Bill of Particulars—The Case Against Him Advances.

A sequel to the announcement of last week that action had been brought against Justice of the Peace Manfred Naar, of Trenton, N. J., for alleged illegal methods of administration in conducting a mail order system of fining motorists accused of exceeding the speed limit, came on Friday last when Joseph A. Sexton, of Perth Amboy, filed in the New Jersey Supreme Court at Trenton a bill of particulars in the damage suit against Naar, for alleged false arrest and fine in connection with an alleged violation of the New Jersey speed law. Sexton denies that he violated the law as charged by the Justice of the Peace and claims that the action was an effort to extort money from him. He sues for $200 damages for the arrest and fine.

On August 18 last, says the complainant, Sexton received from Naar a letter saying that there had been lodged against him a complaint by Officer Wright, of Mercer county, of excessive automobile driving on August 16. Sexton was ordered to call at Naar's office and answer the complaint on August 22. The letter went on to say that in case of failure to appear judgment would be entered and filed with the Department of Motor Vehicles.

The bill goes on to show that the complainant replied by letter, denying any speed law violation and expressing unwillingness to come to Trenton on the date named because of the inconvenience. On August 20 Sexton received a second letter from Naar, written on a letter head of the New Jersey Detective Bureau, in which it was said that if he did not care to appear for a hearing he could send a check for $8.75 fine and costs and that would settle the matter. A check on the First National Bank of South Amboy endorsed by Naar is one of the exhibits in the case.

Pennsylvania Judge on Illegal Arrests.

By the terms of a recent decision in Pennsylvania it has been established that before arrests of motorists can be made for violating the speed law, it must be proved conclusively that the offending motorist has covered a full mile in less than the time limit prescribed by lay. The ruling was handed down by Judge Sadler at Carlisle, on November 16th, in a habeas corpus proceeding brought on behalf of a chauffeur for John Hay, a local attorney. The constable making the arrest in the case had testified that he had measured a quarter mile course, over which the accused had driven at excessive speed. Judge Sadler also decided that justices have no right to issue warrants outside the county in which the offense is committed; that the action is civil or penal and not criminal and that the commonwealth cannot be a party to the proceedings.

Joy Riding Chauffeur Loses License.

"Joy riding" without permission from the owner of the car has resulted in the revocation of the driver's license of John Krumbine, of Elizabeth, N. J., who on the night of October 20 took a car from the garage of the Elizabeth Automobile Co. and started out with a merry party. The machine did not go very far before an accident took place which ditched it and did considerable damage. State Commissioner of Motor Vehicles J. B. R. Smith, in speaking of his action in revoking Krumbine's license, said "All such cases will be summarily dealt with by this department. These night rides are nearly always in violation of the speed limits, generally result in the intoxication of the drivers and occupants of the machines, and endanger both the lives of those in the cars and of people riding or walking on the roads."

Bridgeport Will Punish Reckless Drivers.

Bridgeport, Conn., has been aroused over a series of recent accidents due, it is charged by some, to the lax administration of the present automobile law, and by others to inherent weakness of the law itself. Early last week, Mayor Martin issued an order to Chief of Police Cowles, to instruct his forces to arrest every motorist found driving in a reckless way through the streets. The order is a repetition of one issued some time ago, but hitherto enforced principally by men detailed for the purpose. In the same connection, an open letter to Chief Cowles has been officially endorsed by the Automobile Club of New Haven counseling a better enforcement of the law and offering to place a fast car at the disposal of the department for overtaking offending motorists who seek escape in flight.

Jersey Licenses Must Soon be Renewed.

Former holders of New Jersey licenses are being reminded by J. B. R. Smith, commissioner of Motor Vehicles, that it will be necessary to take out new licenses on December 31, and that the authorities will be very severe in apprehending and punishing those who try to operate their machines within the state on old licenses. Owners are advised to forward their application for new licenses at once, and the commissioner promises that delivery on the new tags and cards will be started by December 1 or earlier. Commissioner Smith's original anouncement called for the filing of applications at the main office of the Department of Motor Vehicles at Trenton. A later special order, however, announced that applications filed with A. B. Le Massena, Newark agent of the department would receive proper attention.

FOR UNIFORM NEW ENGLAND LAWS

Interstate Conference of Governors and Other Officials in Boston—Automobile Legislation One of the Topics.

Unique in the Annals of legislation is the first New England Conference on Uniform Laws, which opened in Boston on Tuesday this week. Its roster includes the governors, lieutenant-governers and governors-elect of New England, senators, members of congress and other officials of the six states represented. As called by Governor Curtis Guild, Jr., of Massachusetts, its purpose is to "consider the common needs of all, especially in the way of speedy enactment of uniform laws." Among the leading subjects under consideration are: The preservation and cultivation of forests; the safe-guarding and protection of supplies of sea foods; the construction and use of highways, with especial reference to the regulation of automobiles. Tuesday afternoon's session, when the highways question was discussed, was addressed by Harold Parker C. E., delegate to Paris International Congress of Roadbuilding, and chairman Massachusetts Highway Commission; James H. MacDonald, president American Roadmakers Association, Commissioner of Highways of Connecticut; ex-Governor Nahum J. Batchelder of New Hampshire, Master of the National Grange, also read papers.

Movement to Compel Lighting of Parks.

An early victory in the campaign which the New Jersey Automobile and Motor Club is waging for the betterment of the automobile law was the securing of the passage of a resolution by the Newark Board of Trade on Saturday last, requesting the Park Commission to compel all vehicles entering the parks at night to carry a proper light. A further recommendation to the Commission was that the present Elwood avenue entrance to Branch Brook Park "be straighened and widened, that proper lights to insure safety be placed on this and other drives within the park, and that shrubbery which obstructs a clear view of the highway at this entrance be removed." This entrance has long been regarded dangerous.

Park Restrictions Lessened in Boston.

Non-skid treads for tires, including those having metal studs or wire points, have been restored to good standing in Boston's parks and boulevards through the action of the Metropolitan Park Commission in rescinding its rule, passed last March, prohibiting their use. Ever since the rule went into effect the motorists have made a strong fight for its annulment. The prohibition still prevails against the use of ropes or chains on the tires, but efforts will be made to have this also removed.

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BANISHES HOODOO WITH FIRE

Santa Rosa Man Celebrates the Election with an "Auto-de-Fe"—Consigns His Bewitched Car to the Flames.

Small boys in an exuberance of Election Day spirits have been known to burn up wood sheds, cellar stairs, roll-top desks, pianos and other articles of furniture, but when a full-grown man celebrates the victory of a presidential candidate by cremating a healthy, robust motor car, he bids fair to become an eligible applicant for the funny house or St. Vitus's Dancing Academy. Jake Luppold, Esq., of Santa Rosa, Cal., who had been "seeing things at night" was the gentleman to distinguish himself a few days ago by burning his car at the stake, even as the Maid of Orleans was burned some years back. Luppold did not do this because of any election bet he had made, but because he was of highly superstitious temperament, and really believed that the car was haunted and a "hoodoo." Seeing the machine blaze into a pile of ashes and twisted metal, the owner chuckled in much satisfaction and was thoroughly convinced that he had killed the hoodoo forever.

So happy was he over it that he celebrated the occasion by treating a number of his friends to a glorious banquet. In addition to killing the little black man of the motor, Luppold also vanquished the hop hoodoo. He said so himself. The hop hoodoo cashed in only incidentally and it was a clever trick, too, for the pyre was made with a bale of 1907 crop hops. The hop crop of that year, it must be explained, was a Jonah harvest.

Some weeks ago, when Luppold announced that he was going to sacrifice his car, he was flooded with letters from persons begging him to refrain from performing the wanton deed. Luppold was unmoved by all of these sentimental pleas and applied the torch with his own hands. The car was not insured.

"Tag-Day" Hold-up Strikes Motorists.

"Stung again!" that useful phrase, has a lot of hard work before it as the result of the invention of "Tag Day." As yet there have been only a few try-outs of "Tag Day," but these have been so successful from the perpetrators' point of view that the institution is likely to visit all parts of the country before it dies. As may be suspected it is a species of "hold-up" for charity and makes special provision for forced contributions from automobilists. In addition to small tags for pedestrians, which the latter have to pay for when the earnest charity workers pin the devices on their victims' lapels, there are prepared a goodly quantity of pennants in gay colors for attaching to motor cars. Eagle eyed watchers on the streets on "Tag Day" quickly see any machine that has not got its outfit of pennants, whereupon the driver is cheerfully stopped and made to "cough up" for a set. Unlike the church fair, however, only one contribution is called for, the pennants granting immunity for the rest of the day. In those places where the scheme has been tried, the local motorists, knowing the purposes for which the money was to be used, would contribute without demur, but transient tourists in some instances were less agreeable.

Eau Claire Gets a Motor Car Cheap.

Eau Claire, which is also called Hyatt Park and which is not far from Columbia, S. C., has gained an automobile even if it has lost a fine. A colored chauffeur, who a few days ago ran his machine at high speed through the center of town several times in spite of the newly posted ordinance calling for a 15 miles per hour maximum, was finally followed up and approached by the local constable. The negro was standing on the sidewalk when the officer came up, and scenting trouble he took to his heels. This did not disturb the constable, however, who calmly took possession of the car. The driver has not come back and the town is still holding the machine and wondering if the owner will ever appear to claim it.

Too Swift for the "Ambulance Chasers."

Chasing ambulances, for the purpose of getting the prosecution of damage claims that may be brought by the accident victims, has become a work requiring considerable stamina and sprinting ability since the introduction of the motor ambulance. The "runners" for damage claim lawyers have in the past been well able to keep up with the horse drawn vehicles, and even to board them and thrust the lawyer's cards in the victims' faces, but the motor ambulance is too fast, both in going to the scene of catastrophe and in returning to the hospitals. It is not easy therefore for the "runners" to find out either where the accident occurred or where the injured persons were taken, until it is too late for their purpose.

La Salle's One Horsepower "Automobile."

After considerable boasting about the automobile which was being built by the Young Men's Athletic Club, of La Salle, Ill., the machine itself has made its appearance. It is of one horsepower, the horse being placed in the center of an old wagon frame, but concealed by burlap curtains. A wringer in front constitutes the starting crank, and the canopy top is made of old umbrellas. All the other fittings and accessories are of the same order, and the club members propose to enter the machine in all automobile parades and races in the vicinity to which it is eligible.

HOODOO TAKES FIERY REVENGE

Danville Doctor Gets Full Benefit of the "13" Incubus—Rebukes His Machine and It Goes up in Fire.

Sailor superstition as to "hoodoos" attaching to certain ships has a parallel in the growing conviction in some quarters that not a few cars are unlucky. Among the recent converts to this belief is Dr. H. A. Greer, of Danvilee, Ill., who has reason to feel that a real, live "hoodoo" was on his machine. The car was ordered on June 13 and arrived on a Friday. Its registration number was 13,858, of which the last two digits make 13, as do the two next the last. The first accident occurred on the first Friday in July, when the machine collided with a street car, suffering considerable damage. By August it was fully repaired, and had two smashups in that month one on the first Friday and the other on the 13th. On September 13 it had another, followed the next Friday by more trouble, and coming to grief again on the succeeding Friday by a breakage of the steering gear, which almost resulted in catastrophe.

Afraid to trust himself in it on either a Friday or the 13th of the month, Dr. Greer left the car in the garage on Friday, October 2, although the evening before it had been reported as ready for service again. He used it on the following days without incident, however, until Thursday. On that day he addressed a few serious words to the machine, telling it that on the next day, Friday, it would have to stay locked up in the garage on account of its bad luck. In revenge the car carried him a good distance from home and then took fire, burning up so rapidly that the hose company which was called to extinguish it, found only a smouldering and worthless pile of junk. The unfortunate owner is going to get a new machine, and likewise a new registration number.

Melodramatic Rescue of Scared Motorists.

Daring rescues, in which the hero dashes out and stops a runaway horse driven by the heroine, have taken a more modern phase in which a blazing and uncontrolled motor car supplants the equine portion of the setting. Chicago had a demonstration of the latest thing last week when Frank Mack, a chauffeur, rushed out into the street and hopped aboard a runaway automobile that was spurting flames and in which four frantic women were screaming for help. The woman driving the machine had lost control of it through her excitement, but Mack quickly took her place and brought the car to a stop. The women jumped out and extinguishers soon conquered the fire.

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The Week's Patents.

896,362. Resilient Wheel. Samuel S. Childs, Bernardsville, N. J. Filed Jan. 28, 1908. Serial No. 413,046.

1. A resilient wheel comprising a body portion having a felly, a rim surrounding the felly at a distance therefrom and forming a space between them, pairs of members placed at intervals in the space, means for securing one member to the felly, means for securing the other member to the rim, a pair of resilient blocks placed between each pair of members and in line circumferentially of the wheel, the members having flanges to surround the blocks to prevent their displacement, and a boss on one of the members to extend part way between the blocks.

896,375. Starter for Explosion Engines in Self Propelled Vehicles. Delamere B. Gardner, Chicago, Ill. Filed Oct. 5, 1907. Serial No. 396,064.

1. The combination with a driving shaft having operative connection with an internal combustion engine and a driven shaft adapted to be connected to and disconnected from said driving shaft, of means for absorbing the momentum of said driven shaft and the parts connected therewith and storing the energy thereof while the driven shaft is disconnected from the engine, and means for transmitting such stored energy to said driving shaft to start the engine.

896,388. Carburetter. Kirk G. Johnston, New York, N. Y. Filed Aug. 12, 1907. Serial No. 388,151.

1. In a carburetter, an air lifted needle valve, a longitudinally movable guide for said needle valve stem, an adjustable stop for said needle valve stem in the said guide, and a lever attached to said movable guide and adapted to move same longitudinally varying amounts as and for the purpose set forth.

896,389. Friction Clutch. Kirk G. Johnston, New York, N. Y. Filed August 12, 1907. Serial No. 388,152.

1. In a friction clutch the combination of a driving member, upon the face of which are constructed a plurality of circularly disposed concentric cones; a pin or pivot projecting from the center of said driving member; a driven member, upon the face of which are constructed a plurality of circularly disposed concentric cones adapted to fit into the spaces between the similar cones on the said driving member, slidably mounted on the said pin; a pin or shaft projecting from the center of said driven member, and rigidly attached thereto; a plate member hermetically attached to the rim of the said driving member, and journaled on the projecting shaft from the said driven member, thus forming an oil-tight casing for the said members; and means of sliding the shaft projecting from the said driven member, thus engaging or disengaging the said members, substantially as and for the purpose set forth.

896,398. Incandescent Igniter for Gas Engines. James S. Lang, Boston, Mass. Filed June 9, 1905. Serial No. 264,443.

In an engine of the character specified having a combustion chamber, a gas inlet and exhaust passage, an igniter contained in said exhaust passage, a damper or check in said gas inlet passage, a spindle on which said damper or check is mounted, a lever fulcrumed upon said spindle and fixed thereto, and means connecting said lever with said igniter.

896,451. Safety Clutch for Starting Gas Engines. Walter S. Jones, Plainville, Conn. Filed Aug. 30, 1905. Serial No. 276,464.

1. In a starting device for motors, the combination of a starting shaft with a pair of clutch members for driving the said shaft forwardly, a starting crank connected with one of the said clutch members, a cylindrical friction surface for rotating forwardly with the said shaft, a tubular friction device mounted on the said cylindrical friction surface for carrying the shaft forwardly with the crank against a given load and then permitting the shaft to stop or turn backwardly without the crank, and means for continually binding the said tubular friction device upon the said cylindrical friction surface, to regulate the degree of frction that is constantly exerted thereby.

896,455. Exhaust and Signal Control. Jonathan D. Maxwell, Tarrytown, N. Y. Filed Aug. 23, 1907. Serial No. 389,793.

1. An exhaust and signal control, comprising a muffler having a direct and an indirect outlet adapted to maintain a constant back pressure in its contents, when discharging through the indirect outlet, a signaling means and means adapted to operatively connect the indirect outlet and signaling means, and to close either the direct or indirect outlet independently of the signal.

896,559. Air Inlet Regulator for Carburetters. Adele A. Longuemare, Paris, France. Filed May 27, 1904. Serial No. 210,100.

1. In an automatic air inlet regulator for carburetters the combination with a casing, a perforated cover closing one end of said casing, and a perforated fixed disc in said casing and parallel and adjacent to said cover, of a correspondingly perforated non-rotatable disc of a diameter equal to that of the interior of the casing and seated directly upon and parallel but relatively movable to said fixed disc, the solid portions of the movable disc covering and closing the perforations of the fixed disc and vice versa, a spring for pressing the movable disc upon the fixed disc, means for preventing lateral motion of the movable disc relatively to the fixed disc and a suction pipe connection between the casing and the motor, so that the quantity of air which penetrates is regulated by the suction of the motor acting on the upper surface of the movable disc to separate the two discs more or less from each other, substantially as set forth.

896,606. Automobile Horn. Robert Wright, Cleveland, Ohio. Filed Oct. 15, 1907. Serial No. 397,503.

1. A horn comprising a pipe having an opening in the side, a partition across the pipe forming a chamber in front of said opening and having an outlet thereto, a tongue slidable on the pipe, across said opening, the end of the tongue and the edge of the partition at the outlet being tooher.

896,624. Motor Vehicle. Walter Christie, New York, N. Y., assignor of one-half to W. Gould Brokaw, Archdale, N. C. Filed Feb. 12, 1908. Serial No. 415, 548.

1. In a motor vehicle, the combination with a hollow tubular cross casing provided with vertical bearing sleeves at opposite ends thereof and having rearwardly projecting lugs, bearing members having spindles fitted to the said vertical sleeves, wheels rotatably mounted upon said bearing members, a motor supported upon the said cross casing and transmission gearing including compensating means for connecting the said motor with the said wheels, of a main body portion including a frame work and a pair of rear wheels, the said frame work provided with forwardly projecting channel irons which are fitted to the rearwardly projecting lugs of the cross casing; and means for removably connecting the said lugs and channel irons together.

896,652. Gasolene Feed Chamber for Carburetters. Godfried J. Mayer, Buffalo, N. Y., assignor of five-twentieths to Donald R. Clark and four-twentieths to Herman Mayer, Buffalo, N. Y. Filed May 23, 1907. Serial No. 375,307.

1. A chamber having a cover removably threaded thereon and a lug on its outer face adjacent said cover, a spring bar secured at one end near the bottom of said chamber and having its other end extended above the cover and provided with an offset portion bearing against said cover, said bar being adapted to be sprung onto said lug to disengage said offset portion from the cover and hold it out of engagement.

896,661. Tire. William Porter, Los Angeles, Cal. Filed June 26, 1907. Serial No. 380,946.

A tire comprising a hollow ring formed from thin, perforated, wedge shaped pieces of material arranged radially and close together, each piece being cut out in the center and having its inner edge flat and provided with wings, the portion between said wings being separated by a wedge shaped opening extending from the central opening to the flat edge on a diagonal line extending across a line through the center of said piece substantially midway between said wings, a lining around within the tire having thin edges, one of which extends into the wedge shaped recesses of said pieces of material and the other extends across the joint between the other edge of the lining and the inner end of the severed wing portion, wire rings in the perforations of said pieces to bind them together, and an inflatable tube within the tire.

896,691. Change Speed Driving Gear. Arthur T. Collier, St. Albans, England, assignor of one-fifth to Harry Seymour Foster, London, England. Filed Aug. 20, 1907. Serial No. 389,412.

1. Change speed driving gear comprising a frame, a gear wheel rotatably mounted in said frame, worms gearing with said gear wheel and rotatably mounted in said frame, a shaft rotatably mounted adjacent to said frame, means for coupling said shaft to either of said worms, and means for bringing said frame into and securing it in the respective positions in which the several worms are coupled to sad shaft.

896,703. Vehicle Lamp. Charles Bergener, Rochester, N. Y., assignor to C. T. Hamm Manufacturing Company, Rochester, N. Y. Filed Sept. 13, 1907. Serial No. 392,625.

1. In a lamp or lantern, the combination of a flame chamber provided with a chimney, an upright wall surrounding said chimney and forming therewith descending air passage, an air chamber which incloses the upper portion of said wall and has a closed top which extends from said chimney outwardly over said wall, said air chamber being open at its lower end for the admission of air and said upright wall having within the upper portion of said air chamber a communication through which the air flowing upwardly through said chmber passes inwardly into said descending passage, and a deflector which is arranged around said surrounding wall below the open lower end of said air chamber and deflects the air up-

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wardly into said chamber, substantially as set forth.

896,728. Thread Grip for Vehicle Tires. Carlton L. Hoff, York, Pa. Filed March 1, 1907. Serial No. 360,025.

1. A tread grip for vehicle tires embodying a plurality of substantially parallel tread chains extending longitudinally of the tire and formed of twisted links and straight links at spaced intervals, links connecting the straight links of adjacent chains, side chains and links connecting said side chains and edge tread chains at spaced intervals and formed of twisted links and links connecting adjacent chains formed with eyes twisted with relation to each other to engage the side bars of the twisted chain links at substantially right angles thereto.

896,739. Transmission Gearing. William C. Mayo and John Houlehan, El Paso, Tex., assignors of one-third to George E. Briggs, Barstow, Tex. Filed Sept. 5, 1907. Serial No. 391,525.

1. In a transmission gear, an annular gear wheel having an annular ball race on each face, a pinion meshing with the gear wheel, a casing inclosing the gear wheel and pinion and provided with an annular ball race corresponding to one of the ball races of the annular gear, a removable cover for the casing adjustably connected thereto, and an annular series of balls seated in the ball races on each side of the gear wheel and in the respective ball races on the inner faces of the casing and cover.

896,844. Steering Gear. Theophilus Mayhew, Detroit, Mich. Filed Jan. 2, 1908. Serial No. 408,979.

1. In a steering gear having a casing, a rotatable steering wheel shaft secured therein against longitudinal displacement, and a nut for operating a steering knuckle longitudinally reciprocable on the shaft, means yieldingly movable transversely to the shaft adapted to automatically maintain constant endwise pressure on the nut and on the shaft.

896,850. Puncture Closing Device. Stanley Mundey, London, England. Filed Sept. 30, 1907. Serial No. 395,273.

1. A puncture closing device for air chambers comprising in combination a flexible plug having a reduced neck portion and an extensible ring adapted to surround said neck portion to grip air chamber material between itself and said neck.

896,863. Canopy Top for Vehicles. John E. Smith, Atlanta, Ga. Filed March 23, 1908. Serial No. 422,666.

1. The combination with a vehicle body of a rigid, non-foldable top; means for flexibly supporting the top upon the body; and means for limiting the movements of the top relative to the body.

896,897. Vehicle Wheel. Herman Cramer, San Francisco, Cal. Filed Dec. 13, 1905. Serial No. 291,590. Renewed May 27, 1908. Serial No. 435,254.

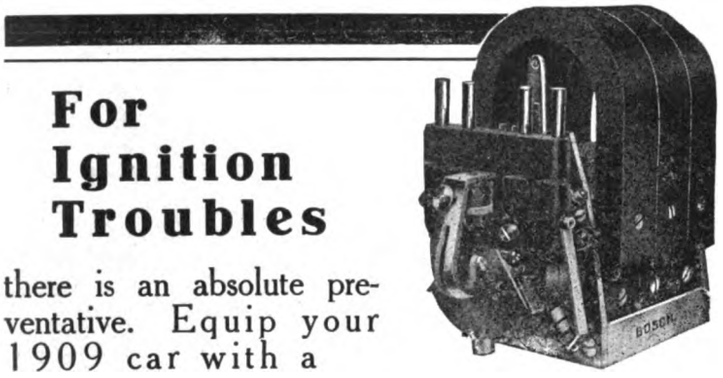
1. In a vehicle wheel, a socket at the outer end of each spoke, a block of rubber in each cocket provided with a tapering perforation, a tire surrounding the wheel, and inwardly extending tapering projections on the tire for entering said perforations.

897,023. Packing for Gas Engine Valve Stems. Alexander K. Schaap, New York, N. Y., assignor to Eva C. Schaap, Brooklyn, N. Y., doing business as Schaap Automobile Company, a Firm. Filed Aug. 8, 1907. Serial No. 387,620.

1. The combination with a four cycle gas engine valve stem and guide, of a packing device encircling the stem and engaging the end of the guide to effect a hermetic connection, and means for pressing said packing yieldingly into active position, such means applying increased pressure during the opening of the inlet valve.

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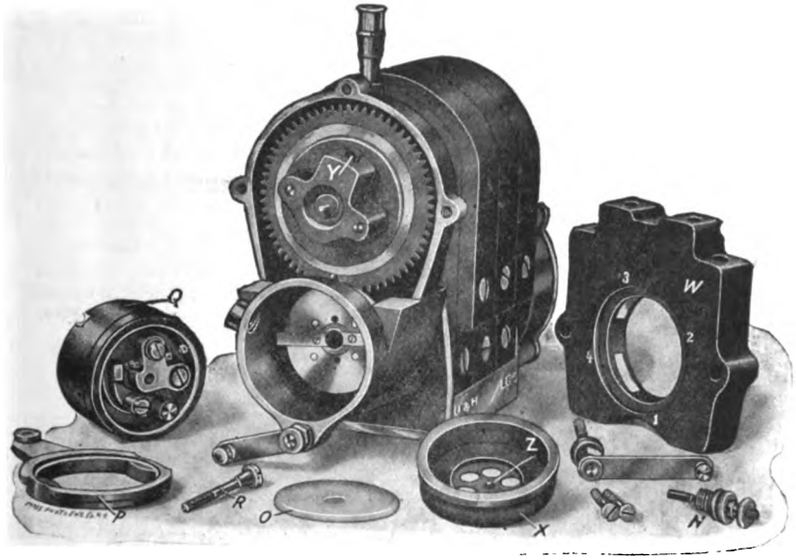
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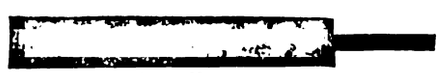
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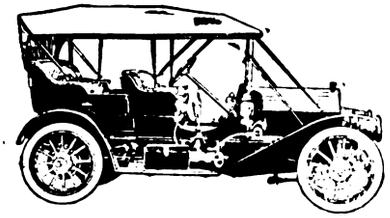
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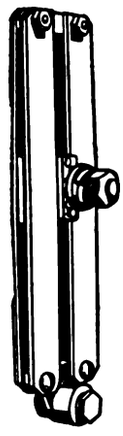
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1909 Gabriel Shock Absorbers



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¶ Cars are like men in that it takes a study of them to realize their possibilities.

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THE BEST MADE.

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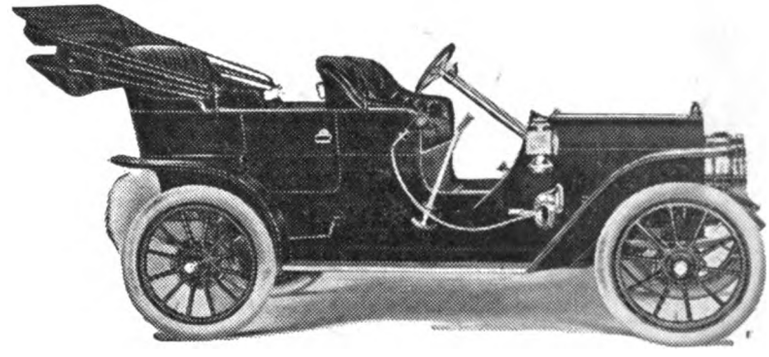


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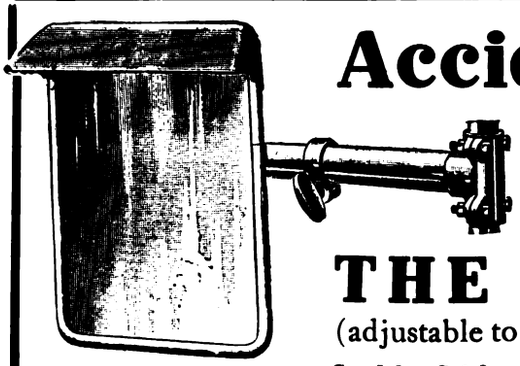
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(adjustable to any position) is made for this purpose and should be on your dash.

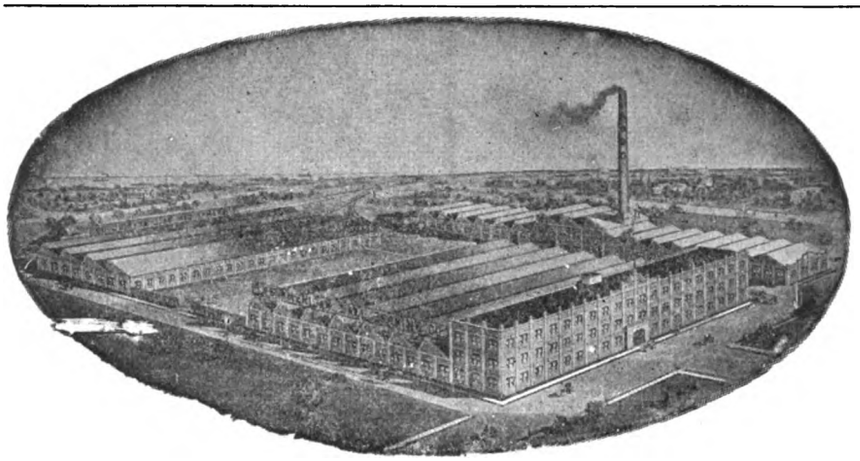
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Show the same care in selecting your speed indicator

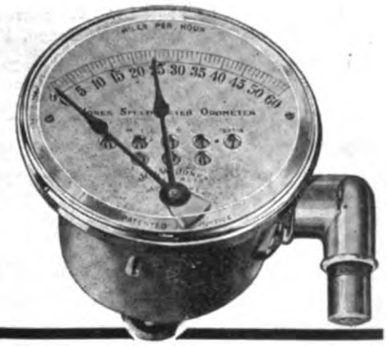
that you do in selecting your car. Make comparisons—examine the workmanship—the finish—the mechanical refinements and the actual performances of every speed-indicator, and your choice will invariably be

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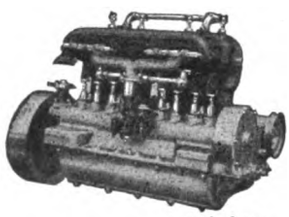
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"No Sand Too Deep—No Hill Too Steep."
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Listen for the knocks!
The car they all knock is the one they are all afraid of
The E-M-F. "30"—sure!

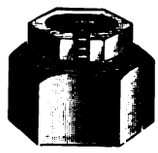
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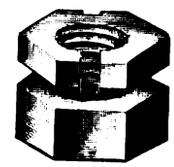
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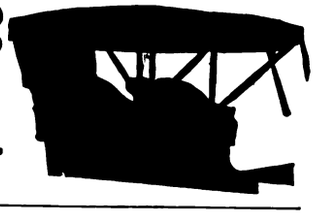
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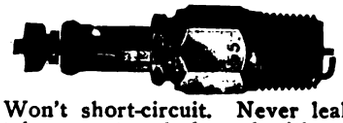
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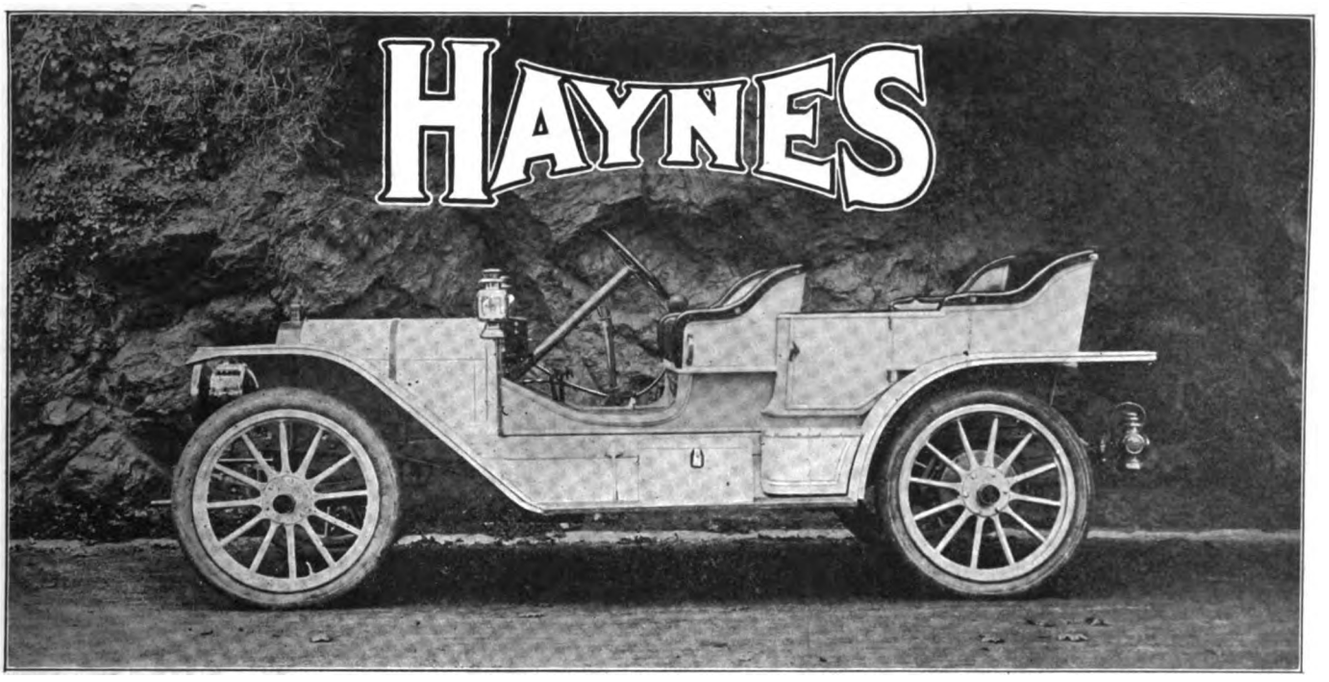
Model B—Brush Runabout

A CAR OF SIMPLE DESIGN MADE WELL
NOT A COMPLICATED DESIGN MADE CHEAPLY

Its records and the opinions of its users speak more loudly than self praise. Agencies for 1909 are being closed rapidly. Much good territory still open.

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A Car For Live Agents To Handle

THERE are other cars on the market that apparently offer more for less money than the Haynes 40 H. P. model at $3000. But their lack of the Haynes steel alloys, the improper simplification of certain parts, the unwise short-cuts in manufacturing generally mean frequent visits to the repair shops.

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And there are Haynes owners everywhere—that is the advantage that age gives us.

A "new one" in the industry has no long established clientele—no good will—no old friends. But the Haynes is the ***oldest American automobile,*** dating from 1893, when Elwood Haynes built the first gasolene horseless carriage in America.

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AGENTS WANTED

We have some desirable territory open this year for the right man. Write at once for particulars.

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Water Cooled, with very large water jacket.
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Transmission—Selective type, three speeds forward and reverse. Ratchet device makes gear stripping impossible.
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The Hiker type consists of two bucket seats with large gasoline tank on rear. Equipment includes Prest-O-Lite tank, baggage rack and tire holders.

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Oldest Automobile Manufacturers in America.

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The 1909 AUTO-METER

The illustration shows the form of the new instrument. The chaste simplicity and artistic beauty of the design is self-evident. It harmonizes perfectly with other dash equipment and gives tone to any car.

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The Odometer is now of our own construction. Therefore, as simple, durable and dependable as the Auto-Meter itself. The figures are so large and distinct that they can be read from the seat.

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The Trip dial-set is simplified. A single turn of the button resets to zero.

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The tests and inspection of each instrument is so rigid that variations from absolute accuracy are only possible when there are variations in tire diameters. This amounts, on the average, to less than 100 feet to the mile.

For these reasons the Warner Auto-Meter has always been specified by those who can afford ***the best,*** and with whom anything short of absolute perfection and unfailing accuracy is of no use whatever.

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CHICAGO, 1305 Michigan Ave.

INDIANAPOLIS, 330½ N. Illinois St.
ST. LOUIS, 3923 Olive St.
SAN FRANCISCO, 550 Golden Gate Ave
LOS ANGELES, 1212 S. Main St.

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The Value of the AJAX 5,000 Mile Guarantee

is known and appreciated by every individual **AJAX** user. It also finds substantial recognition at the hands of the automobile manufacturer who knows better than any one how vital the tire problem is to the motorist.

No wonder, then, that careful buyers and conservative manufacturers like the **Maxwell-Briscoe Motor Comapny** give to the **AJAX** the largest tire order ever received by a single tire firm.

Incidentally they give to their customers the benefit of the **AJAX five-thousand mile guarantee**, which insures the user against tire worry and gives him a security that no other tire maker can afford.

MAXWELL-BRISCOE MOTOR CO.
MANUFACTURERS OF
"The Maxwell"

NO. 2146-T
THIS NUMBER MUST APPEAR ON INVOICE

TARRYTOWN, N. Y., 9/19, 1908.

Ajax-Grieb Rubber Co.,
57th St. & Broadway, N.Y.C.
PLEASE SHIP US WITHIN TO VIA

4000 Sets	28" x 3"	Ajax Tires Complete.
1500 "	30" x 3"	Ajax Tires Complete.
1000 "	30" x 3-1/2"	Ajax Tires complete.
750 "	32" x 4"	Ajax Tires complete.

Shipment to be made to our several factories, in accordance with instructions to be given later.

MAXWELL-BRISCOE MOTOR CO.,
a. R. Connelly
PURCHASING AGT.

ACCEPTANCE OF THIS ORDER IMPLIES AN OBLIGATION TO FILL OUT AND RETURN FORM BELOW.

The World's Largest Tire Order

Naturally given to the **AJAX**. Every one of the 29,000 Tires is accompanied by our 5,000-mile Guarantee.

Would you insist upon incurring tire hazard when you can buy **AJAX** tires and **AJAX** tire insurance at the same price at which users of other tires buy tires alone, without any guarantee?

Think this over and write for a copy of our 5,000-Mile Guarantee, also for **"AJAX,"** a magazine published in the interest of makers, sellers and users of rubber tires and kindred products of the rubber industry.

Ajax-Grieb Rubber Co.

Factories: Trenton, New Jersey.

Branches

NEW YORK CITY—N. E. Cor. 57th Street and Broadway.
BOSTON—819a Boylston Street.
KANSAS CITY, MO.—1422 Grand Avenue.
DENVER, COLO.—1529 Cleveland Place.
SEATTLE—1102 Broadway.
SAN FRANCISCO—438 Market Street.
LOS ANGELES—1038 South Main Street.
PHILADELPHIA—316 North Broad Street.
DETROIT—743 Woodward Avenue.
CHICAGO—1418 Michigan Avenue.

THE SELDEN CAR FOR 1909

Enters upon its second year with a clean record. No "first year" car has ever earned a better reputation or made a better showing.

THE CAR OF MODERATE PRICE

$2000

Touring Car **Roadster**
Limousine **Landaulet**

4 cylinder, 28-30 horsepower, shaft drive, selective transmission, metal body, pressed steel frame, excellent hill climber, fine finish and style, roomy tonneau, luxurious upholstery, easy riding, smooth running, economical in up-keep, in fact, a high grade car in every particular.

The "Silent Selden"

1909 MODELS READY IN SEPTEMBER

Agency propositions now ready. Send for catalog and specifications.

Selden Motor Vehicle Co.

ROCHESTER, N. Y.

Member A. L. A. M.

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The Beautifully Constructed

1909 line of Stewart Speedometers, as compared with previous efforts in speedometer manufacture is like comparing

the Feeble Light of a Lowly Candle as Against the Powerfnl Rays of a Modern Searchiight

Our Model 11, operated on the multipolar induction principle represents the highest achievement in speedometer construction. **Simplicity in design; workmanmanship without equal; embodying every refinement; all wearing parts hardened and polished; costly jeweled bearings; contained in a beautifully finished case; dial silver finished; scale three times as large as ordinarily used; accurate to a degree never before deemed possible; equipped with 10,000-mile odometer and the new three-dial automatic resetting trip register.** Last, but not least, it is operated by means of **the famous Stewart link flexible shaft, equipped with the Stewart patent swivel joint, without which no speedometer can continue to give always on the job service.**

The Price of this Beautiful Model—$25.00

Guaranteed Absolutely for Five Years

SEND FOR OUR NEW 1909 CATALOGUE

Stewart & Clark Manulacturing Company

509 Diversey Boulevard, Chicago, Ill., U. S. A.

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Overland

The Most Complete Line in America

Model 30 Roadster (3-pass.), Planetary transmission,	$1,250
Model 30 Roadster (4-pass.), Planetary transmission,	1,300
Model 30 Coupe, Planetary transmission,	1,650
Model 31 Toy Tonneau (4-pass.), Planetary transmission,	1,400
Model 31 Tonneau (5-pass.), Planetary transmission,	1,400
Model 32 Toy Tonneau (4-pass.), Selective transmission,	1,500
Model 32 Tonneau (5-pass.), Selective transmission,	1,500
Model 34 Willys-Six Roadster or Tourist,	2,000

For Simplicity
For Reliability
For Appearance
For Comfort and
For Noiselessness

THE OVERLAND IS UNEXCELLED

OVERLAND AUTOMOBILE CO., INDIANAPOLIS INDIANA

MORGAN & WRIGHT TIRES

Are Strong At Every Point

The fabric used is given the most rigid tests to avoid the possibility of weak spots.

In building the tire, special stress is laid upon the care that shall be given to details (every tire builder is required to put his mark on tires made by him as a check against careless work).

And the curing process employed by us guarantees an even cure, leaving no overcured places to crack after the tire has run a few miles.

There is no method of making friends equal to the method of making good.

MORGAN & WRIGHT, DETROIT

BRANCHES, AGENCIES OR DEALERS EVERWHERE

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BOSCH MAGNETO

Wins BOTH Savannah Races

This performance positively demonstrates that the Bosch Magneto is the best and most reliable system of ignition in the world.

It is **"THE"** Magneto chosen by manufacturers, drivers and owners who desire PERFECT IGNITION.

In the Grand Prize

18 out of the 20 cars entered were equipped with Bosch Magneto

1 Fiat,	**Bosch Magneto**	10 De Dietrich,	**Bosch Magneto**
2 Benz,	**Bosch Magneto**	11 Simplex,	**Bosch Magneto**
3 Fiat,	**Bosch Magneto**	12 National,	**Bosch Magneto**
4 Benz,	**Bosch Magneto**	13 Lozier,	**Bosch Magneto**
5 Clement-Bayard,	**Bosch Magneto**	14 Itala,	**Bosch Magneto**
6 Renault,	**Bosch Magneto**	15 Benz,	**Bosch Magneto**
7 Clement-Bayard,	**Bosch Magneto**	16 Itala,	**Bosch Magneto**
8 Itala,	**Bosch Magneto**	17 Chadwick,	**Bosch Magneto**
9 Fiat,	**Bosch Magneto**	18 Renault,	**Bosch Magneto**

In the Light Car Race

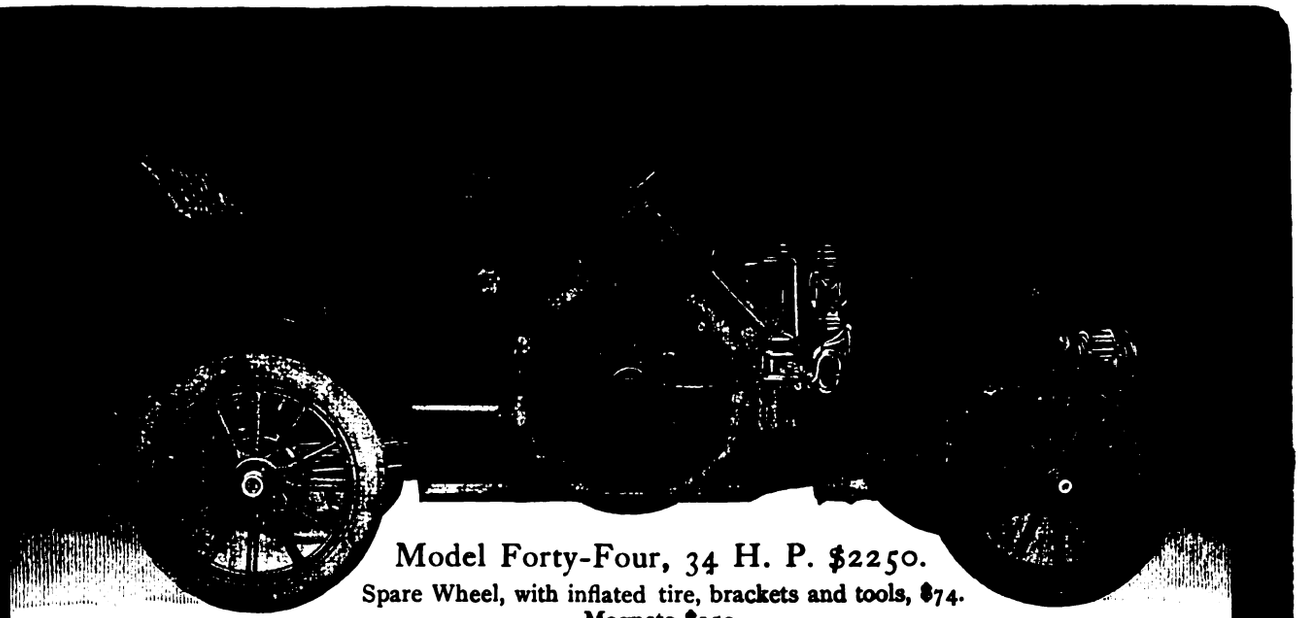
12 out of 15 cars entered were equipped with Bosch Magneto

1 Lancia,	**Bosch Magneto**	8 Maxwell,	**Bosch Magneto**
3 Chalmers-Detroit,	**Bosch Magneto**	9 Maxwell,	**Bosch Magneto**
4 Buick,	**Bosch Magneto**	10 Buick,	**Bosch Magneto**
5 Isotta,	**Bosch Magneto**	11 S. P. O.,	**Bosch Magneto**
6 Maxwell,	**Bosch Magneto**	12 Chalmers-Detroit,	**Bosch Magneto**
7 Maxwell,	**Bosch Magneto**	15 Chalmers-Detroit,	**Bosch Magneto**

BOSCH MAGNETO COMPANY

160 W. 56th St., New York **Chicago Branch: 1253 Michigan Ave.**

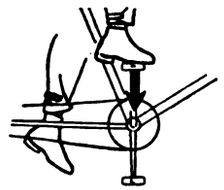
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Model Forty-Four, 34 H. P. $2250.
Spare Wheel, with inflated tire, brackets and tools, $74.
Magneto $150.

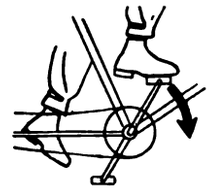
THE OFFSET CRANK SHAFT

Most automobiles develop sufficient power when they are traveling at a *high* speed. The greatest need is for power at *slow* engine speeds. Rambler Model Forty-Four can be operated smoothly and steadily at *three* miles an hour on *high* gear. This is because of the offset crank shaft.

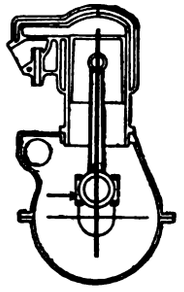


EQUIVALENT TO POSITION IN ORDINARY ENGINE OF PISTON AT EXPLOSION CENTER.

Rambler
The Car with the Offset Crank Shaft

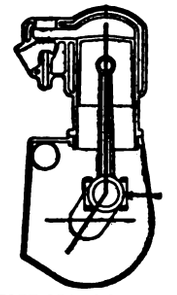


EQUIVALENT TO POSITION IN RAMBLER ENGINE OF PISTON AT EXPLOSION CENTER.



ORDINARY ENGINE. POSITION OF PISTON AT EXPLOSION CENTER. EXPLOSION EXERTS NO TURNING EFFORT TO CRANK SHAFT. THE DEAD CENTER WASTES ENERGY. SHOCK FALLS ON BEARINGS.

How the Offset Crank Shaft is an Advantage



RAMBLER OFFSET CRANK SHAFT. POSITION OF PISTON AT EXPLOSION CENTER. FULL POWER OF EXPLOSION EXERTS TURNING EFFORT TO CRANK SHAFT. DEAD CENTER ELIMINATED. NO ENERGY WASTED. NO SHOCK TO BEARINGS.

Seven passenger model, forty-five horse power with offset crank shaft, $2500. Other models, $1150 to $2500. Write for catalog describing in detail Rambler offset crank shaft, Spare Wheel, straight line drive and other exclusive features of the new Rambler models.

THE CAR OF STEADY SERVICE

Thomas B. Jeffery & Company, Main Office and Factory, Kenosha, Wis.

Branches and Distributing Agencies:

Chicago, Milwaukee, Boston, New York, San Francisco. Representatives in all leading cities.

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, December 3, 1908. No. 10

MAKERS POOL PATENTS ON COILS

Holding Company Formed to Issue Licenses and Prosecute Infringements—Action Follows Litigation.

Claiming to hold basic patents affecting certain valuable features of spark coil construction, a holding and licensing company has been formed which proposes to assert its position in the field and to force all the makers and importers of coils in the United States to pay tribute either in license fees or infringement recoveries, where their devices come within the scope of the letters patent which it has acquired. The formation of the new corporation, which is to be known as the Unit Coil Co. and which will have its headquarters at 15 Exchange place, Jersey City, N. J., follows the amicable settlement of an infringement fight between the Autocoil Co., of Jersey City, and the Connecticut Telephone and Electric Co., of Meriden, Conn.

As a means of compromising the litigation, the patents involved have been turned over to the new company, and in the future both the Autocoil Co. and the Connecticut company will operate under license from the Unit Coil Co. Of the patents which the latter now holds, and under which it will act, the most important are No. 878,435, of February 4, 1908, to Richard Varley, and No. 884,116, of April 7, 1908, to E. Q. Williams. These patents, it is declared, "cover every practical form of removable unit induction coil," and the immediate prosecution of unlicensed manufacturers, users, and vendors is threatened.

Royal Plant Bought by New Company.

Transfer of the business, plant and good will of the Royal Motor Car Co., of Cleveland, O., has been made to a newly organized company, which will be known as the Royal Tourist Car Co., and which will continue to make the Royal Tourist cars. Judge Taylor, of the United States District Court, at Cleveland, granted the necessary sanction on Tuesday, permitting the receivers to complete the transaction. The officers of the new company include George J. Dunham, of Boston, president; N. E. Calhoun, of Cleveland, vice-president and treasurer, and Clifford Fuller, of Cleveland, secretary.

Glover New President of Corbin.

Having resigned as president of the Corbin Motor Vehicle Corporation, Howard S. Hart has been succeeded by President Charles Glover, of the Corbin Screw Corporation, of New Britain, Conn. The latter does not relinquish the presidency of the Corbin Screw Corporation in assuming his new duties, but it is expected that his energy and initiative, which have contributed so much to the success of the Screw company, will give a new impetus to the production of Corbin cars. In addition to great business experience and his proved executive ability in large affairs, Glover is prolific in inventive and mechanical genius, a large part of the machinery used by the Corbin Screw Corporation being of his origination. Both the design and the manufacturing methods employed in connection with the Corbin models will hereafter be benefitted by his knowledge.

Peerless to Build on Broadway.

Property for its New York City branch has been purchased by the Peerless Motor Car Co., of Cleveland, O., on upper Broadway. The site is of L shape, having a Broadway frontage of 70 feet, abutting that of the Baptist Tabernacle, on Fifty-sixth street. The extension gives a 25-foot outlet on Fifty-seventh street. An eight story fireproof building will be erected.

Hadley Resigns from Garford.

C. E. Hadley has resigned as general manager of the Garford Company, of Elyria, O. No successor will be appointed to the position, as the Studebaker Automobile Co., of South Bend, Ind., is now marketing the entire output. A. L. Garford will assume full control of the producing end.

HERRESHOFF PLANS ANNOUNCED

Output Will be Sold Only in the East—Mechanical Features of the New Cars are Disclosed.

Confirming the Motor World's exclusive report of the selling arrangements for the new Herreshoff Motor Co., of Detroit, Mich., it is announced that Harry S. Houpt, distinct from his relations with the Harry S. Houpt Co., of New York City, has signed a contract by which he will take the entire output of the Herreshoff cars, which are to appear about the first of January. For the coming season Houpt will place the output almost entirely in the East, and is at present arranging agencies in the Eastern cities. Not until 1910 will Western agencies be placed, by which time the output will be greatly increased.

The new car, designed by Charles F. Herreshoff, has a unit power plant incorporating the engine, fly wheel, clutch, and three-speed progressive change gear in one combination. Three-point suspension is featured, and the drive to the full floating rear axle is by tubular shaft, enclosed in a torque tube. The four cylinder engine features larve valves and has a set spark with both magneto and battery high tension ignition. Its speed is from 200 to 2,400 r.p.m., delivering 24 horsepower at the rear wheels. The weight is 1,600 pounds. Semi-elliptic springs are used in front and back, and the wheels carry 32x3½-inch tires. The standard type will sell for $1,500, but all types of body will be supplied.

Shawmut Seeks Plant in Reading.

The Shawmut Motor Co., of Stoneham, Mass., whose plant was destroyed by fire, is negotiating with the Business Men's Association of Reading, Mass., with a view to removing to that town. A suitable plant in Reading is at present idle, and if satisfactory terms can be arranged the Shawmut company will acquire it.

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FEW GAINS IN EXPORT MARKETS

Showing for October Reveals a Decline in Outward Shipments—The Record for Ten Months.

As an offset to Italian racing victories, the American makers are winning a modest commercial victory in Italy, according to the October export record, the shipments of American machines to that country having increased for the month to ten times what it was in the corresponding month last year. Gains are also indicated in British North America, the West Indies and Bermuda, Other Europe, and in Africa. The trade with Germany is practically the same as in October a year ago, while the remainder of the divisions all record losses. The month's showing discloses a serious falling off in the traffic with the United Kingdom, from $118,470 to $63,595, and France drops from $29,199 to $5,531. A decline from $23,865 to $3,519 occurs in the exports to South America, and Mexico registers a diminution from $44,772 to $30,366. The total of business for the month amounts to $213,775 as against $318,103 for October, 1907.

For the ten months ending with October the total is $2,296,503, as against $5,281,988 for the same period last year. Only two divisions show gains for the whole period. Other Asia and Oceania being credited with an increase from $77,514 to $115,097, and the division known as Other Countries showing a gain from $11,400 to $20,702. The remaining twelve divisions record losses, the most radical being those of Mexico, the West Indies and Bermuda, South America, and British Australasia. Holding its position of the largest single customer, the United Kingdom bought to the amount of $1,605,075 as against $1,622,261 during the ten months of 1907.

The record in detail is as follows:

	October		Ten Months Ending October		
	1907	1908	1906	1907	1908
Automobiles, and parts of	.....	.....	*$2,356,110	.....	.....
†Automobiles	$276,198	$165,837	‡1,379,935	$4,718,676	$3,971,406
Parts of	41,905	47,938	‡155,228	563,312	525,097
Exported to—					
United Kingdom	118,470	63,595	1,065,541	1,622,261	1,605,075
France	29,199	5,531	286,794	561,582	538,865
Germany	5,776	5,735	124,190	164,050	151,467
Italy	154	1,986	239,928	242,345	221,519
Other Europe	6,613	10,437	196,471	267,674	202,711
British North America	38,438	49,142	815,031	1,124,979	1,047,024
Mexico	44,772	30,366	613,453	557,454	249,036
West Indies and Bermuda	13,693	15,644	207,834	236,004	137,117
South America	23,865	3,519	122,382	208,919	101,677
British East Indies	239	170	26,922	28,950	23,657
British Australasia	16,421	15,785	106,476	170,917	75,165
Other Asia and Oceania	17,651	10,264	63,800	77,514	115,097
Africa	450	1,310	15,519	7,939	7,391
Other countries	2,362	291	6,932	11,400	20,702
Total	$318,103	$213,775	$3,891,273	$5,281,988	$2,296,503

* Figures are for six months, January to June, 1906. † Number not stated prior to July 1, 1906. ‡ Figures are for July to October, 1906, inclusive.

Elliott's Illness Results Fatally.

One of five well known men in the automobile industry to be stricken with typhoid fever at about the same time, following a lunch a few weeks ago at a New York hotel, A. B. Elliott, treasurer of the Witherbee Igniter Co., of New York City, succumbed to the malady on the 26th ult. His untimely death cuts short a most promising career. Educated at the University of Virginia, he became a graduate electrician from the training school of the General Electric Co., following which he was for a time in part charge of the electrification of the New York Central railroad's lines in New York City. This work he left, to engage in the field of gas engine ignition, and under his direction the development of the Witherbee specialties has been carried out. He was thirty-five years old, and had been married about a year.

Four of his companions at the lunch in question were taken with typhoid, and are confined with it at present. The list includes T. J. Wetzel, L. A. Hopkins, Herbert Lytle and John B. Rowland.

Tilden and Graham go to Prison.

Following the conviction of conspiracy in having promoted the Steel Ball Co., of Chicago, Ill., by means of fictitious notes of the Milwaukee Avenue State Bank, two officials of the company, William L. Tilden and Chauncey L. Graham, were sentenced, on the 27th ult. to a term of from one to twenty years in the penitentiary. The sensational failure of the bank exposed their flotation of $175,000 worth of the notes. The Steel Ball Co. was at one time prominent in introducing the Hill precision oiler.

Apperson Accepts Plans for Addition.

The Apperson Bros. Automobile Co., of Kokomo, Ind., has accepted plans for the construction of a large, three story building, which will add 50 per cent. to the factory floor space. Sales Manager Strout has doubled the number of Apperson dealers, and an increase is necessary.

ELECTRIC VEHICLE TO CONTINUE

Receivers Granted Permission to Manufacture for the Coming Season—Reorganization Plans Progressing.

Permission for the receivers of the Electric Vehicle Co., of Hartford, Conn., to continue the business of the concern until July 1, 1909, has been granted by Judge Lanning, of the United States Circuit Court, sitting at Trenton, N. J. The order permits the manufacture of 200 gasolene cars and 50 electric phaetons, on which Halsey M. Barrett and Henry W. Nuckols, the receivers, estimate a profit of $70,000. In their petition the receivers intimate that considerable progress has been made toward a reorganization, it being hoped that the unsecured creditors will assign their claims for 25 cents on the dollar. A majority of the creditors in this class, it is said, have agreed on this figure.

A financial statement accompanying the report to the court shows receipts from July 20, 1908, to November 24, to have been, including cash on hand at the first date, $427,339.86, and the total disbursements for the same period to have been $272,502.79, leaving a balance in banks amounting to $154,837.07. In addition to this balance the report says that there should be added about $20,000 in the hands of the receivers in Illinois, $8,000 in the hands of the New York receivers and $5,000 with the Massachusetts receivers, making in all a balance of $188,000 in round numbers. A large addition will be made to the balance, it is said, as soon as cars now under construction are sold.

Syracuse Aluminum not Burned Out.

Like the reports of Mark Twain's death, which he declared to be "greatly exaggerated," the account of the fire at the plant of the Syracuse Aluminum and Bronze Co., of Syracuse, N. Y., which appeared recently, overstated the case in indicating an almost total destruction of the buildings. Though threatening the foundry and causing a removal of all the patterns and many of the machines to places of safety, the flames were confined to the offices, where the furniture and many of the company's records were consumed. The plant itself is again in full operation.

Yule to Become a Racine Director.

When the reorganization of the Pope Mfg. Co. is effected and he receives his discharge as one of the receivers, George A. Yule will become a director and manager of the Racine Wagon & Carriage Co., a big $4,000,000 concern located in Racine, Wis., near the Mitchell Motor Car Co.'s works. Mr. Yule already has retired from the Bain Wagon Co., of which he was the directing head for many years.

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IMPORTERS WANT LOWER TARIFF

Their Demand Presented to the Ways and Means Committee—What American Makers Say in Opposition.

Pleading for a reduction in the tariff on imported automobiles from the present rate of 45 per cent. ad valorem to 30 per cent., Charles M. Sherrill, of New York City, representing the Importers' Automobile Salon, appeared before the Ways and Means Committee of Congress at Washington, on Friday last, 27th ult., in an effort to secure more advantageous conditions for the dealers in foreign machines. The importers' brief for lower tariff was presented in the course of a series of hearings which are being held in an effort to secure data for the framing of a bill for tariff revision to be reported from the committee. The session was the last of the hearings on the metal schedule, and though the subject of the automobile tariff is to be discussed fully at a later hearing, Sherill took advantage of the opportunity to present the importers' case. None of the associations of the American manufacturers was represented by counsel, but the importers' demand was emphasized by a telegram from Edward Denby, said to represent the Ford interests, which expressed opposition to an expected increase in the duty.

Counsel for the importers was in an aggressive frame of mind and made no bones about asserting that the American industry is in the hands of a trust, or, in his own words: "Instead of an 'infant industry' which is seeking protection at the hands of your honorable committe, it could more properly be called a trust." He credited the "trust" with an annual profit of 100 per cent.

"The American manufacturers of automobiles are divided into two large groups," he declared, "one the Association of Licensed Automobile Manufacturers, which is organized about the so-called Selden patents and the other the American Motor Car Manufacturers Association which does not own allegiance to the Selden patents. The Selden patent is an ingenious device to maintain a high price for automobiles among the manufacturers using the patent. Up till now all attempts to break this trust have failed because its foundation is a 'United States patent' which is a monopoly granted by the government."

The specific request was for a reduction in the duty from 45 per cent. to 30 per cent. ad valorem, claiming that the manufacture of foreign automobiles involved the use of much American machinery, besides bringing large amounts of business to the American carriage builders who, he said, make 90 per cent. of the bodies for foreign motor cars. All tires, too, he declared, were of American manufacture, while insurance and office work were all contributions to the "sphere of energy," of native Americans.

Though not actively represented at the hearing, the American manufacturers' interests are being cared for by the Motor Car Manufacturers' Tariff Commission, which is composed of the following representatives delegated by the Association of Licensed Automobile Manufacturers, the American Motor Car Manufacturers' Association and the National Association of Automobile Manufacturers: H. B. Joy, Packard Motor Car Company, Detroit, Mich.; A. L. Riker, Locomobile Company, Bridgeport, Conn.; L. H. Kittredge, Peerless Motor Car Company, Cleveland, Ohio; C. H. Stillwell, Franklin Motor Car Company, Syracuse, N. Y.; E. R. Thomas, Buffalo, N. Y.; R. E. Olds, Lansing, Mich., and Thomas Henderson, Winton Motor Car Company, Cleveland, Ohio.

In response to a notification of a hearing to be held on the subject of tariff revision as it affects the motor car industry in America, the commission has submitted a brief to the Ways and Means Committee, in which the relative conditions affecting the makers here and abroad are set forth at length. As showing the importance in American commerce of the companies directly represnted by the joint commission, it is prefaced by the statement that the market value of their products for the current fiscal year will exceed $37,500,000.

"These Companies represent on their pay rolls to-day 11,400 employees directly paid by them and at work within the four walls of the respective companies," continues the brief, "this is not taking into consideration the number of employees directly engaged in work being done for these companies outside of their own factories nor does it take into consideration the millions and millons of dollars' worth of material being purchased by these companies from American sources of supply. A further matter of interest might be that the direct aggregate of pay rolls of the companies represented by the gentlemen present is approximately $700,000 per month paid to American workmen. I merely state these facts as indicative of the importance to be attached by the committee to our industry, and these statistics refer only to the companies of those gentlemen present.

"The extent of the motor car industry at the present time is 253 manufacturers of motor vehicles, of which about 70 to 100 are marketing a product that is of importance to the trade. The value of the total American product for the year 1907 we place according to our best figures at upward of $100,000,000.

"The motor-car industry is in process of rapid development, as witnessed by the fact that this enormous industry has grown up in America in the past ten years. Motor cars for import now come under the Dingley tariff bill, Schedule C, paragraph 193, act of 1897—manufacturers of metal n. s. p. f.

"We specially and earnestly urge upon your committee a special separate classification for motor vehicles and parts thereof, account of the extent and importance of the Motor car industry, which did not exist when the Dingley tariff bill was enacted. It is essential that equitable and adequate tariff protection for our product be provided, owing to the existing conditions in Europe, where very large factories have already more than supplied the European demand and which now finds the foreign market overcrowded, and on account of this overproduction are making strenuous efforts to market their excess product in America by the reduction of prices for exportation and making special discounts, availing themselves of the so-called 'German concessions.' The tariff necessarily, in order to be a protection, must compensate for the difference in the cost of production in this country and Europe. the principal item of which is wages.

"It is to be specially noted that under the existing tariff the volume of imports of motor-cars has annually increased, though statistics show that the value has decreased yearly on account of reduced prices abroad and American competition, yet the number of cars imported has increased each year and we wish to call particularly to the attention of your committee the strenuous efforts on the part of various manufacturers to introduce their goods into the American market—Racing, advertising, branch houses.

"Reduction in prices, undervaluations, special discounts, and every means which can be devised are being, and will be, used to unload on the American market the excess product of Europe produced on the low European wage basis. The only means left to the American manufacturer to offset a reduction of the tariff and increased imports is reduction of wages, contests with our employees, and all the attendant tribulatoins, which we are seeking to avoid.

"Further, it is clear that if the tarim were to be reduced on motor-cars, making in any degree the importation of them more easy, it would necessarily follow that the tariff on component materials comprising tremendous varieties of industries in this country would also have to be reduced."

Figures showing the important bearing of the wage question upon the relative costs of production of American and foreign built cars were presented thus:

"In eight of the leading and important American factories, employing 11,400 men, the average pay per year per person is as follows:

"Workmen, $755.05; commercial employees, $876.07; technical employees, $1.202.41.

"We have also the data covering the same information giving an average of 34 factories in Europe, employing 10,347 men. The average pay per year per person is:

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"Workmen, $306; technical employees, $602.50; commercial employees, $529; showing that the workmen in American factories are paid 2½ times approximately what they get for the same work in the same kind of factories in Europe. Technical employees in the American factories receive approximately twice what they do in Europe, and commercial employees receive about 2¼ times what they do in Europe. As a check on these figures compiled by our home factories it is to be noted that the statistical data gathered by Mr. James M. Carples, who has been abroad gathering data on the subject of rates of wages for us, exactly substantiate the above figures."

Comparing the relative wages in cents per hour by various artizans in France, Austria and Italy, Belgium and America, the data shows that Blacksmiths receive 11, 8½, 10 and 28 cents per hour, respectively; machinists, 9½, 6½, 10 and 25.8; and assemblers, 11 and 9 cents in the first two territories named, while in America they receive an average of 24.6 cents. Pattern makers receive 12 and 10 cents in France, Austria and Italy, as against 31.9 cents in America. The same comparison applied to the earnings of electricians gives the figures, 12, 7 and 25 cents, while carpenters receive 12 cents in France, 6 in Belgium and 33.4 in America. The European apprentice system gives to the French manufacturers from 2½ to 3 years of labor at no pay, while the makers of Austria and Italy are obliged to give half pay for the two-year periods of tuition.

Early this week the Motor World addressed a score of well-known American automobile manufacturers with this request:

What is your opinion of proposed reduction in tariff to 30 per cent. urged by Importers at Washington? Do you favor any reduction?

Half of those reached hastened to place themselves on record, expressions of opinion being almost unanimously in the negative, though in some instances subject to qualification. The gist of some of the replies follows:

Thomas B. Jeffery & Co.—"We do not favor reduction in tariff on automobiles The time is not right nor the industry in condition to meet any such change."

Pope Manufacturing Co.—"We highly approve retention of at least 45 per cent. duty on motor cars and parts."

National Motor Vehicle Co.—"We are not in favor of any reduction in tariffs on automobiles."

Premier Motor Manufacturing Co.—"Believe present tariff of automobiles satisfactory and any change undesirable."

Believing that the prices asked for their product would place them beyond the range of foreign competition in the event of a reduction, a firm which requested that its name be withheld expressed a leaning toward such a change, since if it were extended to certain parts, their own costs would be reduced. For the general good of the industry, however, they stand for the retention of the present tariff.

Palmer & Singer Mfg. Co.—"I think it would be a great mistake to reduce the tariff on automobiles imported into this country. Of course, it would not affect the cheaper grades of cars to any extent, but the best American cars would be affected materially and a reduction would put many of our American manufacturers out of business."

Maxwell-Briscoe Motor Co.—"Under the present conditions the duty on foreign automobiles merely corresponds to the duty levied on raw materials, and it forms a much-needed protection to the American manufacturer as well as to his workmen. The danger of an injudicial reduction of the tariff is that the foreigner will utilize the American market as a dumping ground for the surplus of his cheaply-produced cars. As a matter of fact, the foreign manufacturers are selling their cars in this country now at cost or only slightly above cost, and the American maker's only protection for his industry is the 45 per cent. duty. It would be manifestly unfair to favor the foreign manufacturer with a reduction of duty on his finished product while at the same time retaining the rates imposed on unfinished material used by the domestic manufacturer, because the American maker is unable to obtain his labor at the low figures that are a rule in European factories. Unless the American manufacturer benefits by a commensurate protection, he would be forced to go out of business."

E. R. Thomas Co.—"Do not think it advisable."

The George N. Pierce Co.—"The leading foreign automobile manufacturers have equipped their plants with American made, modern labor-saving machinery and devices. With skilled labor at one-half or one-third the rates paid here and with the present duty against them, the foreign makers are able to compete in this market, as the yearly increasing imports of foreign made automobiles shows. Under these conditions it is plain that a further reduction in tariff would mean increased imports of foreign made cars and reduced production by American manufacturers, ultimately resulting in a lowering of the scale of wages paid for labor and a reduction in the number of workers employed. These conditions justify our opposition to any reduction of the present rate of duties on automobiles."

Dayton Motor Car Co.—"We are in favor of having it remain just where it is."

Studebaker Automobile Co.—"We are decidedly opposed to it. The automobile business in this country is practically a new industry and many millions of dollars have been invested in it. Such a proposed reduction in the tariff would not only retard growth but come pretty near ruining it. This is one of the businesses which needs the protecting help of the tariff."

Brush Runabout Co.—"At the present time it is only the higher priced cars that are in danger of foreign competition and people who buy this type of car use it as a luxury and can afford to pay a liberal duty if they choose to have a foreign name plate on their car. The only people the retention of duty affects is those who can amply afford it. In view of the above we do not favor any reduction whatever."

Program for A. M. C. M. A. Show Week.

Announcement was made last week of the program for the show week of Dec. 31st-Jan. 7th, which is to include besides the usual meetings of the various trade and other organizations, several special "nights" on which the Show Committee of the American Motor Car Manufactures' Association will make special provision for the entertainment of certain specified classes of visitors. As in previous years, "Society Night" will be the chief occasion for sartorial adornment, while the designation of the opening "Gala Night," which is usually given over chiefly to the chauffeurs and their lady friends, is sufficiently suggestive in itself. The full program for the week is as follows:

Thursday, December 31st, 10 A. M. Meeting, Show Committee, A. M. C. M. A.; 3 P. M., Private view of automobile show; Meeting, Executive Committee, New York Automobile Trade Association; 8 P. M., "Gala Night."

Friday, January 1st, Army and Navy Night.

Saturday, January 2nd, Students' night; 10:30 P. M., Show smoker to visiting motorists and dealers at A. C. A. Clubhouse.

Monday, January 4th, 2 P. M., Executive Committee meeting, American Automobile Association; Engineers' night.

Tuesday, January 5, 10 A. M., Executive Committee meeting, National Retail Automobile Dealers' Association; 4 P. M., Meeting, Board of Governors, Automobile Club of America; 1 P. M., Show luncheon to exhibitors by A. M. C. M. A., Hotel Manhattan; Meeting, Society of Automobile Engineers; Society night.

Wednesday, January 6th, 10 A. M., Meeting of Committee of Management, A. M. C. M. A.; 8 P. M., Meeting, Board of Directors, Importers Automobile Salon; Executive Committee meeting, Motor and Accessory Manufacturers; Merchants' night.

Thursday, January 7th, Executive Committee meeting, American Motor League; Municipal night.

Detroit on Eve of Show Warfare.

Show warfare is promised in Detroit, Mich., both the Tri-State Automobile & Sportsmen's Association and the Detroit Automobile Dealers Association having fixed upon dates for rival exhibitions. The former plan to hold theirs at the Light Guard Armory during the week of January 25, while the "Da-Da" show is scheduled for the week of February 15.

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EXHIBITORS AT THE PALACE SHOW

Official List of 263 Displays of Cars, Parts and Accessories—Aeronautic Exhibits Completely Crowded Out.

Official announcement last week of the list of exhibitors at the first of the New York shows, to be held in Grand Central Palace during the week of Dec. 31st-Jan. 7th, revealed a total of 263 displays of cars, parts and accessories, which was lower than had been anticipated. Of these 75 will be the exhibits of manufacturers of complete vehicles of one sort or another, while 188 stands will be given over to the exhibition of parts and accessories. The foreign contingent will consist of 10 importers or agents for the over-seas manufacturers. So great has been the demand for space that the Show Committee has been forced to requisition the area formerly occupied by the Aero Club in order to provide accommodation for the entire aggregation. The complete list of exhibitors is as follows:

Vehicle Exhibitors.

Acme Motor Car Co.
American Motor Car Co.
Austin Automobile Co.
Atlas Motor Car Co.
Anderson Carriage Mfg. Co.
American Motor Truck Co.
Chadwick Engineering Works.
Brush Runabout Co.
Buckeye Mfg. Co.
Benner Motor Car Co.
Black Mfg. Co.
Bristol Engineering Co.
Brewster & Co.
Chadwick Engineering Co.
Cameron Motor Co.
C. G. V. Import Co.
Coates-Goshen Automobile Co.
Cleveland Autocab Co.
Commercial Truck Company of America.
De Luxe Motor Car Co.
Dayton Motor Car Co.
De Dion Bouton Selling Branch.
De Dietrich Import Co.
Delahaye Import Co.
Ford Motor Co.
Fiat Motor Co.
Gaeth Automobile Co.
Grabowsky Power Wagon Co.
Gramm-Logan Motor Car Co.
Gyroscope Automobile Co.
Holsman Automobile Co.
Hotchkiss Import Co.
Hart-Kraft Motor Co.
Inter-State Automobile Co.
Isotta Import Co.
Jackson Automobile Co.
Kiblinger, W. H., Co.
Kissel Motor Car Co.
Lancia Import Co.
Lane Motor Vehicle Co.
Lansden Co., The.
Mack Brothers Motor Car Co.
Marion Motor Car Co.
Maxwell-Briscoe Motor Co.
Midland Motor Co.
Mitchell Motor Car Co.
Moline Automobile Co.
Moon Motor Car Co.
Mora Motor Car Co.
McCue Co., The.
Middleby Auto Co.
National Motor Vehicle Co.
Nordyke & Marmon Co.
Oakland Motor Car Co.
Overland Auto Co.
Omar Motor Co.
Owens Co., R. M.
Pennsylvania Auto-Motor Co.
Pittsburg Motor Vehicle Co.
Panhard & Levassor.
Palais de l'Automobile.
Premier Motor Mfg. Co.
Regal Motor Car Co.
Reliable Dayton Motor Car Co.
Reo Motor Car Co.
Rapid Motor Vehicle Co.
Reliance Motor Truck Co.
Renault Freres Selling Agency.
Simplex Motor Car Co.
Speedwell Motor Car Co.
Schacht Mfg. Co.
Sultan Motor Co.
Welch Motor Car Co.
Wayne Works.
York Motor Car Co.

Accessory Exhibitors on First Gallery (Members Motor and Accessory Manufacturers.)

Ajax-Grieg Rubber Co.
American Ball Bearing Co.
American Electrical Novelty Mfg. Co.
Atwater-Kent Mfg. Works.
Atwood-Castle Co.
Autocoil Co.
Auto Improvement Co.
Badger Brass Mfg. Co.
Baldwin Chain and Mfg. Co.
Bowser & Co., S. F.
Briscoe Mfg. Co.
Brown-Lipe Gear Co.
Byrne, Kingston & Co.
Coes Wrench Co.
Columbia Nut and Bolt Co.
Connecticut Telephone and Electric Co.
Consolidated Rubber Tire Co.
Continental Caoutchouc Co.



THE EXHIBITORS' BUTTON

Cowles & Co., C.
Cramp & Sons Ship and Engine Building Co., Wm
Diamond Chain and Mfg. Co.
Diamond Rubber Co.
Dixon Crucible Co., Joseph.
Dow Tire Co.
Edmunds & Jones Mfg. Co.
Electric Storage Battery Co.
Empire Automobile Tire Co.
Firestone Tire and Rubber Co.
Fisk Rubber Co.
G & J Tire Co.
Gabriel Horn Mfg. Co.
Gilbert Mfg. Co.
Gemmer Mfg. Co.
Goodrich Co., B. F.
Goodyear Tire and Rubber Co.
Gray & Davis.
Gray-Hawley Mfg. Co.
Ham Mfg. Co., C. T.
Harris Oil Co., A. W.
Hartford Rubber Works Co.
Hartford Suspension Co.
Heinze Electric Co.
Herz & Co.
Hess-Bright Mfg. Co.
Hoffecker Co., The.
Hyatt Roller Bearing Co.
Jones Speedometer Co.
Kokomo Electric Co.
Leather Tire Goods Co.
Light Mfg. and Foundry Co.
McCord Mfg. Co.
Mezger, C. A.
Michelin Tire Co.
Morgan & Wright.
Mosler & Co., A. R.
Motsinger Device Mfg. Co.
Motz Clincher Tire and Rubber Co.
National Battery Co.
National Carbon Co.
National Coil Co.
Never-Miss Spark Plug Co.
N. Y. & N. J. Lubricant Co.
Oliver Mfg. Co.
Pantasote Co.
Pennsylvania Rubber Co.
Pittsfield Spark Coil Co.
Randall-Faichney Co.
Rands Mfg. Co.
Remy Electric Co.
Republic Rubber Co.
Sager Co., J. H.
Shaler Co., C. A.
Shelby Steel Tube Co.
Smith Co., A. O.
Spicer Universal Joint Mfg. Co.
Splitdorf, C. F.
Sprague Umbrella Co.
Standard Roller Bearing Co.
Standard Welding Co.
Stewart & Clark Mfg. Co.
Swinehart Clincher Tire and Rubber Co.
Timken Roller Bearing Axle Co.
Veeder Mfg. Co.
Warner Gear Co.
Warner Instrument Co.
Weed Chain Tire Grip Co.
Westchester Appliance Co.
Wheeler, F. H.
Whitney Mfg. Co.
Witherbee Igniter Co.
Motor and Accessory Manufacturers.

Other Accessory Exhibitors—First Gallery.

Miller, Charles E.
Newmastic Tire Co.

Exhibitors on Second Gallery.

Automobile Club of America.
American Automobile Association.
American Motor League.
Automobile Supply Mfg. Co.
Allen Auto Specialty Co.
Anderson Forge Machine Co.
American Thermo Ware Co.
Alexander & Co., H. T.
Austro-American Separator Co.
American Metal Hose Co.
Automobile Co-operative Association of America.
Auto Tire Inflating Co.
American Thermos Bottle Co.
Bosch Magneto Co.
Bretz Co., J. S.
Briggs, William M.
Brown Co., The.
Brown Mfg. Co., John W.
Brownell Motor Co., F. A.
Buda Foundry and Mfg. Co.
Bunnell & Co., T. N.
Burnett Compound Spring Incorporation.
Burrowes Co., E. T.
Branderburg & Co.
Comptoir d'Innovation Pour Automobiles.
Downing, Charles J.
Driggs-Seabury Ordnance Corporation.
Dayton Rubber Mfg. Co.
Elite Mfg. Co.
Ennis Rubber Mfg. Co.
Empire Auto Top Co.
Excelsior Battery Co.
F. R. V. Auto Parts Co.
Flentje, Ernest.
Federal Mfg. Co.
Geiszler Brothers.
Garage Equipment Co.
Gloversville Auto-Glove Co.
Healy Leather Tire Co.
Havoline Oil Co.
Hill Mfg. Co., The.
High Wheel Auto Parts Co.
Hydraulic Oil Storage Co.
Jeffrey-Dewitt Co.
Johnson & Co., Isaac G.
Keystone Lubricating Co.
Lavalette & Co.
Lutz-Lockwood Mfg. Co.
Long Island Auto Supply Mfg. Co.
Motor Vehicle Publishing Co.
Merchant & Evans Co.
Monitor Mfg. Co.
Miller & Sons William P.
Metal Stamping Co.
Marko Storage Battery Co.
Myers, J. L. & A. J.
National Retail Automobile Dealers' Association.
National Auto Top Co.
New Departure Mfg. Co.
New York Coil Co.
Noonan Tool and Machine Works, A. S.
Philadelphia Timer and Machine Co.
Perfection Wrench Co.
Pneu l'Electric Co.
Polson, W. F.
Rushmore Dynamo Works.
R. I. V. Company, Inc.
Reeves & Son, Paul.
Royal Equipment Co.
Rubly Mfg. Co.
Shore Instrument and Mfg. Co.
Stromberg Motor Device Co.
Standard Leather Washer Mfg. Co.
Soare Motor Wheel of America, Limited.
Snell, Irving.
Salman & Co., John A.
Stanley & Patterson.
Safety Device Co.
Sireno Co.
Seamless Rubber Co.
Troy Carriage Sun Shade Co.
Travers Blowout Patch Co.
Union Battery Co.
U. S. McAdamite Metal Co.
Vanguard Mfg. Co.
Wilkinson Co., John S.
Wetherill Finished Casting Co.
Zeglen Bullet Proof Cloth Co.
Allen Fire Department Supply Co.
Duffy Grease Co.
Easton Carbon Works.
General Storage Battery Co.
Nathan Novelty Mfg. Co.
Quincy-Manchester-Sargeant Co.
Smith Mfg. Co., I. J.

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WHITE WINS

Los Angeles to Phoenix Road Race



A brilliant victory was scored by the White Steamer in the recent stock-car race through the mountains and over the desert from Los Angeles, California, to Phoenix, Arizona. Once again the White demonstrated that in a stock-car competition and over roads such as exist in most parts of the country it is faster than any other type of machine. Such a contest as the Los Angeles-Phoenix race is far more significant than a race between specially built cars over specially selected and carefully prepared highways. This latest White victory indicates to the purchaser just what kind of service he may expect from the type of car which he can buy and over roads such as he will have to cover.

The White is the fastest car on give-and-take roads, not because it has the highest-powered engine, but because it delivers at the rear wheels a larger percentage of the power of the engine than any other type. Furthermore, that power is available under all conditions, whether running fast or slow, and no time is lost in shifting gears or in waiting for the engine to "pick up speed." In other words, under ordinary road conditions, the flexibility of the White engine will do what great power in other types of engines cannot do.

Write for circular describing the 1909 models.

THE WHITE COMPANY

CLEVELAND, OHIO

NEW YORK CITY, Broadway at 62d St.
BOSTON, 320 Newbury St.
PHILADELPHIA, 629-33 N. Broad St.

PITTSBURG, 138-48 Beatty St.
CLEVELAND, 407 Rockwell Ave.
CHICAGO, 240 Michigan Ave.

SAN FRANCISCO, Market St. at Van Ness Ave.
ATLANTA, 120-122 Marietta St.

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Progress Toward Uniform Laws.

In the convention of governors, held in Boston early last week, is found one of the most encouraging symptoms of a popular awakening in directions toward which it is most necessary such an awakening should be directed which has yet been seen. Such a convention could not have existed without a sufficient groundwork of popular feeling to guarantee it the support of at least a courteous hearing. On this account its very existence must be held almost as much in esteem as the efforts at progress which it brought forth.

The movement for equalizing the legal measures of various states is one which is of particularly vital interest to the motorist not only because it touches directly his interests in the cause of the highway and the cause of automobile legislation, but also because it tends toward the effacement of that great variety in the popular attitude which is responsible for the differences in the enactments at present in force. Next to a universal law, the passage of uniform laws by the various states, with only such differences as local conditions demand, is most to be desired. The generalization resulting from any such movement must inevitably result in the suppression of abusive restrictions and the betterment of motoring conditions. Apart from the questions of speed limits, universal lights, state or federal aid, or any of the other measures advocated, the convention is creditable to New England as a step in an upward direction.

Development of the Farmer Market.

Though considerable stir is being made just now by the several "quantity producers" who lay claim to a good share of the "farmer market," in accounting for the distribution of their product there is, perhaps, more or less skepticism among outsiders as to the actual basis of the big rural demand for its fulfilment. That they are well founded, and furthermore that the farmer is not only recognized as being worth going after, but is being gone after in persistant and searching fashion is revealed in the extensive plans of campaign undertaken by the various selling organizations in the field.

These forces all have their own individual methods of attack, direct and indirect; their arrangements for seeking and convincing the individual buyer, all worked out according to a thoroughly consistent system. Furthermore these systems, though differing in detail agree pretty uniformly in the provision for direct supervision over the local agents by emissaries sent out directly from the chief of the organization. In more than one instance there is combined with this a system of field work which is calculated at once to reinforce the efforts of the local workers and also to gauge the success of their labors. The net result is a system by which practically every man within a prescribed territory who is either able to afford a car, or who "looks as though he might be," to quote the words of one sales manager, has been given an opportunity to invest in the modern substitute for the horse and wagon.

For example, the branch of one well-known manufacturer which has jurisdiction over a territory including some thirty-five counties is equipped with as many local agencies as can be secured, in addition to which the entire field is constantly being patrolled by four travelers whose business it is not simply to oversee the work of the agents, but also to search out possible customers for them. In doing this the "drummers" are in fact, continually scouring the country in search of prosperous looking farms. As soon as a place is discovered whose owner is known to have sufficient means to place him within the class of "prospects," or whose appearance is such as to warrant such an inference, some excuse is made to stop. The traveler inquires the way to the nearest town, begs to drink of water, buys a glass of milk, inspects the live stock or fodder and in any way possible engages the farmer in conversation. Before he leaves, his measure has been taken, perhaps even he has been given a demonstration under one pretext or another, and within a few days he receives a direct request for patronage from the local agent to whom his name has been turned over.

Not simply this, but the movement of crops, their volume and the influx of money in return for them are watched with zealous care, both with regard to quantity and distribution. In this way the location of prospective customers is assisted, while the profitable handling of the selling forces is managed to better advantage than were the canvass made on a more indiscriminate basis. The farmer market has been a vast and intangible thing hitherto, but while it is being exploited with direct and persistent methods such as these, it is developing at a rate which not only accounts for a number of very large outputs, but also accounts for a softening of the rural attitude toward motoring in a way otherwise inexplicable.

About the Importers' Demands.

There is no small element of human interest in the appearance of a representative of the Importers' Salon before the Ways and Means Committee at Washington last week in advocacy of a one-third reduction in the tariff on imported automobiles. It is indicative not merely of the straits in which the foreign makers find themselves just at present, but also of a recogntion among the importers themselves, if not of open acknowledgement of the fact that the status of the imported product has undergone an alteration in the United States such that it can no longer lay claim to the grand and lofty supremacy which served to exalt it for so long a time. For the proud and haughty importer of a year or two ago to be humbled to the point of seeking a large outlet for the small car is a change of face sufficiently marked in itself

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to be noteworthy. Yet that is the real meaning of the present movement for tariff reduction.

After years of prosperity and plenty a period of decline set in which culminated in the downfall of several of the firms in New York City which had loomed large in the brave array of dealers in the foreign product. Happily, or unhappily, the period of business depression intervened just as matters were reaching a climax and obscured the real facts which were that the American market for the gilded importations was fast waning into nothingness. At the same time a counter movement set in in the growing use of imported cabs, so that the otherwise noticeable drop in actual importations has been bridged over by a perfect deluge of low and medium powered vehicles which though serving to preserve a respectable exterior for the importer have in reality been a very different product from that which formerly was entered. The fact of the matter is that the sale of the expensive and high powered foreign cars has dwindled terribly during the past three years, and the importer in the interests of self-preservation is forced to get down to a basis of price competition, or something very like it.

Just here considerable importance attaches to the present situation abroad. Europe, slower in feeling the effects of the financial depression of last year, has also been slower in recovering from it than the United States. The natural result of this has been a curtailment of production among the automobile makers and with rare exceptions, if any at all, the manifestation of a desire to cater to the ever available intermediate field with a medium priced product. Added to this that the medium priced chassis also lends itself well to the demands of the commercial cab and the inducement is complete. The present session of the Paris Salon tells the story in figures better than words, and the attitude of the American Importers is a natural corollary of it.

In this connection it is particularly enlightening to note the altered attitude oi the importers who, through their representative declare the generous use of American machinery by the foreign builders to be a valid reason for a reduction in the tariff upon the finished product. This is a marked concession, as it is not so very long since the alleged supremacy of the foreign-made machine was declared to be based on the accuracy of the hand workmanship employed in its construction. Indeed, that argument stood in good stead for several years. Another marked concession is disclosed by the further excuse for tariff reduction on the ground that it constitutes an encouragement to home industry, since 90 per cent. of the bodies placed upon foreign chassis are produced in this country. As a matter of fact, it was the first sign of weakening when the American made body began to come into use on foreign cars to a noticeable degree two or three years ago.

It can no longer be held that the foreign product, as a class, is superior to the domestic either in point of design, material or construction. With the gilded halo of its high price removed, it is questionable even whether it would find as ready a sale as it does just now, as it stands upon its pinnacle of exclusive appeal to a certain class of buyers. At all events, the efforts to popularize it on even terms with the home product are productive of no small diversion.

Abandonment of Circular Track Races.

Without desire to detract from the credit which is due the American Automobile Association for setting itself on record as against the practice of automobile racing on circular horse tracks, it may be granted a pity that it had not the courage of its convictions in sufficient degree to take a firmer stand and prohibit it outright. As it is, this branch of the sport is practically cut adrift and left to its fate without the control of any governing body. The declaration of the "Three A" goes not further than to express a conviction of its inutility and to foreswear any further countenancing of it. It might better have stood upon its prerogatives as the governing body over all national contests and forbidden its continuance, instead of itself executing an humble retirement.

The perils which follow in the wake of racing upon circular tracks are so certain and insistent that that branch of competition has become conspicuous for its disasters. A totaling of the list of crippled and maimed in the industry as a result of its horrors—they are nothing less—would yield a surprising number of names of those who in their day were reckoned not so much reckless as skilful drivers. The list of the killed no one has yet had the courage to compile.

With the growth in popularity of endurance contests of the more rational, if no less exacting or strenuous kind, hill-climbs which tax the driver and his machine to the uttermost, and road races in which the stretches are of sufficient length to compensate for time losses at the turns, the need of the circular track has gone out of existence. The parkway idea is too young as yet to be judged on its commercial merits, but it offers the most legitimate outlet for the high-speed impulse and for the requirement for high-speed competition on a large scale.

COMING EVENTS

December 5-6, San Francisco, Cal.—Automobile Dealers Association's track meet, Tanforan Park.

December 12, Denver, Col.—Denver Motor Club's hill climbing contest, Lookout Mountain.

December 12, Worcester, Mass.—Worcester Automobile Club's 200 miles reliability and endurance contest.

December 31-January 7, New York City—American Motor Car Manufacturers' Association's annual show in Grand Central Palace.

January 1-2—Quaker City Motor Club's two days endurance run, Philadelphia to Wilkes Barre, Pa., and return.

January 16-23, New York City—Association of Licensed Automobile Manufacturers' annual show, Madison Square Garden.

January 21-31, Los Angeles, Cal.—Automobile Dealers Association's show.

January 23-30, Philadelphia, Pa.—Philadelphia Automobile Trade Association's annual show.

January 27-February 3, Philadelphia, Pa.—Automobile Trade Association's eighth annual show, Second Regiment armory.

February 6-15. Chicago. Ill.—National Association of Automobile Manufacturers' Show, Coliseum and First Regiment Armory.

February 15-20, Cleveland, O.—Automobile show, Central Armory.

February 15, Detroit, Mich.—Detroit Automobile Dealers Association's show, Wayne Pavilion.

February 16-18, Denver, Col.—Denver Motor Club's first annual show, Auditorium.

February 22, Ceveland, O.—Cleveland Automobile Dealers Company's show, Central Armory.

February 27-March 3, Hartford, Conn.—Automobile Dealers' Association show.

March 6-13, Boston, Mass.—Boston Automobile Dealers Association's (Inc.) seventh annual show, Mechanics Building.

March 27-April 3, Pittsburg, Pa.—Automobile Dealers Association's show, Duquesne Garden.

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WAGNER NIPS GRAND PRIZE BY SECONDS

Driver of Victorious Italian Car in Savannah's Spectacular Contest Covers 402.08 Miles at Average Speed of 65.1 per Hour —Hemery Finishing First Gets Second Honors—Police and Militia Guard the Course While Vast Crowds See Race.



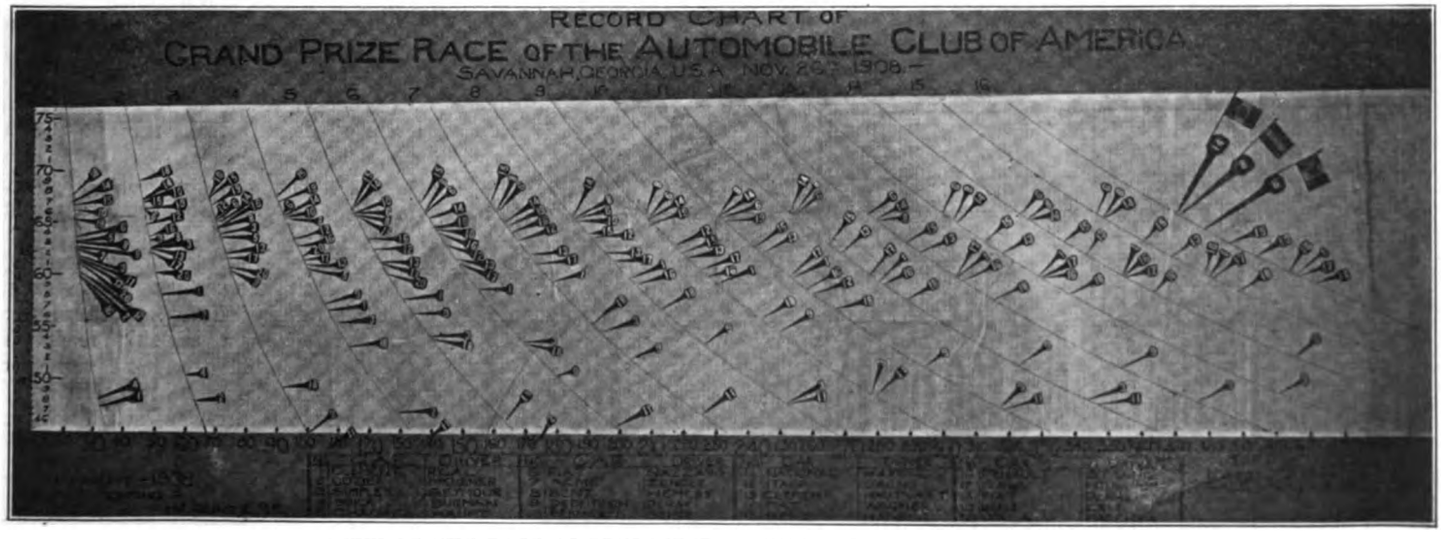
Stop-watches only split down to fifths of a second, and yet even this brief unit of time is too long in which to express the difference in average time per mile between the first and second cars in the Grand Prize race held at Savannah, Ga., on Thanksgiving Day. The race was for a distance of 402.08 miles, 16 times around a course measuring 25.13 miles, and the net time between Wagner in the No. 14 Fiat, the winner, and Hemery, in the No. 8 Benz, which finished second, was 56⅗ seconds. Wagner's time for the whole distance was 6 hours, 10 minutes, 31⅗ seconds, an average speed of 65.1 miles per hour.

Not only was this remarkably close result a record of its kind in automobile road racing, unlikely to be approached for many years, but the incidents of the final struggle were of a character to rouse the spectators to the highest pitch of intense excitement, the three leaders, Nazzaro, Hemery and Wagner, see-sawing and interchanging positions so that no one could pick the final winner with certainty. Even when the last of the three finished, it was necessary to wait for the timers' announcement before one could be sure who had won.

The finish provided dramatic changes in fortunes for both the Benz and the Fiat camps, Nazzaro at the start of the last lap appearing to have a sure grasp on the victory, but Hemery overtaking him and arriving first, quite changing the aspect of things, so that it appeared to be a Benz triumph. The flying Wagner then became a factor and wrested the victory away from Hemery, making it secure for the Fiat camp.

Quite as marvelous as any other feature of the race was the perfect manner in which it was guarded and kept clear. The gold room of the Bank of England is easier of access to the man without the necessary credentials than was the roadway of the Savannah course. Bayonets that were itching to stick somebody and lead-loaded revolvers with hair trigger attachments made it perilous for anyone without a full set of passes, badges, certificates and brassards to so much as set foot on the edge of the roadway itself. Furthermore, if the road pass designated the point at which the holder might cross, it was highly injudicious for him to attempt to use it anywhere else, as he was very likely to land in jail or the hospital.

One white man, driving a horse, was stabbed in the ribs with a bayonet for not getting off the course as quickly as the officer in charge demanded. He is still in the hospital, the stabber being commended for efficient performance of duty. No record is possible of the number of venturesome colored unfortunates who were punctured with the soldiers' steel or poked in the stomach with gun butts, but the majority of the colored brethren and sisters and young folks were healthily afraid of the militia and were scrupulously observant of the



VIEW OF THE RACE AS PRESENTED TO THE A. C. A. IN NEW YORK CITY.

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regulations imposed on spectators and so vigorously enforced.

Hanriot, driver of the No. 15 Benz, after finishing fourth in the race, filled up with gasolene and started back on the course to his camp, in a reverse direction. He was gone before the patrolmen could stop him, but the soldiery soon called upon him to halt. Although he slowed up several times at their upraised hands, he did not stop, being unable to understand English. Whereupon an officer drew a revolver and shot holes in the rear tires and the gasolene tank of the big racing machine. When the official word came that the race was over, the racing Hanriot was permitted to resume his trip back to his camp.

Special trains from New York, Washington, Cleveland, Indianapolis and Chicago, as well as from many points in the South, not to mention the boats from New York, brought hosts of visitors into the city, and the attendance at the race was conservatively estimated at 100,000 people, although some calculations placed the estimate at twice that figure. While the light car race on Wednesday was well attended, it was the Grand Prize affair that found all Savannah and its visitors present.

Betting and bookmaking were more conspicuous than at any of the Vanderbilt races, the latter being the natural standard for comparison, so far as big car races in this country are concerned. The lobby of the De Soto hotel on Wednesday night was a busy scene of wager laying, and the diminutive Tod Sloan, ex-jockey and meteoric sport, dressed in evening clothes and a plaited, bulgy white shirt, was the center of one of the many rings of bettors. That the betting was on wise "dope," was shown by the results, only small odds being given on Hemery, Nazzaro and Wagner, the last wagers making Wagner a favorite with Hemery, 3 to 1 being given on each.

As was to be expected, the race brought to Savannah a great number of men prominent in the trade, a roster of whom would read like a directory of the industry. Not a few were to be found in the press stand, either as "assistants" to the men writing the accounts of the race or as representatives of mythical and heretofore unheard of "syndicates" or press associations.

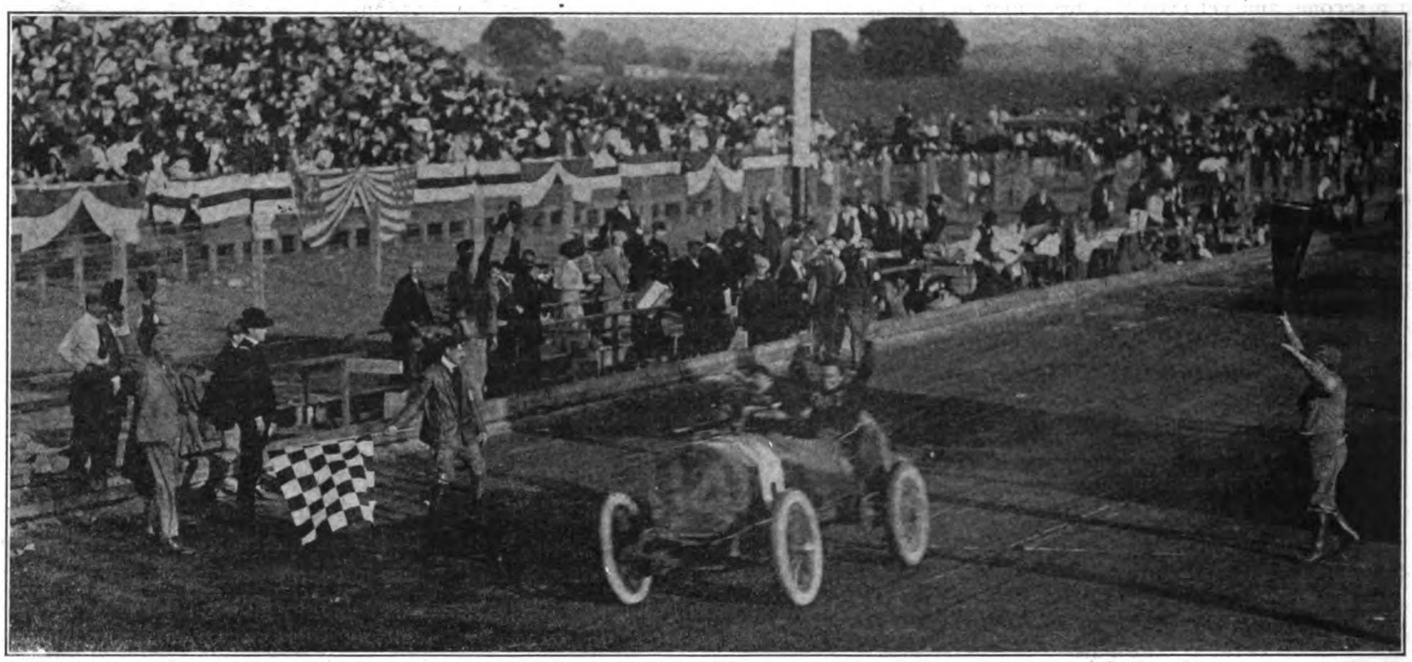
Enjoyment of their two days' stay was assured to the visitors by the genuine and unfailing hospitality of Savannah's citizens. The local residents wore large red badges, reading, "I live here. Ask me." Furthermore, they would accept, too, there being opportunities on every street, as the prohibition law is only a "Jim Crow" affair in its local application. The bars for white men were wide open, and at the De Soto hotel no soft drinks were available. But the red badges proved of real service for strangers who did have to ask for directions or information, and in every case inquirers were given every assistance possible.

A strong local pride in the success of the races was apparent, Savannah being very earnest in its desire to have future events of like character held on its splendid course. The latter is on the public roads of Chatham county, adjacent to the city. These roads are of Augusta gravel and are scientifically constructed, varying from 30 to 60 feet in width. The oil treatment which they receive in preparation for a race makes them almost dustless, and the sharper turns are well banked. The permanent grandstand now seats a total of 21,000 people, a section seating 5,000 people having been added just before Thanksgiving Day.

"Did you enjoy the race?" asked a passenger on the observation platform of one of the special trains as it pulled out Thursday night. He addressed a prosperous but austere looking man, who looked like a typical bank president.

"Anybody who saw that race," replied the latter, "and then beefs about not getting his money's worth is an undesirable citizen."

Fog, heavy fog, wrapped up the morning of Thanksgiving Day and completely answered the criticisms of the grumblers who had complained that a break-of-day start would be much more "picturesque" for the Grand Prize race than the comparatively late hour of 9 o'clock, which had been set.



SCENE AT THE FINISH—WAGNER'S SPECTACULAR ARRIVAL

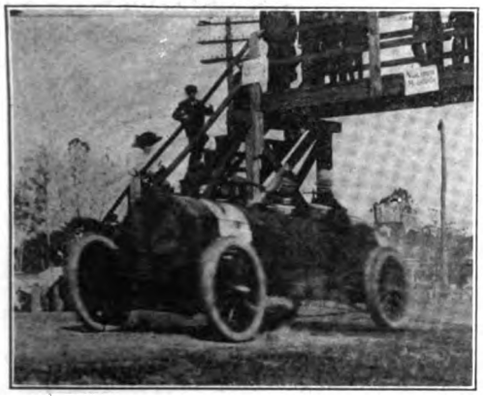
From the first gray peep of morning the crowds began trooping to the course and grandstand, through the heavy blue mist, and many rural spectators, who had driven in with wagons or buggies, took up their positions by the roadside in the dark hours of the night. By half-past eight the stand was filled, and the racing machines themselves were all gathered before the pits, ready to take their positions for the start.

Even at close range it required eager peering to identify them through the thick haze of the morning vapors, their long, hulking red, blue and white bodies all looking very much alike. In contrast to the start of previous big races in this country, there was little raising of hoods or tinkering, all of the drivers apparently being satisfied that their cars were in the best possible condition. A few went over their machines in a casual way, rubbing with waste here and there, or re-arranging the tools between the seats, but most of them stood about in groups discussing the fog or receiving the good wishes of officials and friends. Each machine was well guarded, however, by attendants in overalls, who cast dark looks at thoughtless officials who, having the priv-

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ilege of the course, in some cases leaned against the racers.

As 9 o'clock approached it became apparent that the mist was still too heavy to permit a start, and word was passed that there would be a wait of half an hour to give time for it to clear. The more frivolous of the drivers and mechanicians amused themselves by tossing silver dollars into the air and matching, until this diversion

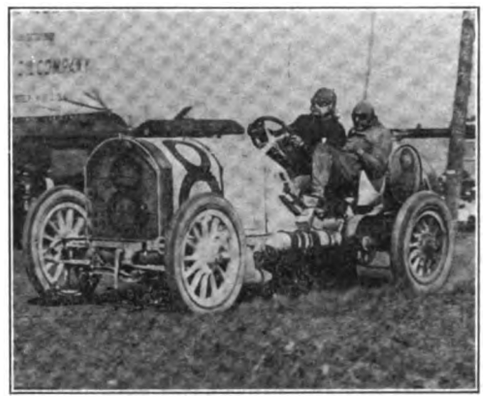


WAGNER FIRST

was put at an end by the chief of police, who escorted the men back to their cars by their coat collars, amid much laughter. The dapper Nazzaro appeared on the scene dressed in a bluish gray union suit effect, which set off his slim lines to great advantage, while Fournier presented a very different aspect in a costume consisting of knee-length khaki trousers, giving him the appearance of a brewery cask handler, or something equally burly and unromantic. Hemery wore a plaited gray plaid short coat, knee length trousers and puttees, leaving it to his mechanic to sport voluminous overalls. The prize in the costume line went to the Lozier team, both Mulford and his mechanic having long white coats, and headgear with flowing white streamers. The pair presented a smart appearance when in their all-white outfit they went to the line.

Although at half past nine the fog was still too thick to make it safe to send the cars off, the moisture was nevertheless condensing rapidly, falling like fine rain and making the roads wet and slippery. It was announced that 9:45 would be the official starting time. The effect of this announcement immediately converted the space in front of the grandstand into a theater of feverish activity. From a mixed mass of cars active attendants soon wheeled the machines into two lines back of the tape, according to their numerical order. Practically all of the motors were then cranked and the engines permitted to run for a few moments, to make sure of no difficulty at the starting line. While making a good deal of noise, none of the cars made the battle roar which has been a feature of the Vanderbilt events, as instead of the open exhaust direct from the sides of cylinders, most of the engines were fitted with manifolds which carried down and back to a rearward pointed exhaust box. The latter, while without baffle plates or muffler construction, reduced the sound considerably. All the tires at the start were fitted with nonskid treads.

Even at 9:45 the air was still thick, but the blue Clement-Bayard, bearing No. "1," was sent off amidst rousing cheers from the grandstand, the cheers being taken up in the distance as the spectators along the course caught sight of the rushing monster hurling through the mist. The white Lozier, No. 2, put after it a minute later, the streamers from the caps of its occupants floating out straight behind and giving an impression of great speed. The other cars followed in order a minute apart, all of them getting away in good style and spinning off into the rapidly lessening haze, which quick-

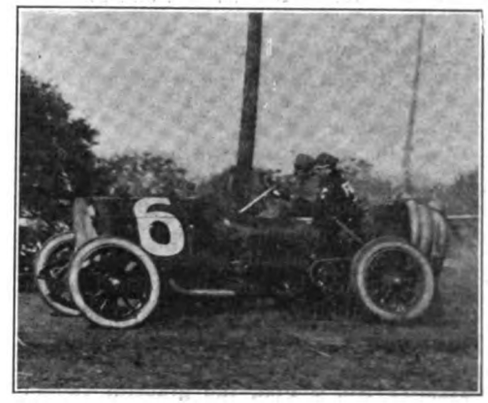


HEMERY SECOND

ly swallowed them from sight. When the whole 20 had been dispatched there was a buzz of expectation as to what changes the first round would show in the running order. In the few brief minutes before the leaders should appear, the sun began to assert itself, and the dark gloom of the early part of the morning quickly melted away before its powerful warmth and light.

The first tidings of the progress of the race came in the form of a telephone message to that effect that No. 1 had "passed Burnside," which information, while taken to indicate that the car was "on its way," did not signify much else, as very few knew where Burnside was, and it was not marked on the maps accompanying the program. This was followed by information that other cars had passed the same point, but the announcements were cut short by the call of the bugler at the end of the grandstand, giving the signal that a car was nearing. Through the remaining traces of the morning's mist the No. 2 Lozier loomed into view, white streamers and all, and went thundering by the stand for the start of its second lap. It was cheered unroariously as having overtaken its French predecessor, but after the No. 3 Simplex and the No. 5 Chadwick came along, without contest from the No. 1 Clement, it became apparent that the latter must have had some trouble. Later reports showed that the car had magneto difficulty and that Rigal, its driver, had stopped to fit a new one.

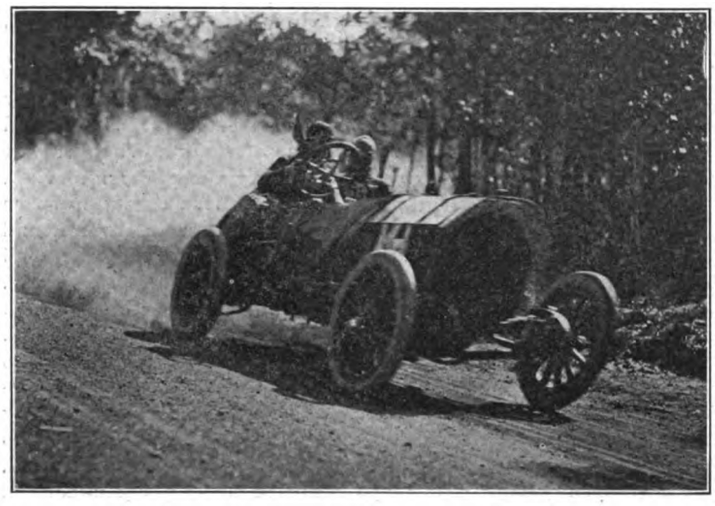
Nazzaro's No. 6 Fiat was the first of the foreign cars to appear and it whizzed by with a speed and steadiness that seemed to spell confidence of victory. A short wait of two minutes brought Hemery into view, his great white No. 8 Benz eating up space in a fashion that was glorious to see, and whirling away in pursuit of the swift and elusive Nazzaro. Next came No. 10, Szisz, in a blue Renault, the car with its rakish prow and low lines going by like a streak. The tow-headed Duray, with No. 9 on his De Dietrich's radiator, romped past a moment later, followed in a few seconds by the delayed Rigal in the No. 1 Clement, who was greeted by cheers. A red Itala, No. 12, piloted by Cagno, led the long, cream-colored No. 7 Acme, driven by Zengle, by a few seconds. Burman's No. 4 Buick pounded across the line, but with no sign of the necessary speed. About a minute later No. 14, Wagner, in a red Fiat, darted into view and was gone, with a hum that was almost musical being so regular. His Fiat, too, like Nazzaro's, had a Benz pursuer, the sturdy German machine No. 15, driven by Hanriot, flying after it in strong style.



NAZZARO THIRD

Strang was looked for next, in the No. 16 Renault, but No. 13 Clement-Bayard, with Hautvast at the wheel, appeared. When the bugle next sounded, it was for No. 18, De Palma in a Fiat, who came tearing down the stretch and off into the distance at a marvelous pace, having made the first lap in the fastest time of all, 22 minutes and 18 seconds for the 25:13 miles. It was hard to pick Strang when he came, his car being disclosed without its screen-like bonnet with which it had started, the engine showing bare. Despite this indication of trouble, however, he was making good speed and was given a hearty vocal encouragement by the rooters. Fournier was right after him, with the black suspenders showing over his fat back as his No. 17 Itala barked in the chase. The only real German driver in the race, Erle, in the No. 19 Benz, was obviously faster, gaining rapidly on them both, yet sweeping by in a nonchalant way that be-

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WAGNER'S LIGHT TOUCH AT A TURN



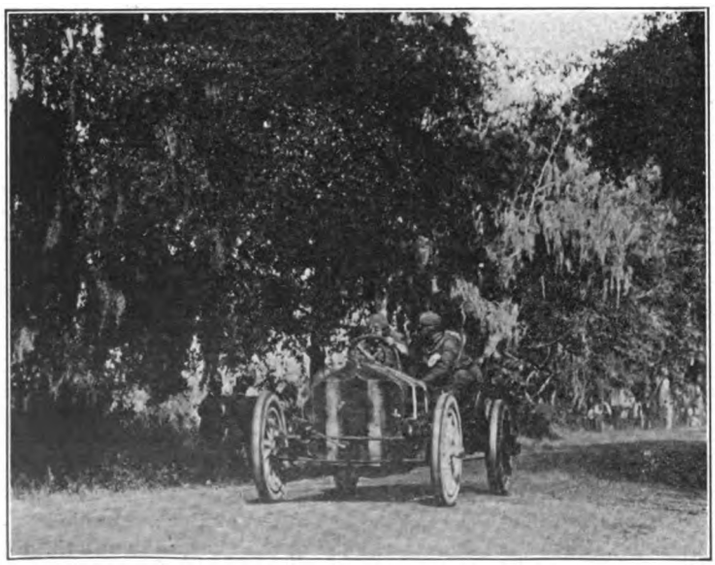
DE PALMA SWEEPING A CURVE

spoke considerably more speed in reserve. The Itala No. 20, the last to start, showed up about three minutes later, running well, with Piacenza as the pilot. All but the No. 11 National, with Harding up, were thus accounted for on the first lap, the times showing that Wagner was next after De Palma in point of elapsed time, with Hanriot in the No. 15 Benz, third, and Szisz in the No. 10 Renault, fourth. Fifth position was earned by Erle in the No. 19 Benz, Nazzaro getting sixth, Haupt in the Chadwick making seventh, and Hemery the eighth position.

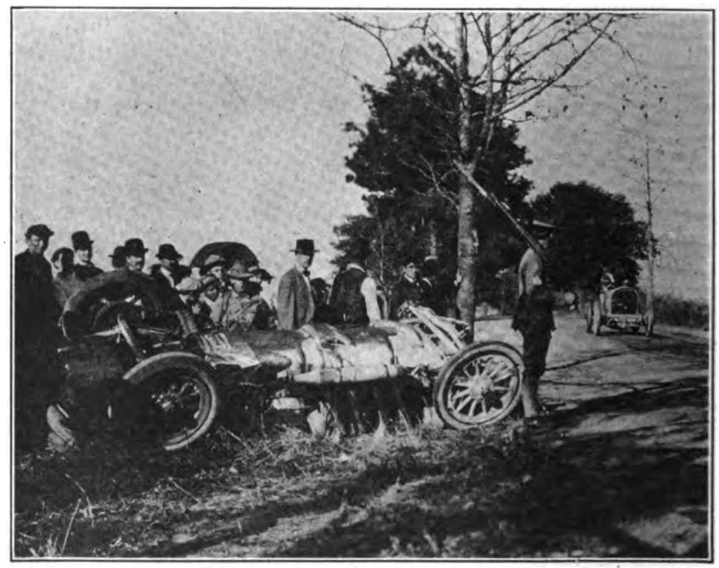
Under the strong sunlight the air was now perfectly clear and still, and when the bugle sounded, announcing cars coming in the stretch, it was possible to see them a great distance away, gradually growing bigger until they flashed by, and diminished again with equal rapidity. The leaders in the second round proved to be the No. 3 Simplex and the No. 5 Chadwick, followed shortly by Nazzaro's No. 6 Fiat, the graceful Italian lounging comfortably in his seat as he shot along at impressive speed. Hemery soon followed, and, while he was among the real speedsters, seemed to be holding plenty in reserve. In this lap De Palma, in the No. 18 Fiat, again took the honors for the shortest elapsed time, making the round in 21:36. He had almost overtaken Hautvast in the No. 13 Clement at the grandstand, but the Frenchman had driven furiously past the stand and down to the corner, half a mile below, where the course turned to the left for a long straight stretch of several miles. Across the fields it was possible from the stand to see both cars in this long stretch, and the spectators went into wild enthusiasm when De Palma was seen to enter the straightaway and gain in his chase. In the distance he passed the Clement, while the stands went crazy. The belated National, No. 11, made its appearance and completed its first round, having taken over 55 minutes, its delay being unaccounted for. But it came around the second time at good speed. All the contestants finished the second round, Wagner holding second position, next to De Palma, Hanriot in the No. 15 Benz holding third, Szisz in the No. 10 Renault fourth, and Erle in the No. 19 Benz, fifth. The road generals, Nazzaro and Hemery, were taking things more easily.

To use a bicycle racing phrase, De Palma "blew up" in the third lap, and instead of the 21:36 of his previous lap, he took 47:54 for the round. He had tire trouble, and some lubrication trouble. Furthermore the case for supporting his spare tires at the back came loose and let the "spares" drag on the ground. When he came around to the pits, the case was pulled off, and he tried to devise a makeshift holder for carrying his extra tires in safety. The best speed at the conclusion of the third lap had been by Hanriot in the No. 15 Benz, with Szisz second, and Erle third. Cagno in the No. 12 Itala, was in fourth position, with Nazzaro fifth, Wagner sixth, and Hemery seventh. It was from this time on that the last three began to "unwind," and to wage the Benz-Fiat battle in earnest.

First around on the fourth lap was Naz-

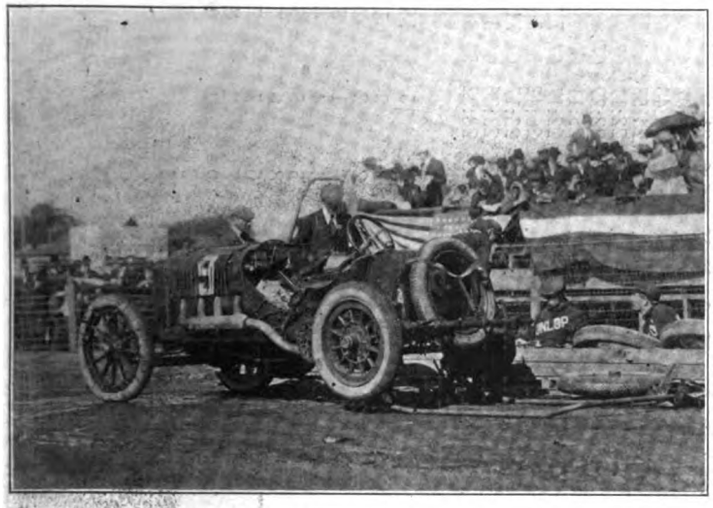


HARDING, NATIONAL, ON A SMOOTH STRETCH



SEYMOUR PASSING WRECK OF ERLE'S BENZ

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DURAY MAKING QUICK TIRE CHANGE



REPAIR PIT SHOWING STOCK OF REPLACEMENTS

zaro, going faster than previously. He had overtaken the Simplex and the Chadwick. Hemery was the next to appear. His pursuit of Nazzaro was unfaltering. When Wagner came along among other cars a little later, he, too, had manifestly let out another notch. His incentive to do so lay in the fact that Hanriot's No. 15 Benz, which had started one minute after him, was now about three minutes and miles ahead. In fact, the No. 15 Benz held the lead in point of elapsed time, as it had in the previous lap, with Erle's No. 19 Benz second, Nazzaro's No. 6 Fiat third, Wagner's No. 14 Fiat fourth, Szisz fifth and Hemery's No. 8 Benz sixth. At this time it was three Benz cars against two Fiats in the fight for first place at the finish, with little chance for any other car.

The pace had by this time put the Buick out of it, the car having retired near the county farm. The Chadwick, too, had quit because of lubrication and other difficulties. The Acme had to be taken off while a broken spring was reinforced with a block of wood, and the Lozier and the National were only appearing occasionally, while the Simplex was running a somewhat doubtful career, but making a good showing thus far. The repair pits in front of the grandstand began to have plenty to do, as various cars would stop for tire changes or minor replacements, or replenishments of gasolene and oil.

For the fifth, sixth and seventh laps Hanriot in the No. 15 Benz continued to hold first place in the elapsed time. Hemery took second place, Nazzaro third, and Wagner fourth, the four men remaining in this order of position until the eighth round. In the sixth lap Duray limped up to his De Dietrich pit with the strut rod on the right side of his machine crumpled up and his rear axle considerably askew. Working like mad, he and his mechanic took off the right chain, dismounted the whole rear wheel brake mechanism, took off the distorted rod, fitted a new one,, replaced all the brake mechanism and the chain, and were gone again, in less than 15 minutes. There was a great demonstration in his honor as he started off, in appreciation of his rapid work. As one bystander observed, "That would have been a day's work in a repair shop." In the seventh lap, De Palma again made the round in 21:36, which time for a single lap was not equalled by any of the other drivers.

In many ways the eighth round was one of the most important of the race, since it marked the half way point and disclosed the different policies of the drivers. A majority of them took occasion on this round to change from non-skid tires to smooth treads, the course having dried perfectly under the baking sun. Nazzaro was the first to stop. Jumping out lightly he and his mechanic worked with marvelous precision in taking off the caps of the oil and fuel tanks and the radiator, and introducing to each a big funnel. In a moment the water, oil and gasolene were pouring into their respective apertures as fast as they would flow, while Nazzaro examined his tires, rubbed his hands with liniment, discussed



VIEW OF THE COURSE FROM THE GRANDSTAND, SHOWING THREE CARS APPROACHING

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TABLE SHOWING ELAPSED TIME OF EACH CAR IN GRAND PRIZE RACE

No.	Driver.	Car.	Country.	H.P.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
14	Wagner	Fiat	Italy	120	22:30	45:03	69:46	92:14	114:14	138:50	163:07	184:57	208:47	230:58	253:02	279:31	304:16	326:28	348:39	370:31
8	Hemery	Benz	Germany	120	23:54	48:24	70:27	92:39	115:02	137:26	160:21	185:27	207:59	230:49	254:03	279:58	303:11	325:59	348:37	371:27
6	Nazzaro	Fiat	Italy	120	23:42	46:45	69:30	92:01	114:44	137:40	160:46	185:37	208:38	231:32	254:22	277:14	299:52	323:32	346:45	378:47
15	Hanriot	Benz	Germany	120	22:38	45:13	67:26	89:44	114:10	136:02	158:38	189:57	219:27	241:47	265:09	288:53	312:44	336:39	360:43	386:12
13	Hautvast	Bayard-Clem.	France	120	24:36	48:41	73:06	99:17	123:24	147:31	171:23	195:19	221:11	244:10	268:49	293:00	318:08	343:30	369:13	394:06
16	Strang	Renault	France	115	25:13	47:33	70:29	96:23	119:10	141:55	165:30	204:52	227:32	258:18	282:03	306:08	330:03	356:47	378:58	403:37
1	Rigal	Bayard-Clem.	France	120	32:23	57:00	81:52	106:41	130:51	154:48	178:31	202:52	230:16	254:45	280:52	304:16	329:11	354:13	380:16	405:49
17	Fournier	Itala	Italy	110	24:30	48:45	73:40	98:37	123:41	148:39	173:21	197:38	225:23	252:53	277:59	303:57	329:51	355:23	381:20	406:32
18	De Palma	Fiat	Italy	120	22:18	43:54	91:48	113:36	140:14	169:33	191:09	213:04	243:54	266:31	289:05	315:28	338:35	363:43	388:59	411:34
9	Duray	De Dietrich	France	125	24:05	47:48	75:07	105:38	134:07	179:55	203:07	226:22	249:29	294:16	322:41	353:49	379:47	405:33	*	
3	Seymour	Simplex	America	50	24:25	48:23	72:06	108:59	139:26	169:06	193:56	251:50	278:14	317:14	343:43	376:26	401:02	426:55	*	
11	Harding	National	America	60	55:01	80:46	107:25	136:40	163:28	198:21	225:32	252:34	279:23	318:10	346:49	*				
19	Erle	Benz	Germany	120	23:12	45:40	68:12	90:28	115:12	140:36	164:00	186:11	210:27	232:33	Hit tree					
12	Cagno	Itala	Italy	110	24:11	46:40	69:27	95:21	121:08	144:20	167:27	190:49	217:11	260:03	Broke spring					
2	Mulford	Lozier	America	50	25:11	63:07	101:03	128:45	171:52	310:23	337:43	366:53	394:02	429:11	*					
10	Szisz	Renault	France	115	22:41	45:16	67:33	92:29	114:46	141:12	Broke axle									
7	Zengle	Acme	America	70	27:22	54:04	181:31	208:53	236:45	263:52	Broke spring									
20	Piacenza	Itala	Italy	110	24:41	51:31	74:48	98:07	125:48	Ditched										
5	Haupt	Chadwick	America	50	23:51	47:17	72:23	99:52	Lubrication trouble											
4	Burman	Buick	America	50	31:44	59:56	Out.													

*Running when race was called off.

TABLE SHOWING TIMES BY LAPS AND AVERAGE SPEEDS IN GRAND PRIZE RACE

No.	Driver.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Av. miles per hour.	Fastest lap.	Av. miles per hour fastest lap.
14	Wagner	22:30	22:33	24:43	22:28	22:00	24:36	24:17	21:50	23:50	22:11	22:04	26:29	24:45	22:12	22:11	21:52	65.1	21:50	69.
8	Hemery	23:54	24:30	22:03	22:12	22:23	22:24	22:55	25:06	22:32	22:50	23:14	25:55	23 13	22:48	22:38	22:50	64.9	22:03	68.38
6	Nazzaro	23:42	23:03	22:45	22:31	22:43	22:56	23:06	24:51	23:01	22:54	22:50	22:52	22:32	23:13	23:12	32:22	63.6	22:31	67.
15	Hanriot	22:38	22:35	22:13	22:18	24:26	21:52	22:36	30:19	29:30	22:20	23:22	23:44	23 51	23:55	24:04	25:29	62.4	21:52	68.99
13	Hautvast	24:36	24:05	24:25	26:11	24:07	24:07	23:52	23:56	25:52	22:59	24:39	24:11	25:08	25:22	25:43	24:53	61.2	22:59	65.64
16	Strang	25:13	22:20	22:53	25:54	22:47	22:45	24:45	39:22	22:40	30:46	23:45	24:05	23:55	26:44	22:11	24:39	59.7	22:11	67.9
1	Rigal	32:23	24:37	24:52	24:49	24:10	23:57	23:43	24:21	27:24	24:29	26:07	23:24	24:55	25:02	26:03	25:33	59.4	23:24	64.43
17	Fournier	24:30	24:15	24:55	24:57	25:04	24:58	24:42	24:17	27:52	27:30	25:06	25:58	25:54	25:32	25:57	25:12	59.3	24:15	62.17
18	De Palma	22:18	21:36	47:54	21:48	26:38	29:19	21:36	21:55	30:50	22:37	22:34	26:23	23 07	25:08	25:16	22:35	58.6	21:36	69.8
9	Duray	24:05	23:43	27:19	30:31	28:29	45:45	23:12	23:15	23:07	44:47	28:25	31:08	25 58	25:46	.....	.....	52.	23:07	65.27
3	Seymour	24:25	23:58	23:43	36:53	30:27	29:40	24:50	57:54	26:24	39:00	26:29	32:43	24:36	25:53	.....	.....	49.4	23:43	63.6
11	Harding	55:01	25:45	26:39	29:15	26:48	24:53	27:11	27:02	26:49	38:47	28:39	.....	.....	.....	.....	.....	47.8	24:53	60.55
19	Erle	23:12	22:28	22:32	22:16	24:44	25:24	23:24	22:11	23:56	22:26	.....	.....	.....	.....	.....	.....	64.4	22:11	67.9
12	Cagno	24:11	22:29	22:47	25:54	25:47	23:12	23:07	23:22	26:22	42:52	.....	.....	.....	.....	.....	.....	57.9	22:29	67.
2	Mulford	25:11	37:56	37:56	27:42	43:07	138:31	27:20	29:10	54:09	35:09	.....	.....	.....	.....	.....	.....	36.5	25:11	60.
10	Szisz	22:41	22:35	22:17	24:51	22:22	26:26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	63.8	22:17	67.7
7	Zengle	27:22	26:42	127:27	27:22	27:52	27:07	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	34.2	26:42	56.5
20	Piacenza	24:41	26:50	23:17	23:19	27:41	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	60.	23:17	64.71
5	Haupt	23:51	23:26	25:06	27:29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	60.	23:26	64.3
4	Burman	31:44	28:12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50.3	28:02	53.8

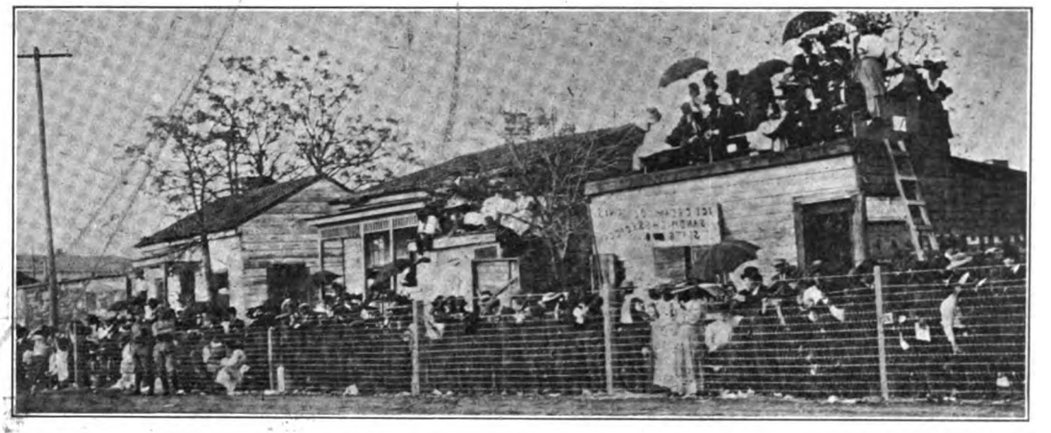
TABLE SHOWING POSITIONS AT END OF EACH LAP IN GRAND PRIZE RACE

No.	Driver.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
14	Wagner	2	2	6	4	2	4	4	1	3	2	1	2	3	3	3	1
8	Hemery	8	12	7	6	5	2	2	2	1	1	2	3	2	2	2	2
6	Nazzaro	6	7	5	3	3	3	3	3	2	3	3	1	1	1	1	3
15	Hanriot	3	3	1	1	1	1	1	5	6	5	4	4	4	4	4	4
13	Hautvast	13	13	11	11	9	9	8	7	7	6	5	5	5	5	5	5
16	Strang	16	9	8	8	7	7	6	10	9	9	8	8	8	8	6	6
1	Rigal	19	17	15	14	12	11	10	9	10	8	7	7	6	6	7	7
17	Fournier	12	14	12	10	10	10	9	8	8	7	6	6	7	7	8	8
18	De Palma	1	1	16	16	15	13	11	11	11	11	9	9	9	9	9	9
9	Duray	9	10	14	13	13	14	13	12	12	12	10	10	10	10		
3	Seymour	11	11	9	15	14	12	12	13	13	13	11	11	11	11		
11	Harding	20	20	18	18	16	15	14	14	14	14	12					
19	Erle	5	5	3	2	6	5	5	4	4	4						
12	Cagno	10	6	4	7	8	8	7	6	5	10						
2	Mulford	15	19	17	17	17	17	15	15	15	15						
10	Szisz	4	4	2	5	4	6										
7	Zengle	17	16	19	19	18	16										
20	Piacenza	14	15	13	9	11											
5	Haupt	7	8	10	12												
4	Burman	18	18														

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with the men in the pit whether he should change to smooth treads, and learned where he stood in the race position. He took a sip of champagne and then tossing the funnels into the pit and replacing the caps, vaulted into his car again and was off, just as Hemery came sliding in. It was the first sight that pursued and pursuer had had of each other since the start of the race, the space between them having all along been represented by almost exactly two minutes.









BITS OF LOCAL COLOR ALONG THE COURSE

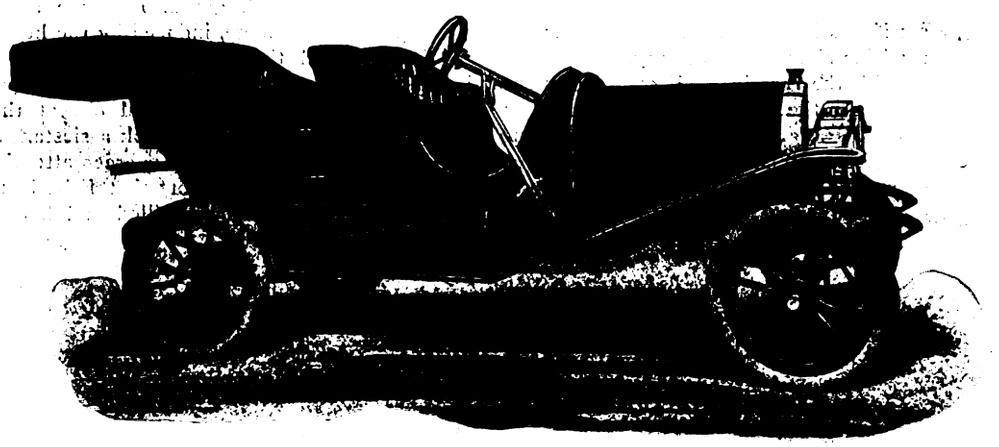
Nazzaro had by the precision of his arrangements and method of working reduced his stop to a fraction less than two minutes, and it remained to be seen if Hemery could do as well. Hemery, however, had a trick or two better than Nazzaro's. His fuel and oil were in portable receptacles with short funnel spouts, which when placed on the openings of the car's tanks could be left unattended until the contents had all poured down, when the portable receptacles would fall off empty. While his mechanic gave a moment to the radiator, Hemery manipulated a jack, raised his rear axle and punched a file into his two rear tires, deflating them for a quick change. In a few seconds more new tires had been put on, the caps on his tanks were closed, and away he went, in but little more time than Nazzaro had taken. This put Hemery on a better footing than Nazzaro so far as tires were concerned, as the latter had evidently determined to try to get through on the one set if possible and to take his chances on a roadside change if necessary.

With the race but half over, the men and women in the immense grandstand began to seek temporary relief from the broiling of the afternoon sun. Stunning as were the gowns of many of the northern women in the stand, they were far too warm and uncomfortable to permit their wearers much enjoyment of the race, and the white summer dresses of the Savannah maids and matrons matched the temperature and circumstances much better. Big yellow butterfles lazily fluttered about the stand, sipping here and there at drops of spilled sarsaparilla and ginger pop, and mocking the furs which adorned the costumes of some of the sartorially incongruous visitors. In addition to dispensing "ice-cold soft drinks," venders traveled up and down the aisles hawking fans, which found a good sale, as there was hardly a sign of a breeze. Whole portions of the grandstand were vacated for a time, while the spectators went for lunch, some of them even going to their hotels or railroad dining cars and returning in time to see the finish.

A brisk fire in the tall dry grass back of the parking space at one end of the stand gave several municipal firemen, armed with portable chemical extinguishers, a lively quarter of an hour, but did not seem to create any alarm in the stand, although it was close by. A genral lassitude spread over the assemblage, induced by the heat of the day and the growing monotony of watching the lesser cars pass. Where space was available, men stretched out at their ease on the benches, and took a siesta.

Shocking the crowd into erect attention, came the telephone report that Erle, in the No. 19 Benz, had been killed and his mechanic fatally injured, through smashing into a tree. The physicians comprising the emergency medical corps at the grandstand were quickly assembled, and some of their number were tolled off to an official car, for a fast run to the scene of the accident, not a great distance away, on the White Bluff road. The boyish Herr Neumaier, director of the Benz selling corporation, who was in charge of the Benz pit, jumped out in his blue overalls, and wanted to go, too, but was not permitted to do so. His grief and agitation over Erle's fate was very sincere, and he ran out of the enclosure seeking to reach his unfortunate driver by means of a machine outside the course. Before he got away, further telephone reports made it clear that Erle had not been killed and that his mechanic was uninjured. A few minutes later the details of the mishap were announced, to the effect that the nonskid tread of a right tire had torn loose, striking the driver in the head and making

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$1250.00
Lambert "30"
(SEE DESCRIPTION BELOW.)

The 1909 Line of Lambert Cars

(FRICTION-DRIVE)

OFFERS BIG POSSIBILITIES TO PROGRESSIVE AGENTS

The line will include six different cars, ranging from an $800.00 runabout to a $2000.00 7-passenger touring car.

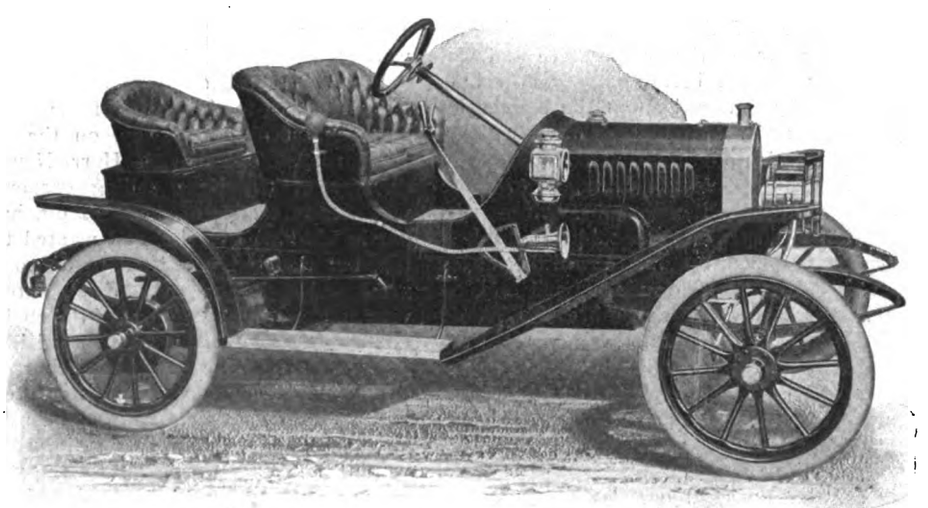
Every one of these cars is an extremely attractive proposition in its class, and even without the friction drive transmission (which is universally regarded as the ideal transmission) would compare favorably in every particular—design, workmanship, and finish, with other cars having the complicated and costly gear transmission.

The Lambert "30"

The Lambert "30," illustrated above, is unquestionably one of the biggest values in $1250.00 cars that will be offered in 1909. Here are a few of the specifications:

CAPACITY: 5 passenger.
HORSEPOWER: 28.
MOTOR: 4 cylinder Rutenber
SPEED: 1-45 miles.
WHEELS: 30 inches.
WHEEL BASE—110½ inches.
DRIVE: Single silent chain, enclosed in dust-tight metal case.
TIRES: 30"x3½".
DETACHABLE TONNEAU.
WEIGHT: 1600 lbs.
PAINT: Body deep red; light red stripe on panel; black molding; running gear, light red, striped with English Vermillion. Special color on proper notice.
EQUIPMENT: 2 gas lamps and generator; tail lamp; 2 oil side lamps; 40 in. flexible tube, horn and full tool equipment.
PRICE: $1250.00 f. o. b. factory.

THE $1250.00 MODEL 27 carries the same specifications as the Lambert 30, except that it is equipped with 2 bucket seats instead of tonneau.



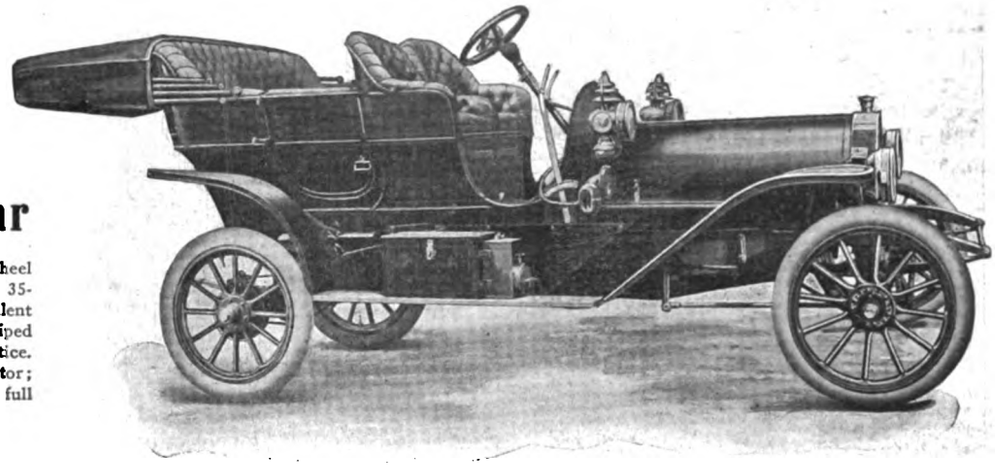
The $800.00 Lambert Runabout

MODEL A-1—Will accommodate three passengers; rumble seat; 30x3" tires; 18 H. P.; speed, 1-35 miles; single chain drive, enclosed; weight, 1500 lbs.; 2 gas lamps and generator; 2 oil lamps; tail lamp; 40" flexible tube, horn and full tool equipment.

MODEL A-3, ($875.00)—Carries the same specifications as Model A-1, with the exception that it is equipped with a surrey seat in rear instead of a rumble seat.

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The $1750.00 Lambert Touring Car



MODEL 19—Carries 5 passengers; 117" wheel base; 30x3½" tires; 4 cylinder Rutenber motor; 35-40 H.P.; speed, 1-50 miles per hour; single silent chain drive, enclosed; painted Lambert green, striped with light green. Special color on proper notice. Weight, 1900 lbs.; 2 large gas lamps with generator; 2 oil lamps, horn; tool box on running board; full tool equipment.

Agents Wanted in Unoccupied Territory

There is going to be a big demand for low-price cars during the coming season, and the variety and prices of the Lambert line offer exceptional opportunities to the right kind of agents.

We desire agents who will make a specialty of demonstrating the Lambert cars; who appreciate the fact that the friction drive is the simplest, most economical, and most satisfactory method of transmission, and who will properly place this fact before prospective buyers.

We know from experience that Lambert demonstrations almost invariably result in sales.

The Lambert friction drive (which should not be confused with certain other friction devices) is covered by a basic patent that incorporates the only successful mechanism of its kind on the market, and the agent who places himself in a position to demonstrate and deliver Lambert cars will not only have all the advantages of a unique and increasingly-popular car, but will find an easy market for all the cars we can deliver to him.

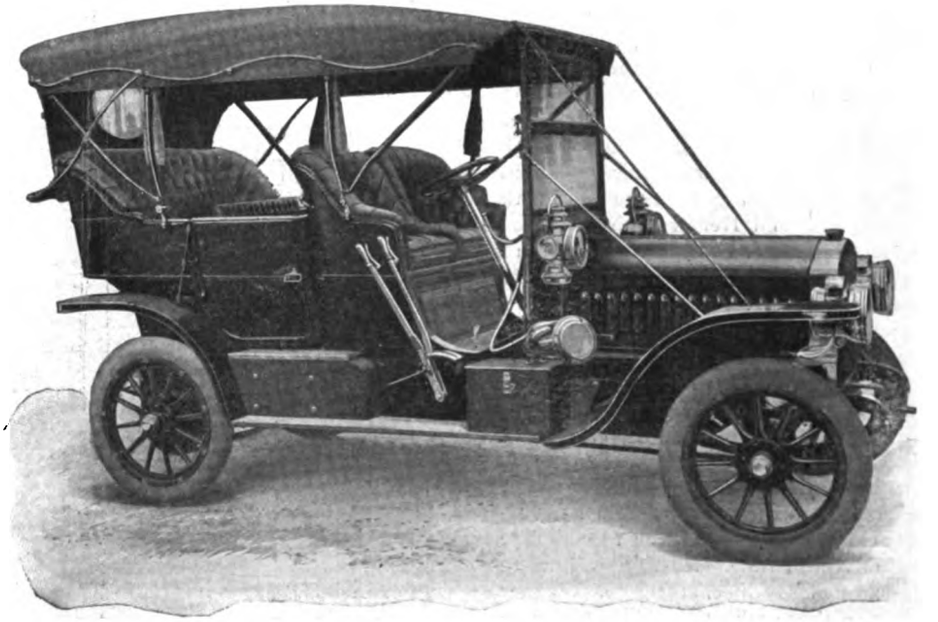
Furthermore, the Lambert proposition to agents is an exceptionally good one from a financial standpoint.

A special folder has been prepared for dealers who desire detailed information about these cars. This folder, together with our proposition, will be sent upon request to any dealer who will advise us as to the cars he is now handling and as to his facilities for properly representing us.

G. B. LAUDERBACK, Sales Manager.

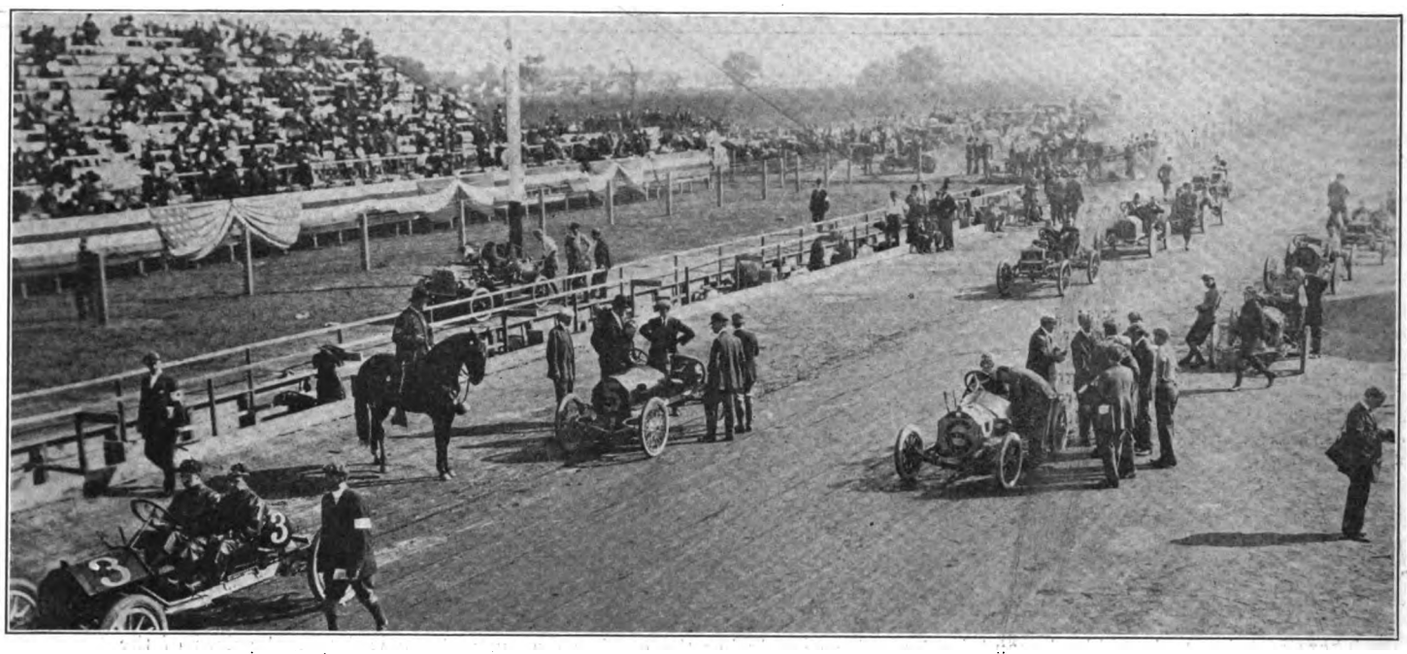
BUCKEYE MANUFACTURING CO., Anderson, Ind.

The $2000.00 7-Passenger Lambert



MODEL B-2—Carries 7 passengers; wheel base 116"; 32x4" tires; 4 cylinder Rutenber motor; 35-40 H.P.; speed, 1-45 miles per hour; direct chain drive to each rear wheel; body imperial green, black moulding, running gear, imperial green, striped with carmine; cape extension; top, with full set storm curtains; glass wind shield; 2 large gas lamps with generator; oil lamps; tail lamp, horn; foot rail; tool boxes on running board and in rear; full tool equipment.

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VIEW AT START OF THE LIGHT CAR RACE

him lose control of the machine, which was going at full speed at the time. The car ran off the road, and turned over, but the mechanic was able to pull Erle from behind the steering wheel in his flight, and they both fell clear of the machine. The heavy steel studs of the tire had broken Erle's nose and jaw, as well as bruising his shoulder, and he was unconscious and bleeding. The mechanic and some women attended him until the physicians arrived, by which time he had sufficiently revived so that he was able to walk to a nearby hospital. It was declared by the doctors that a week or so in the hospital would find him in good condition again. At the time of his accident he was in fourth position on elapsed time, having commenced his eleventh lap.

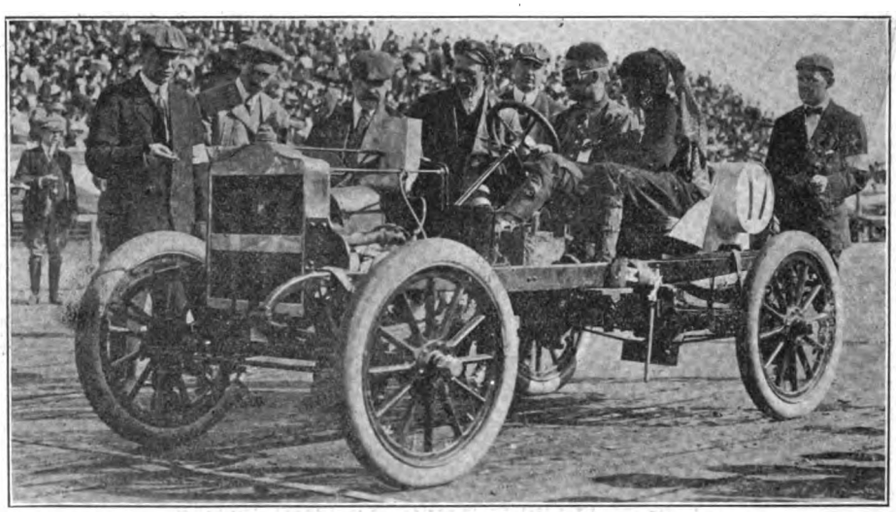
Meanwhile Hemery had opened up and had taken first place on the time basis, for both the ninth and tenth laps, fighting off Nazzaro and Wagner, who in the ninth lap were second and third, and in the tenth lap third and second, respectively. Wagner won first position in the eleventh lap, with Hemery second and Nazzaro third, while in the twelfth lap Nazzaro took the lead, with Wagner second and Hemery third.

Wagner stopped at the pits in the twelfth round, to change tires. When the big frame jack had raised his rear wheels, he gave two quick jabs with a pointed tool, puncturing both rear tires with a loud report. The right tire was quickly replaced, but the left one was more obstinate and it took some fitting to get it on. Furthermore, the mechanic grabbed a coil of copper tubing from the pit and put in a whole new length of it in the air pressure line to the fuel tank, ingenious couplings enabling him to complete the job in record time. Hastily swallowing a generous glass of champagne, Wagner put off, and those who timed his stay were amazed to find that it had been only a few seconds over two minutes, although so much had been accomplished.

Only eleven of the twenty cars were still running in the contest. The Itala No. 20, driven by Piacenza, had left the course at the Isle of Hope in the sixth round and had not resumed. The Acme No. 7 had been unable to get along well with the broken right front spring which the driver had so pluckily repaired, and was out of the running in the seventh lap, while Szisz in the No. 10 Renault had had a ball break in a front wheel bearing, the wheel coming off and running against a tree, ditching the car on Ferguson avenue, in the seventh. At its twelfth round the Itala No. 12, driven by Cagno, drew up at the stand and then drove slowly off the course, one of its rear springs being broken, and no repairs possible in time for it to win. At about the same time the National No. 11, driven by Harding, developed carburetter trouble, and did not appear again.

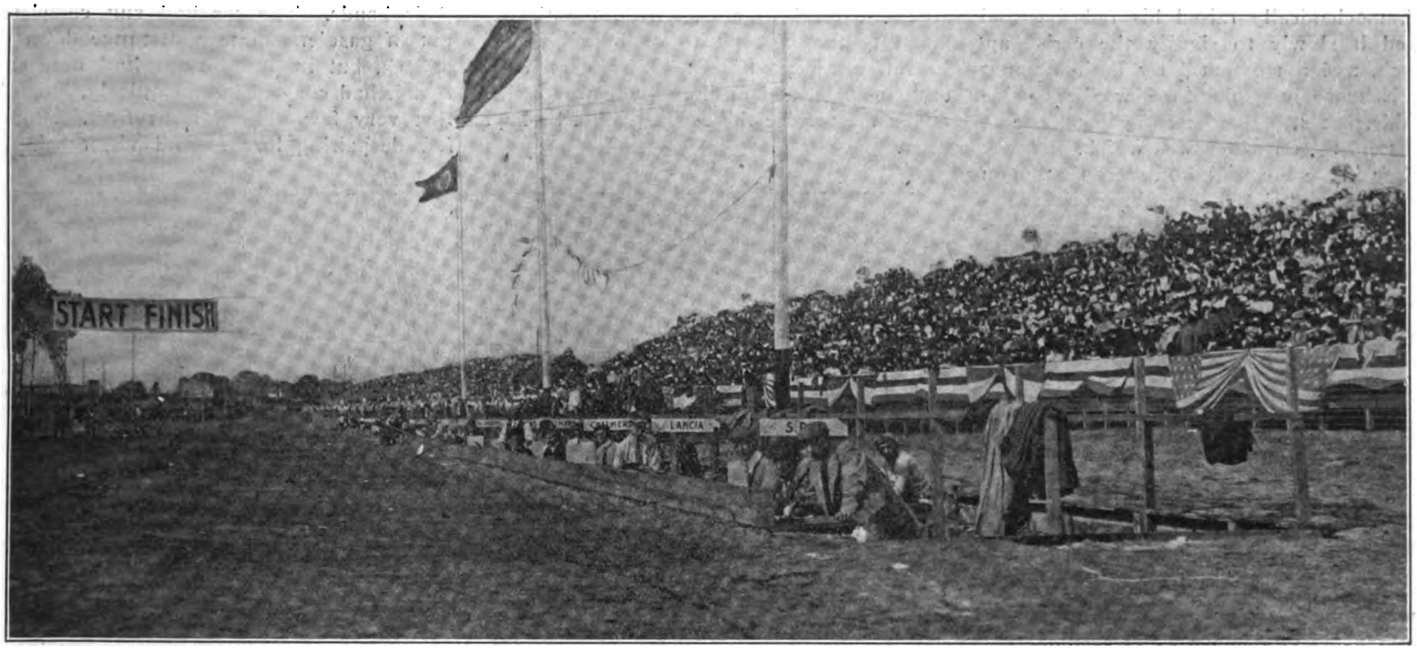
The gay spirited Duray on his eleventh lap suffered an accident which a driver of less courage would have felt entitled him to retire. The chain on the right side of his No. 9 De Dietrich snapped, whipping a great gash in his arm. He managed to control the car until his mechanic could take the wheel and bring the machine to a standstill. The spurting blood was stopped and Duray's arm bound up as well as could be done on the road. The mechanic then fixed the chain and drove to the stand, where he called for a doctor. Duray would not quit the race, and the physicians fixed him up with temporary dressing and bandages. He called for haste, more haste, and as soon as possible jumped into his car again, the mechanic taking the wheel for the time being until Duray should feel able to drive. His stout courage won him a big ovation as he set out once more.

The battle between Nazzaro, Hemery and Wagner, with Hanriot ready to participate,



KELSEY, MAXWELL, AWAITING THE WORD "GO"

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"CAR COMING!" VIEW OF THE CROWDED GRANDSTAND

grew desperate. With Nazzaro leading in the thirteenth, Hemery wrested second place from Wagner, the latter's stop helping to this result, although Hemery himself had had road difficulty, which had slowed him somewhat. Hanriot was fourth, with Hautvast in the No. 13 Clement-Bayard fifth.

The stands became packed with spectators again, to see the final struggle. Strang, Fournier and Rigal, while obviously no possibilities for first place, were fighting each other for sixth, seventh and eighth places, Strang driving hard from the last position.

In the fourteenth lap it was again Nazzaro, Hemery and Wagner, with but 29 seconds difference in time between the last two. In the fifteenth lap Nazzaro still led, with Hemery 1 minute and 52 seconds behind, and Wagner only 2 seconds after.

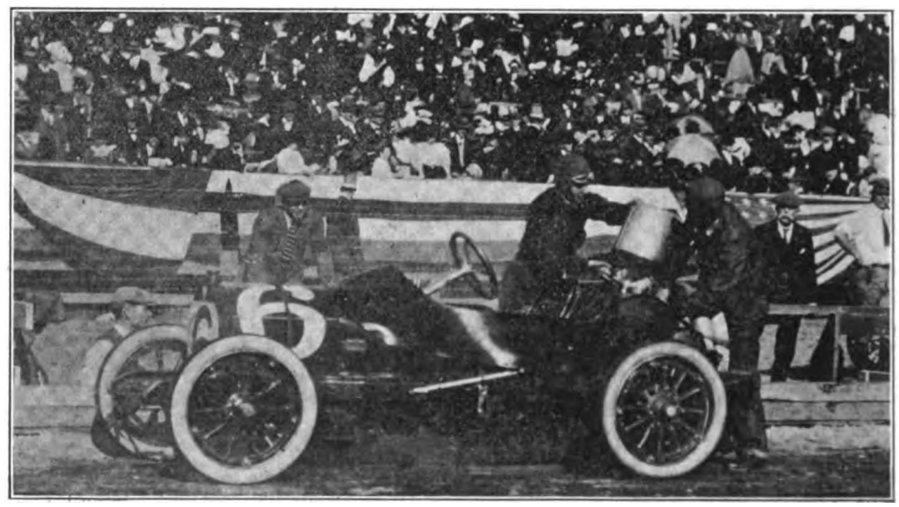
Coming down the stretch on the end of the fifteenth and the start of the sixteenth lap, Nazzaro, with dust begrimmed face but graceful and easy as ever, was running wide open, the signals at the pit giving him the flash that he was in the first position. De Palma's No. 18 Fiat came to a stop before the pits, to fix a tire. It got under way again just as Hemery was seen coming into the stretch, preceded by Strang, who was finishing his fourteenth. Because of the dust which Strang's Renault and the No. 18 Fiat were raising, Hemery had his circular dust screen up, attached at an angle to his steering post. His stocky shoulders hunched up, and his head bent sidewise behind the screen on his wheel as he tore through the dust without goggles, he looked the "speed demon" that he is, when fighting out a race. In due time, Wagner appeared for his last lap, too, with his engine singing in its highest key.

Nazzaro's victory was almost certain—unless something happened to his tires or mechanism.

"Hemery has passed Nazzaro!"

The message gave no further information, and the men at the telephone could get nothing more for the time being. E. Rand Hollander, of the Fiat camp, pleaded for details or a denial, or a substantiation, or something—anything! But his dismay and anxiety were unrelieved. The crowd could hardly believe the news. And then the surprise of it rather elated them and they strained their eyes down the stretch to watch for Hemery's coming to prove it. Each car that hove in sight set the watchers agog, but it was not until some of the tail-enders had passed that Hemery himself came into sight. On he came, a grin on his face and his mechanic waving both feet out of the car as a token of triumph. As he rushed over the line, the grandstand burst into one tremendous cheer, hailing him as the winner, while the Benz crew in the pits joyously flourished a big figure "1" to tell him of his victory.

The Fiat camp was very glum during the excitement, until it was recalled that Wagner had been only 2 seconds behind Hemery in elapsed time on the previous lap and still had 6 minutes in which to finish the winner, Hemery having started as No. 8 and Wagner as No. 14. This recollection came to the crowd, too, and everybody hastened to explain to his neighbor that Wagner still might win. Every one that had a stop watch took it out and started it, attempting meanwhile to estimate how many seconds back it was that Hemery finished. The owners of field glasses and binoculars called imperiously for their return, if by chance others had them, and every face was turned toward the distant point where Wagner would first come into view. The farthest flagman, after a seemingly interminable pe-



POOLE, ISOTTA, REPLENISHING AT GRANDSTAND.

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riod, mechanically raised his red flag and waved it slowly to signify the car's approach, and a moment later both Wagner and Nazzaro jumped into view almost side by side, but still too far away for those at the stand to tell which was which.

They came so fast, however, that soon the white-painted "14" on Wagner's radiator showed him to be in front, the car swaying terrifically because of its speed. Before the spectators could even cheer he had swept over the line, Nazzaro at his heels, sure of third place.

"Wagner wins! Wagner wins!" cried some of the amateur timers, but nobody knew for a certainty, and while waiting for the official announcement most of the spectators simply gasped with excitement, or marvelled with their companions that there could ever be an automobile race of 400 miles that would be so close in the finish.

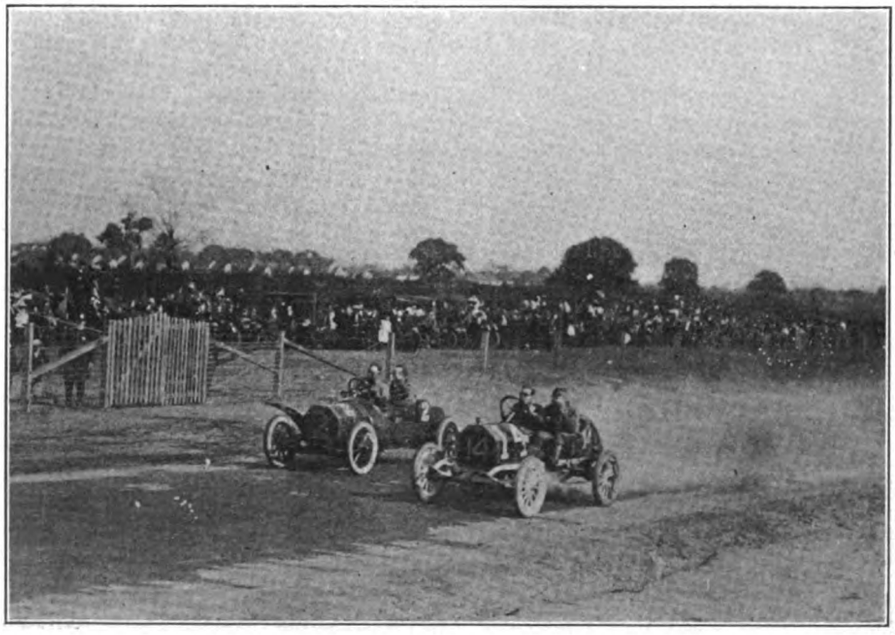
Hollander's pleadings to the timers to know the result were soon rewarded by a nod that Wagner had really won, the time at first being announced as 14 seconds, but later corrected to 56 seconds. Again the cheering was taken up, the new victor getting a demonstration such as had a few minutes before been given Hemery.

No sharper contrast between the Savannah and the Vanderbilt races could be given than afforded at this moment. Instead of a rush of thousands of people and cars out on the course, such as takes place at the conclusion of the winning of a Vanderbilt cup race, the Savannah course was as clear as the street scene drop which the vaudevillians describe as "Alexandria, Va., on a busy day." There was not a person on it. Even M. Garibaldi Coltelletti, representative and delegate from the Automobile Club D'Italia, loaded down with decorations and credentials and looking the part all over, was stopped by an impassive policeman when he tried to cross from the timers' stand to the Fiat pit to explode his exuberant congratulations. Other cars were still to finish, and until the race was called off by the referee the course would be kept clear.



HILLIARD'S LANCIA TAKING AN EASY TURN

During the chatter and tumult following Wagner's finish, most of the attention was directed beyond the line, looking for Wagner to return. Suddenly shouts of laughter and yells of encouragement went up when Hanriot's No. 15 Benz appeared before the grandstand with its motor silent and the car barely rolling toward the finish line, its two occupants humping back and forward together, trying to urge it along and shoving at the tops of the driving wheels with their hands. The car had run completely out of gasolene quite a distance down the stretch, but its momentum had been such that it had coasted in—so quietly, however, that very few noticed it at first. After a few despairing lurches and vigorous spats at the wheels, Hanriot and his driver found themselves over the line, the big machine coming to a standstill about four feet beyond the tape. The mingled laughter and cheers which were accorded the pair as they climbed out, met with a responsive grin from both driver and mechanic. Hanriot had landed fourth at the finish, and was satisfied.



HILLIARD AND EASTER ABREAST AT THE GRANDSTAND

Making his way back to the grandstand by an outsde road, Wagner shortly appeared at the Fiat camp. The discipline of the course was relaxed sufficiently to permit his car and himself being brought before the stand, where he was formally presented to the spectators as the winner, photographers and moving picture men busily training their batteries on him the while. The urbane Frenchman was given the congratulatory handshake by the governor of the state, the mayor and other officials, and went through it all with a smiling countenance despite the fatigue and physical soreness which the race had inflicted.

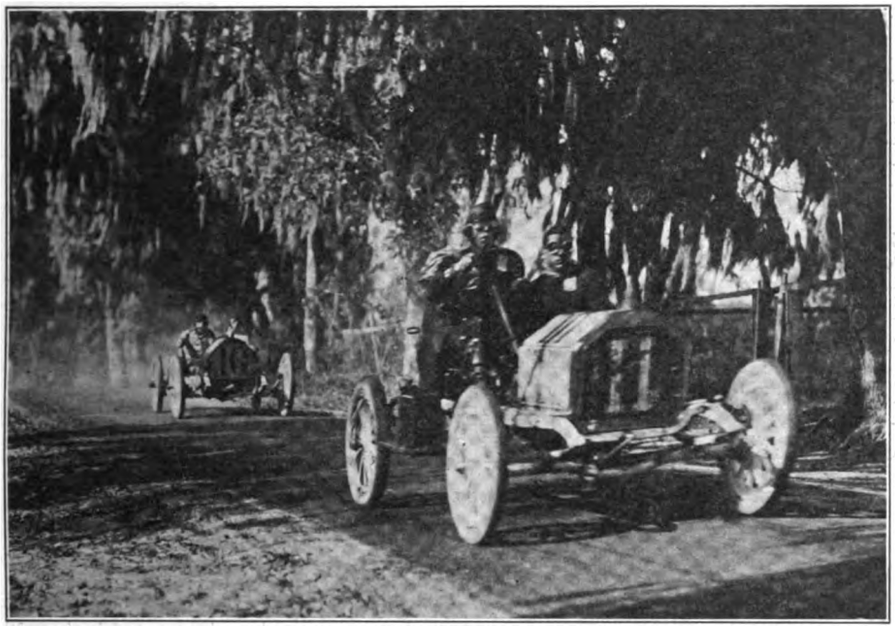
There were loud calls for Hemery, and the photographers and congratulators sought to lionize him also, but he declined to come forward, saying in French something to the effect that it was Wagner's victory and he should not be asked to "butt in," so to speak. He sat on the edge of the pits and turned his back on the "snapshot" men.

Hautvast, Strang, Rigal, Fournier and De Palma were allowed to finish, gaining places from fifth to ninth in the order given, and then the race was called off and the yellow flags waved around the course.

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Duray, again at the wheel, arrived at the stand and was flagged, after which he submitted to further treatment for the gaping wound in his arm, preliminary to going to the hospital. It was thought that no permanent ill effects would follow his injury.

Light Cars in Fast Contest



LORIMER IN CLOSE PURSUIT OF HEARNE

Seymour in the No. 3 Simplex had completed fourteen of the sixteen laps when the running was stopped, making the longest run of any of the American cars, and gaining a theoretical eleventh place.

Replying to eager inquiries, Nazzaro explained that one of his tires went bad during the last lap. He had used the one set throughout, and was not surprised that at least one of them should give way. He might still have made a replacement and come in a winner had not the new tire which he put on gone soft almost immediately, compelling him to stop again and make another change. His tires cost him 6 minutes altogether. When he stopped on the road he was surrounded by soldiers and others, who were anxious to assist him and whom he kept back with difficulty. It was even charged that when his jack sunk into the soft earth and he was trying to move his car and raise the wheels, that several people gave him a helpful lift. Numerous citizens asserted this to be the fact, with such positiveness that Herr Neumaier, of the Benz interests, later lodged a protest against Nazzaro's being awarded third place, on the ground that he had received outside assistance contrary to the rules. But at the official hearing Nazzaro denied the charge and explained his difficulty in keeping the crowd away, whereupon Neumaier promptly withdrew the protest. Rumors of a protest against Hanriot, alleging that his Benz received fuel elsewhere than at the one authorized supply station, were also in circulation, but were not followed by action of any kind.

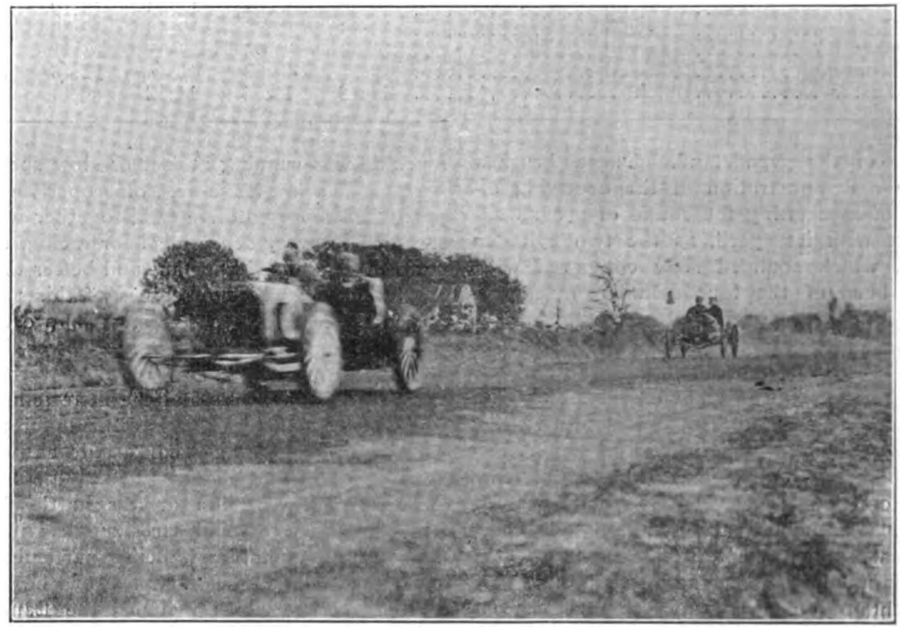
Serving as an appetizer for the big race, the light car contest on Wednesday attracted nearly everybody who had come to see the main event. Tickets to the grandstand had been sold on the basis of $3 for the two days, and those who had seats for Thanksgiving Day thus found that their coupons were good for the lesser event as well. As a result the stand was practically filled, but the roadside spectators were not overly numerous.

From a trade standpoint, the light car race was in many ways quite as interesting as the big race could be, as twelve of the fifteen contestants were of American makes enjoying more or less rivalry. The three foreign cars, too, by their presence indicated a trade tendency involving the effort to import small, medium price machines to bid for favor in the market against the domestic product. It was not a stock car race, however, which robbed it of some of the value it might have had as a comparative showing of well known models.

A smaller course than for the big race was used, being in the form of a rectangle 9.8 miles around, the cars being required to make 20 laps, or a total distance of 196 miles. The winner, a Lancia driven by Hilliard, covered the distance in 3 hours, 43 minutes, and 33 seconds, making an average speed of 52.6 miles per hour. The second car, a Buick driven by Burman, took 6 minutes and 12 seconds longer, while a Chalmers-Detroit won third place in 3 hours, 53 minutes, and 55 seconds.

Up to the tenth lap it looked like a walkaway for the specially built Buick, which had a 5 minute lead at that time, but a 9 minute delay put it back in second position and the Lancia was careful to keep it there. Examination of the record of the times later made it appear that the winning car had been held considerably below its speed possibilities during most of the laps, the driver preferring to open up only if it were necessary.

The short course brought the cars around with desirable frequency, sometimes three or four appearing together in the stretch and fighting their speed battles directly in



BURMAN AND CAMERON GLIDING TOWARD GRANDSTAND

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TABLE SHOWING ELAPSED TIMES IN LIGHT CAR RACE

No.	Driver.	Car.	H.P.	1	2	3	4	5	6	7	8	9
2	Hilliard	Lancia	12-18	11:43	22:25	34:16	45:32	56:55	68:15	79:32	91:15	102:14
8	Burman	Buick	18	10:58	21:52	32:43	43:31	54:30	65:12	76:01	86:55	97:51
10	Lorimer	Chalmers-Detroit	30	12:04	24:17	36:30	48:24	60:38	72:57	83:09	94:45	107:03
11	Hearne	Buick	18	11:48	23:35	35:20	47:26	59:17	72:03	82:41	94:16	105:27
6	Poole	Isotta	10	13:26	26:10	38:46	51:10	63:53	77:09	88:33	100:57	113:14
9	See	Maxwell	14	13:12	26:13	39:02	51:43	68:14	76:52	89:23	101:55	114:33
17	Kelsey	Maxwell	20	13:26	26:38	39:41	52:39	65:33	78:29	91:26	104:21	117:12
12	Costello	Maxwell	14	21:47	35:06	54:29	68:54	82:26	95:44	108:43	121:58	135:10
15	Muntweiler	Maxwell	20	13:17	26:22	39:16	52:12	64:14	77:59	90:44	103:28	115:54
14	Easter	Buick	18	11:54	23:16	95:00	106:16	117:33	128:41	139:51	150:57	162:04
3	Bergdoll	Chalmers-Detroit	30	13:08	25:51	38:07	49:08	62:28	76:07	88:31	102:35	126:42
5	Cameron	Cameron	18	14:10	25:20	36:27	47:28	66:27	Burned out clutch.			
16	Jeffers	Buick	18	12:02	23:10	173:54	Bent steering knuckle.					
1	Connors	S. P. O.	18	19:17	133:04	222:03	259:41	Out.				
13	Burns	Chalmers-Detroit	30	Ditched on first lap.								

No.	Driver.	Car.	10	11	12	13	14	15	16	17	18	19	20
2	Hilliard	Lancia	113:08	123:59	134:50	145:51	157:19	168:46	179:55	190:52	201:43	212:40	223:33
8	Burman	Buick	116:59	127:27	137:57	148:27	164:14	176:47	187:24	197:57	208:40	219:15	229:45
10	Lorimer	Chalmers-Detroit	117:41	130:41	142:23	153:01	164:03	174:59	186:30	199:13	212:01	222:44	233:55
11	Hearne	Buick	119:19	130:13	143:57	155:18	166:39	178:02	189:21	201:10	214:44	226:43	238:04
6	Poole	Isotta	125:38	138:06	150:35	162:50	176:48	189:28	201:50	214:11	226:37	239:00	251:22
9	See	Maxwell	127:16	139:46	153:53	166:33	179:52	194:00	208:03	220:26	232:53	245:14	258:38
17	Kelsey	Maxwell	130:55	144:48	157:32	170:27	183:17	196:10	208:58	221:55	234:55	247:56	260:44
12	Costello	Maxwell	154:45	165:45	178:50	191:55	205:06	221:09	234:26	247:44	261:07	*	
15	Muntweiler	Maxwell	128:23	140:44	181:22	223:08	235:51	255:55	*				
14	Easter	Buick	173:14	184:32	195:46	207:08	Ditched						
3	Bergdoll	Chalmers-Detroit	140:09	Out with valve trouble.									

* Running when race was called off.

TABLE SHOWING TIMES BY LAPS IN LIGHT CAR RACE

No.	Driver.	Car.	1	2	3	4	5	6	7	8	9	10
2	Hilliard	Lancia	11:43	10:42	11:51	11:16	11:23	11:50	11:17	11:43	10:59	10:54
8	Burman	Buick	10:58	10:54	10:52	10:58	10:59	10:42	10:49	10:54	10:56	19:08
10	Lorimer	Chalmers-Detroit	12:04	12:13	12:13	11:54	12:14	12:19	11:12	11:36	12:18	10:38
1	Hearne	Buick	11:48	11:49	11:45	12:06	11:51	12:46	10:38	11:35	11:11	13:52
6	Poole	Isotta	13:26	12:44	12:36	12:24	12:43	14:16	11:24	12:24	12:57	12:24
9	See	Maxwell	13:12	13:01	12:49	12:41	12:35	12:34	12:31	12:32	12:38	12:43
17	Kelsey	Maxwell	13:26	13:12	13:03	12:58	12:54	12:56	12:57	12:55	12:51	13:43
12	Costello	Maxwell	21:47	13:19	19:23	14:25	13:32	13:18	12:58	13:16	13:12	19:35
15	Muntweiler	Maxwell	13:17	13:05	12:54	12:56	12:02	13:45	12:55	12:44	12:26	12:29
14	Easter	Buick	11:54	11:22	71:44	11:16	11:17	11:08	11:10	11:06	11:07	11:10
3	Bergdoll	Chalmers-Detroit	13:08	12:43	12:16	11:01	13:20	13:39	12:24	14:04	14:07	13:27
5	Cameron	Cameron	14:10	11:10	11:07	11:01	18:59					
1	Conners	S. P. O.	19:17	113:48	88:59	37:37						
16	Jeffers	Buick	12:02	11:08	150:44							

No.	Driver.	Car.	11	12	13	14	15	16	17	18	19	20
2	Hilliard	Lancia	10:51	10:51	11:01	11:58	11:27	11:09	10:57	10:51	10:57	10:53
8	Burman	Buick	10:28	10:30	10:30	15:47	12:33	10:37	10:33	10:43	10:35	10:30
10	Lorimer	Chalmers-Detroit	13:00	11:42	10:38	11:02	10:56	11:31	12:43	12:48	10:43	11:11
11	Hearne	Buick	10:54	13:44	11:21	11:21	11:23	11:19	11:59	13:34	12:01	11:21
6	Poole	Isotta	12:28	12:29	12:15	13:58	12:40	12:22	12:21	12:26	12:23	12:22
9	See	Maxwell	12:30	16:07	12:43	13:19	14:08	14:03	12:23	12:27	12:21	13:14
17	Kelsey	Maxwell	13:53	12:44	12:55	12:50	12:53	12:48	12:17	13:00	13:01	12:48
12	Costello	Maxwell	11:02	13:03	13:05	13:11	16:03	13:17	13:18	13:23		
15	Muntweiler	Maxwell	12:21	40:38	41:46	12:43	20:04					
14	Easter	Buick	11:18	11:14	11:12							

front of the grandstand. These brushes gave a demonstration of the deceiving effect of associating the sound of a car's exhaust with its speed, as the two cylinder cars, which sounded slow compared with the buzz of the four cylinder machines, could be seen forging along quite as fast as their more rapidly pulsating rivals. This fact attracted almost general attention and precipitated many psychological discussions among the spectators on the deceptive elements of judging rate of travel by impressions received through the eye or ear. The phenomenon served to prove that accurate mechanical means are generally necessary to make any proper estimate of how fast a car is moving. Even the position of the occupants of a car was shown to affect the observer's unconscious estimate of whether a machine was running at fast or slow speed.

Having such a large field of properly prepared and representative cars, together with a course in every sense ideal for racing, the contest was more important and better than most races in which machines of this type are entered. The speed attained was worthy of cars of much greater size and power, but the spectators were so far removed from the path of the racers and the little fellows looked so small, that it was difficult for the crowd to develop more than a mild enthusiasm.

Most of the foreign drivers in the big race watched the small car struggle with a great show of interest, being particularly concerned about the fortunes of the imported entries, which included the Lancia, the Isotta and the S. P. O., which latter had been repaired just in time to start. It was Nazzaro himself, who in broken English sought a telegraph operator at the conclusion of the race, in order to send to Lancia in Italy a cablegram of congratulation signed by the drivers of whom he was once the team mate.

After wandering through the mazes of the wire fences, boarded pathways, turnstile gates and other devices for filtering the ticket holders into the proper channels and getting them to their seats, the first-time visitor at the Savannah course emerged from the lower caverns of the grandstand to a view of the long stretch of course in either direction. Under the brilliant sun the roadway glistened with oil, and looked so smooth and broad as to suggest almost unlimited possibilities for speed.

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Gathered in front of the stand were a fleet of spidery looking machines, most of which appeared to have red bodies and white wheels. Their drivers were in nearly all cases working away at adjustments and final preparations. Shortly before 11 o'clock the cars were swung into two lines, in numerical order, and Starter Wagner prepared to send them off. The No. 1 S. P. O., which on the previous Saturday had suffered an accident which resulted in the death of its mechanic, Marius De Rosa, and injury to Jean Juhasz, its driver, was at the head of the line. By hard work it had been put in running condition again, the work being completed only a few minutes before the start.



BURNS WRECKED

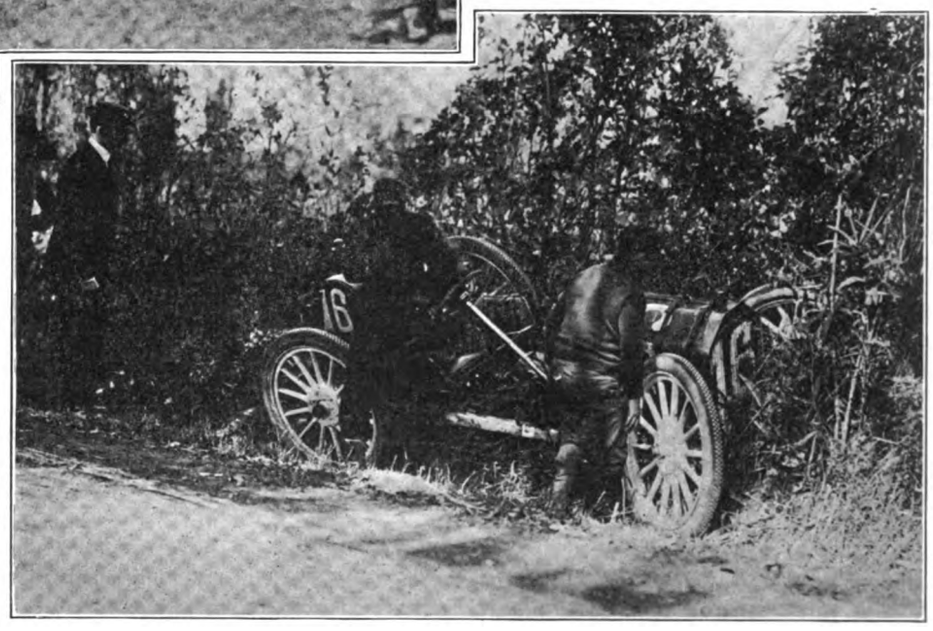
At half-minute intervals the cars were released, there being a lively racket of running motors, from the light hum of the "Baby Isotta," with its four tiny 2⅝-inch cylinders to the loud reports of the 5-inch two cylinder Maxwell engines. Following the S. P. O. came the No. 2 Lancia, which glided away very quietly, with muffled exhaust. The first American car was the No. 3 Chalmers-Detroit, driven by Louis J. Bergdoll, of Philadelphia, a millionaire through the brewing business and an automobile dealer and driver by inclination. There was a one-minute wait before the No. 5 Cameron, the only air cooled car in the race, was sent away. K. R. Manville, whose "American Aristocrat" had been assigned No. 4, had sent word that his speaiclly designed machine would not start.

When the "Baby Isotta," No. 6, driven by Al Poole, came to the line there was much amused interest in its high pitched engine sound and its low body lines, but it went singing up the course in pursuit of the others in a very business-like way. The No. 7 Gregoire, which Robertson was to have driven, having been withdrawn, Burman's No. 8 Buick was next, its underslung suspension making the wheels seem very big and giving the machine a racy appearance. No. 9 was Arthur See, in the first of the four Maxwells. Lorimer in a Chalmers-Detroit was No. 10, and another Buick, driven by Hearne, bore No. 11. The second Maxwell, a Chalmers-Detroit, a Buick, a Maxwell, another Buick and the last Maxwell completed the list.

First to appear in the stretch at the end of the initial lap was the Lancia No. 2, followed by Bergdoll's No. 3 Chalmers. Soon thereafter a car was seen coming at a surprisingly fast rate, and when it proved to be the No. 8 Buick the grandstand occupants set up a mighty cheer, as Burman had overtaken both the No. 5 Cameron and the No. 6 Isotta. The latter had gained on the Cameron, however, and crossed the line first. The remaining cars arrived in mixed order, the No. 1 among them, all but No. 13 Chalmers-Detroit completing the round. The hoodoo of its number had sent it into a tree at Montgomery cross roads, Burns, the driver, being slightly injured. He shed four teeth in the smash, but neither he nor his mechanic suffered serious results.

Again Hilliard in the No. 2 Lancia led over the line, with Burman's Buick right astern, having nosed out Bergdoll's No. 3 Chalmers which followed. The sight of three cars abreast coming at top speed in the stretch brought the onlookers to their feet. The "Baby" Issotta was in the center, flanked on one side by Hearne's No. 11 Buick and on the other by Lorimer's No. 10 Chalmers, both of the latter towering considerably above the infant in the center. Nevertheless, the little fellow asked no odds and gave them both a tussle. The No. 12 Maxwell, which had not finished its first round before the leaders had passed on the second, was again tardy, and the No. 1 S. P. O. was missing from the field.

By the beginning of the third lap the contestants were pretty well strung out, and in the fourth and fifth laps those in the forefront were worming their way through the ranks of the tail-enders of the previous rounds. At the end of the fifth lap, the Cameron drove up to the pits, and after its driver and mechanic had worked on it for some little time, the machine showed no signs of being in condition to resume, so it was wheeled out of the way. It was reported that the crank shaft was bent and the clutch burned out.



JEFFERS DITCHED

Patriotic joy was manifested by the enthusiasts in the grandstand when Burman's No. 8 Buick speeded ahead of the No. 2 Lancia in the stretch for the finish of the sixth lap. Yells and cheers encouraged the American car to leave the Italian product as far in the lurch as possible. In the seventh, eighth and ninth, the Buick still led, with the Lancia following next, but

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apparently losing ground. Only the No. 11 Buick, the No. 10 Chalmers and the "Baby" No. 6 were now able to count themselves as on the same lap with the leaders, all the others being one or more laps behind.

No Buick preceded Hilliard's Lancia on the tenth round, the car purring along in happy fashion all by itself. The lead of five minutes which the Buick had enjoyed was lost, and not until about seven minutes later did it appear, having taken 19:08 for the round as against 10:42 for its best previous lap. A lost rod nut had made it necessary for Burman to stop. The Lancia's net time showed an advantage of about four minutes.

For the next three rounds Burman set a furious pace, going faster than before, in his efforts to overhaul Hilliard, but in the fourteenth round he got another setback, in a stop which required a full five minutes. His fifteenth lap was slow, also, so that for the fourteenth, fifteenth and sixteenth rounds the No. 10 Chalmers, driven by Lorimer, was in second position, in point of time. The seventeenth lap brought Burman back to second place again, however, but although he drove to the limit of his car, finishing with a broken spring and a gasolene tank so loose the mechanic had to hold it in position, he was unable to get even a peep at the flying Lancia until the race was over. The Chalmers resumed its third position, which it did not relinquish.

From the twelfth lap to the finish, the relative positions of the five cars following the No. 10 Chalmers were unchanged. Hearne in the No. 11 Buick was unable to pass the Chalmers in spite of a hard fight and was kept in fourth place; Poole in the "Baby" Isotta held fifth from as far back as the eighth lap; See, in the No. 9 Maxwell, maintained sixth from the same point; Kelsey, in the No. 17 Maxwell, stuck to seventh, and Costello, in the No. 12 Maxwell, was in eighth place, until the race was called off.

Hilliard made only one stop during the whole 20 laps. He halted a moment before the grandstand to let his mechanic grab two cans of oil from the pits and rush back to the car, when he started off again. The mechanic was seen to take the cap off the oil tank and begin pouring in oil while the machine was gaining its full speed. Bergdoll in the No. 3 Chalmers got in the habit of stopping at the pit almost every round. His leisurely, millionaire manner of climbing out and deciding what it was he wanted to do, occasioned considerable humorous comment. After several stops he seemed to become enamored of the place, and could not be coaxed to start out again.

At about the middle of the race, Jeffers's No. 16 Buick, which had failed to come around after the second lap, made its appearance in the stretch, but running slowly with its two front wheels wobbling uncertainly. In the car the mechanic was holding up a badly bent cross rod of the steering mechanism, a makeshift substitute having been installed so that the machine could get back to the grandstand. The machine had gone off the road into the bushes, but without injury to its occupants.

By far the most serious accident of the day occurred to the No. 14 Buick on its fourteenth lap, as the car was rounding one of the sharp, banked turns on Estill avenue. The right rear wheel came off, sending the machine over the bank into the deep ditch. The driver, Hugh Easter, was no more than badly bruised, but his mechanic, Frank A. Thompson, was hurled into the road, where he rolled over and over after a long slide. He was picked up for dead, but medical treatment brought him back to consciousness before a great while. His injuries were serious, but not dangerous.

Other cars shed tires and cut a few minor capers, but ten of the fifteen were running when the yellow flags went up, although the No. 1 S. P. O., which insisted upon being counted as among those present, had only completed about four laps. The No. 15 Maxwell, driven by Munweiler, claimed ninth place, having made fifteen laps and being on its sixteenth.

When the official time for the first seven cars had been taken, and the race was announced as over, there was a lively rush on the part of the spectators to get back to the center of town, where restaurants could be found, as many had fasted since morning. The winning car was put on exhibition in front of the De Soto Hotel, where it was surrounded by large crowds until midnight. Meanwhile, the stolid negro convicts were put at work, repairing the course for the big event next day.

Fritz Erle, the unfortunate driver of the No. 19 Benz, built his own racing machine. He is a designer in the Mannheim factory and knows the Benz as no other driver can. With his own hands he assembled the car which he drove in the Grand Prize contest, and until the loose non-skid tread of his tire knocked him senseless, was well in front.

To reach the steamers which brought many New Yorkers and their machines to Savannah, it was necessary to cross the cotton wharves, where countless thousands of cotton bales are piled and where to be caught with a lighted cigar or cigarette means summary arrest. The police were kept busy warning visitors as to the regulations. Nevertheless, a dangerous conflagration was started on the wharves when some forty cars were driven to the docks for loading on the steamers after the race. One of the drivers lighted his lamps and threw the match on the ground where there was a pool of gasolene drippings. Oddly enough the owner of the car happened to be an insurance man. By a wise provision the Marten fire patrol had accompanied the cars, and one of its chemical tanks promptly extinguished the flames. The contemplation of the fire horror possibilities of the cotton wharves which the incident provoked resulted in the motorists taking extra precautions thereafter.

Had they really represented any papers, two press-stand victims of Military Commander Major William B. Stephens would have made that autocratic gentleman suffer for the abrupt and uncompromising manner in which he gave them the lash of his rigid discipline. After the shock of their encounter with him was over they filled the press stand with their wails, calling upon the gods to witness in Stephens the worst ever, and threatening to make him squirm when they should "hand it to him" in their dispatches to the "War Cry" and the "Police Gazette," respectively.

The unhappy sufferers were "Ned" Broadwell, of the Fisk Rubber Co., and L. D. Rockwell, the Metropolitan representative of the Standard Welding Co., both of whom were adorned with press badges as the representatives of a mythical "Michigan Syndicate, of Detroit." Their passes to cross the course limited them to the path from the grandstand to the press box, but their hasty reading of the wording construed a larger liberty, in fancied possession of which they wandered a-down the course beyond the dead line which the police and militia were maintaining.

They were promptly "nailed" and brought before the imperious major, who demanded that they give up their badges and get off the course altogether. To their first outburst of protest, he bellowed, "Not a word, or you go to the barracks!" The policeman who held them gripped a little more viciously, too, because unhappily he had been referred to as "this guy," when the protest was started, and the pair were distinctly "in bad" for the moment. Their personal friend, Robert Lee Morrell, the referee, being close at hand, they looked to him for help, his contribution being a friendly "You are doing quite right, officer."

Rescue from other influential sources came to hand, however, just in time to save them from ignominious ejectment, and when the vindictive policeman released his grip they hastened to get into the press stand, to which they stuck till the race was over.

Motor Parkway Time Trials Off.

As might have been expected, the foreign and American drivers who participated in the Grand Prize race, will not be seen in any series of time trials on the Long Island Motor Parkway, as had been planned before the Savannah event took place. The date set for the short distance speed trials, which were to be held under the auspices of the Long Island Motor Parkway Inc., was December 5, but inasmuch as the foreign cars were brought here with the understanding that they should participate in no other race than the Grand Prize, the time trials have been abandoned.

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BARS CIRCULAR TRACK RACING

A. A. A. Resolves to Discountenance Speed Contests on Short Courses—Proceedings at the Annual Meeting.

After prolonged deliberation lasting over two years the American Automobile Association has added one more proud distinction to its diadem by solemnly condemning automobile speed contests on circular tracks built for horse racing and of a mile or less in length, and declaring that it will have nothing whatever to do with them in future. By this means the question of whether or not races shall continue to be held over circular tracks is left discreetly to promoters of such contests who may choose between abandoning them or braving the mild taint of outlawry at the hands of the governing body.

The passage of resolutions endorsing this action was the most important feature of the sixth annual meeting of the association, held Monday last, 30th ult., at the national headquarters, New York City. Two protracted sessions were held; the morning one being that of the outgoing directors, and the afternoon a preliminary meeting of the the new board that took office on December 1. Both gatherings were largely attended; that in the afternoon including forty representatives of as many affiliated clubs. The anti-track racing resolution which was adopted after a prolonged discussion, is as follows:

Whereas, Automobile speed contests on circular tracks built for horse racing has ceased to serve any useful purpose; and whereas, such contests do not have the approval of the general public or any considerable portion thereof; be it

"Resolved, That speed contests by automobiles on circular tracks built for horse racing and of a mile or less in length be condemned by this Association; and be it

"Resolved, That hereafter this Association have nothing whatever to do with such contests."

In order to start "a binding force between the national body of individual motorists," as the Board of Directors terms it, the publication of a monthly official journal, is contemplated. The matter has been placed in the hands of a temporary publications committee.

Secretary Elliott's report was filled with statistics that showed among other things, that only 24 sanctions for track contests had been granted during the past year, as against 52 in 1907, while on the other hand 20 sanctions were granted for hill-climbs against 5 of the previous year. No data as to the number of unsanctioned or "outlaw" meets was presented.

In the matter of membership, the report boasted 25 state associations as compared with 16 a year ago and 187 clubs numbering 20,000 members, against the 1907 list of 132 clubs of 17,000. Practically all of the northern states with the exception of Maine, New Hampshire and Iowa are now federated into state associations. Similar associations exist in California, Colorado and Oklahoma, while movements looking to state bodies are already under way in Iowa, Arkansas, Montana, North and South Dakota, Washington, Oregon, Louisiana and several other states.

President Hotchkiss' bulky valedictory touched upon the vital subjects of affiliation, otherwise the "national idea;" the growth in membership; and the leading events of the past year. Among them were cited: The good roads convention held at Buffalo last July; the practical endorsement by the National Grange of the legislative program of the Association; the decrease in track racing and increase of hill-climbing contests and the reciprocal relations established between the A. A. A. and the Motor Union of England, Automobile Association of London and the Touring Club of France in the matter of touring facilities. He concluded with a hearty tribute to the score or more of active men who had co-operated with him in his administration, saying that in the lfe-long friendships whch he had made, lay the compensaton for his work while in office.

Denver Climb Now Set for December 5.

December 5 is the date to which the Denver (Col.) Motor Club's hill climbing contest originally set for November 21, has been postponed. Lookout Mountain is to be the scene of the competition and as the course is nearly three miles in length and includes a maximum grade of 21 per cent. for a good part of the way, the Denverites expect to see a rather strenuous contest. The festest cars in each class will be declared winners, without resorting to high mathematics, piston area not entering into consideration.

New Date for Worcester Endurance Run.

The reliability and endurance contest of the Worcester (Mass.) Automobile Club, originally scheduled for December 8, has been postponed to Saturday, December 12. The exact route has not been decided upon as yet, but will be for a distance of about 200 miles, over five 40-mile trips radiating from Worcester as a center. Stringent rules will be maintained and at the close of the run a technical committee will examine minutely each "perfect score" car in order to determine the winner.

Oldfield Troupe to Perform at Tanforan.

Oldfield, Christie & Soules, star performers, will make their Pacific Coast debut on Saturday and Sunday, December 5 and 6, at Tanforan Park, San Francisco, Cal., where they will present their high class hippodrome act. The track meet will be under the auspices of the Automobile Dealers' Association.

HOTCHKISS AGAIN HEADS A. A. A.

Elliott Re-elected Secretary—Other Officers Chosen, Chairmen Appointed and Executive Committee Named.

After repeatedly declaring that he would not run again for office, Judge William H. Hotchkiss, of Buffalo, changed his mind at the meeting of the directors of the American Automobile Association yesterday (Wednesday), and was re-elected president. The other officers chosen for the ensuing year are: First vice-president, Lewis R. Speare, of Boston, Mass.; second vice-president, Ira M. Cobe, Chicago, Ill.; third vice-president, Frank M. Joyce, Minneapolis, Minn.; treasurer, H. A. Bonnell, East Orange, N. J.; Frederick H. Elliott being re-elected secretary.

Chairmen of the following boards were immediately announced by President Hotchkiss: Legislative board, Charles T. Terry, New York; Good Roads board, C. Gordon Neff, Cincinnati, O.; Contest board, F. B. Hower, Buffalo, N. Y.; Touring Information board, Powell C. Evans, Philadelphia. The following executive committee, in addition to the president, first-vice-president, secretary and treasurer and board chairmen, was named:

S. A. Miles, New York; H. O. Smith, Indianapolis, Ind.; William E. Metzger, Detroit, Mich.; Oliver A. Quayle, Albany, N. Y.; Paul C. Wolff, Pittsburg, Pa.; W. C. Crosby, East Orange, N. J.; James T. Drought, Milwaukee, Wis.; C. H. Gillette, Hartford, Conn.; Frank G. Webb., Brooklyn, N. Y.; Frank M. Joyce, Minneapolis, Minn.; J. P. Coghlin, Worcester, Mass.; L. E. Myers, Chicago, Ill.; Edwin S. George, Detroit, Mich.; John Bancroft, Wilmington, Del.; L. J. Powers, Jr., Springfield, Mass., and H. M. Rowe, Baltimore, Md.

In line with the policy announced some time since, the A. A. A. practically washed its hands of racing altogether by doing away with the racing board and vesting the functions of this committee in the contest board, of which Frank B. Hower, the czar of the last two Glidden tours, is chairman.

Denmark Limits Motoring at Night.

Danish motorists are considerably aroused over the provisions of an automobile law which recently came into force and which it is hoped to revise by a bill to be introduced into the Rigsdag before the end of 1909. The unpopular provision includes among other clauses a prohibition to drive at night except along roads entirely illuminated, from half an hour before sunset until half an hour before sunrise, and from August 15th to May 1st, inclusive. The speed limits are fixed at two Danish miles per hour for Copenhagen, which amounts to something like 9 English miles an hour, and in the open country at 4 Danish miles.

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RATING BY THE CYLINDER VOLUME

Riker Advocates Limitation of Stroke as Well as Bore—He Shows Disadvantages of the International Rule.

In explanation of the appearance abroad of a considerable number of "long stroke" engines as well as in some measure of defense of the method of rating adopted some time since by the Mechanical Branch of the Licensed Association of Automobile Manufacturers, Andrew L. Riker, its president, and also designer of the Locomobile winner of the recent Vanderbilt contest, has issued a statement dealing with rating in general and with the A. L. A. M. formula in particular. In this connection he also points out the inevitable trend which must follow the general adoption of the new definition which has been established by the European clubs of abnormally long stroke dimensions, which, he predicts, will be of practically no use for other than racing purposes.

"It is useless to expect that any large body of designers will ever be thoroughly in accord on any subject involving so many opportunities for detail differences as motor design," says Riker; "though years of experience have resulted in evolving a type of construction followed so closely in such a large number of instances as to warrant being termed current practice in this respect. . . . .

"The point might be made that a few of the racers built abroad for the 1908 season did not have abnormally long strokes. It is reported that the winner of the Grand Prix had cylinders of 6.09 inchs bore and of 6.69 inches stroke. But it must be considered that a 6.1 bore is large, a real racing dimension in itself; and in this case it was not found necessary to lengthen the stroke very much. Now for 1909 the bore is greatly reduced and in order to make a fast car, the designer is almost certain to build a very long stroke motor, like in the cars in the 4-inch race in England, or the voiturette race in France.

"What is to-day the position of the American manufacturer who has a desire to build a car that can win the Grand Prix of 1909? Simply this. He must build for racing purposes only, one or more freak cars. He cannot compete successfully with the foreigners unless he does. If he does not lengthen the motor stroke to some absurd length, his cars will not have the speed of the foreign cars; he will not be racing on equal terms with them, and will be beaten.

"Is it too late to gain a reversal of the rule? If the cylinder volume instead of the bore only, could be limited, it is certain that a large number of splendid fast American racers would be built and their performance prove the mettle of the American designer in a more impressive and conclusive manner than ever before. The present situation is more than unsatisfactory, but if it can be explained and thoroughly understood, that much at least will have been accomplished.

"There is obviously only one accurate way of determining the effective horsepower of any particular engine, and that is to try it on the brake. For the purpose of a general rating formula, an approximation, the only thing possible as well as sine qua non, will suffice. Owing to the many variable detail factors which affect the power developed by any engine, the whole subject is complex, and necessarily somewhat vague; and in one way, as evidenced by the views of people of varying experiences, experts, et al., controversy thereon is interminable.

"The A. L. A. M. horsepower formula was adopted after much consideration by, and the almost unanimous opinion of, the Association engineers. And I have been continually gratified by its adoption. Various bases for a standard rating were considered. Finally a formal vote of all the engineers was taken on the question of what is a fair conservative rating for a given size four cycle (single acting) motor at a given piston speed. One thousand feet per minute had previously been agreed upon as a proper piston speed to assume. The average view was so nearly in accord with the results of the formula theretofore adopted by the Royal Automobile Club of England (the diameter of the piston squared, multiplied by the number of cylinders, divided by the constant two and one-half, equals horsepower), that it was decided to adopt this formula; conforming to an existing standard, so avoiding further confusion in a subject it was sought to clarify. Superficial critics of this formula at times fail to bear in mind that the application of the formula recommended by the Association of Licensed Automobile Manufacturers, is based on one thousand feet per minute piston speed. Neither ought to be necessary to point out that a motor developing on the block, 33 per cent. more than the required power by the formula, is no occasion for surprise; it is looked for.

"The A. L. A. M. horsepower formula was not intended primarily to be used in racing, but there is no reason why it, or an analogous principle, cannot be used equally well as a basis of contests of any character. We see in the recent 'four-inch' race in England, in the decision to limit only the engine bore of cars entered in international racing, and in specially costructed single cylinder racing cars abroad, a marked encouragement of cars which would never be built for touring purposes only. The obvious sensible way of limiting the power of a racing motor is to limit the cylinder volume and not the bore or the stroke alone. The limitation of the engine bore under the Grand Prix rules is very wise, but the stroke also should have been limited; for engine strokes of freakish length are the inevitable result. The amount of compression pressure should also come in for consideration.

"All racing cars built abroad for the season of 1908, by virtue of an international ruling, were restricted in design as to their cylinder bore. For the Grand Prix and other events, intended for large cars, the bore was 6.1 inches; for the English Isle of Man contest, the limitation was 4 inches —thus the name, "Four Inch Race.' Similarly the bore of the cars constructed for the small car race run on the day preceding the Grand Prix were restricted. In spite of these limitations the cars were speedy and notably high averages were made. In fact the average time made by the winner of the Brescia Circuit is a new record, faster work than has ever been accomplished before with a motor of unlimited bore and stroke. The Grand Prix was won at an average of 69.2 miles per hour; the voiturette race the day before the Grand Prix at an average of 50.02 miles per hour.

"At first thought it would appear that the tendency to limit the size of racing motors in this manner is admirable, but when a study is made of the strokes of the foreign racing cars of 1908, it would appear that many of the motors are in reality freaks, particularly when it is considered that the short stroke motor is gaining ground all the time and that a few years ago when the bore was unlimited, the foreign designers made the stroke short in preference.

"For 1909 the Europeans have decided to reduce the bore still further, from 6.1 inches to 5.1 inches. It was hoped that some limit would be placed on the stroke because the Automobile Club of America in reply to the request of the racing powers abroad, advised a classification by volume, a most sensible thing. The wisdom of this plan should be obvious to all; it not only places four and six cylinder motors in the same class, but it encourages rational motor design and the building of cars that will have a commercial value after the races are over. A four cylinder motor of 5.1 inches bore and a reasonable stroke, say six inches, is a very good size. A manufacturer could easily turn such a racing car into a stylish and speedy roadster with little trouble; the result would be a car containing all the value racing can offer in the way of experience; and instead of a freak, would be a new logical model, perfectly tested. Just what a 5.1-inch motor with an extravagantly long stroke would be good for after the racing season, with the rules changing every year, is difficult to see."

Advantages of Covers for Lamps.

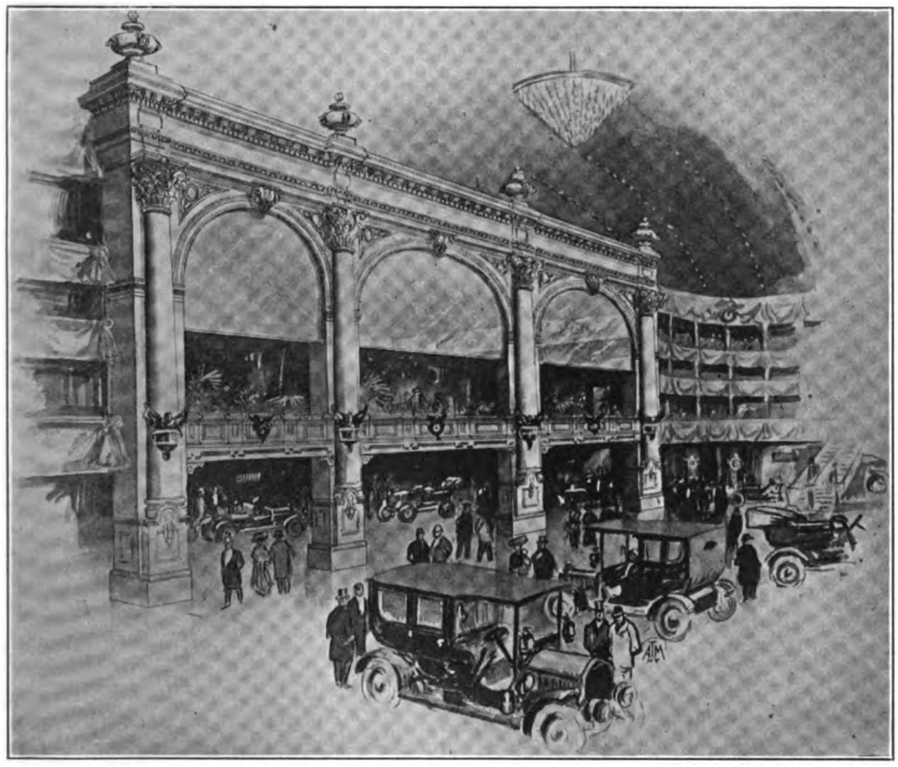
Aside from its advantage in preserving the polish of the exterior, the use of rubber or other protecting covers for dash and tail lamps is advisable since it tends to exclude mud and dust from the air outlets when the lamps are not in use. Otherwise they are liable to clog up with the result that the draught is very poor when they are lighted and considerable difficulty may be found.

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TRIUMPHAL ARCH FOR GARDEN

Decorative Scheme for the Show—Colossal Background that Apparently will Increase Area of Amphitheatre.

Like the elaborate "drop" which forms the background of a stage picture the decorative treatment of the Fourth avenue or rear end of Madison Square Garden always has been one of the chief cares of those who have arranged the settings for the various automobile shows which have graced that structure. Schemes embracing a wide variety of motives have been adopted and



TRIUMPHAL ARCH FOR THE GARDEN SHOW

marvelous as well as costly effects secured. That the range of possible variety has not yet been exhausted, however, will be proven beyond a doubt, when the doors of the vast arena are thrown open on January 16th upon the "Ninth National" show of the Association of Licensed Automobile Manufacturers. For this the most massive single piece ever introduced into the Garden will be utilized. It is to be a triumphal arch of colossal proportions which will occupy the entire end of the building, as shown by the picture.

Official figures as to the magnitude of the decoration give its height as 87 feet, and its total breadth as 48 feet. It will be supported by four Roman-Corinthian columns, each 3½ feet in diameter, one-fourth of each column being imbedded in the arch and three-fourths standing in free relief. Between the columns will be three bays, their arches just beneath the cornice and their bases at the balcony rail. In these bays will be massive plate glass mirrors, the center one twenty feet in width and each side one 19 feet across. These mirrors, being set at an angle with the tops inclining forward, will double the view of the whole interior of the main floor of the ampitheatre. On top of the arch, above each column, will be a huge decorative urn, while swinging on chains against the face of each column, at the balcony level, will be great bronze lamps, while liberal use will be made of smaller individual bulbs. The balcony face, which is all in plaster, will be set off by one of the "eagle-on-a-wheel" emblems, which will form an important part of the decorating scheme. This triumphal arch will be a sort of background and support to the whole decorative layout of the main floor of the Garden, the decorations in the foreground being subordinate to it in their height.

Statistics of the Olympia Show.

Final statistics of the Olympia show in London, which closed last Saturday, 21st ult., show that 525 vehicles were on exhibition including complete cars and the chassis of pleasure cars only. Of these 511 were gasolene propelled, 2 electrically and 12 were steamers. Eight foreign nations were represented in the products, the total foreign showing almost equaling that of the domestic product. The very general decline in the use of chain drives was shown by the fact that out of 140 stands, only 23 staged chain driven machines. The actual numbers of chain and shaft driven models were respectively 54 and 467.

PARIS SALON SHORN OF SPLENDOR

President Fallieres Rides Behind Horses to the Opening—Prominence of Light Chassis an Interesting Feature.

Perhaps it was significant of changing conditions in the Parisian capital that President Fallieres arrived at the Grand Palais in a horse drawn vehicle on Sunday morning last, instead of in an automobile. His visit was the occasion of the opening of the eleventh annual Salon, and the circumstances was widely commented upon. The ceremony of the official opening was attended with the usual pomp and pagentry.

Of the show as a whole, it is fully admitted that the former days of superlative grandeur have given way to a period of almost sombre economy. Among the decorations, from the embellishment of the Grand Palais itself, to the mountings of the individual exhibits, many of which are reproduced from last year, there is less of the flamboyant tone of former shows. The external decorations are concentrated at night upon the exhibition building itself, and the effect secured is at once novel and pleasing But the blaze of light which used to greet the visitor is no longer found.

Due both to the fact that there are fewer exhibitors than heretofore and that there is a dearth of startling developments, the show is further robbed of its old supremacy. Among mechanical achievements, practically the only mechanism of noteworthy significance is the Silent Knight engine which has been tentatively adopted by several of the European makers.

Whatever of "trend" is discernible from a hasty first glance at the exhibits leads to the impression that the annual buyer is being catered to more than ever before. Or, which is the same thing, that the vehicle of medium and low price has attained a vogue which is wholly without precedent. The light chassis of many of the old line makers are receiving due comment both for their excellence and the very fact of their existence. Two and four-cylinder models suitable for either runabout, touring or cab service are in great abundance. These, indeed, constitute the real feature of the show. Aside from these, however, several improved six-cylinder models are to be found, while for the limited field which is still discernible in the market for luxurious machines, the French body makers have outdone themselves in hitherto unequalled attractions.

In the field of accessories the flood of novelty and eccentricity appears to flow on unchecked, despite the unstable condition of the car building sections of the local industry. It is yet too early to compare this section of the show closely with corresponding portions of previous Salons, but the first impression is that it compares favorably with them.

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STEPPING TOWARD UNIFORM LAWS

New England Governors-Elect Derive Light from Boston Convention—Automobiles and Good Roads Discussed.

First fruits of the convention of governors held in Boston on Monday and Tuesday of last week, are expected in the form of recommendations from the respective governors-elect of the six New England states in connection with their inauguration speeches on January first. In common with the movement for universal state laws and the conservation of the natural resources of the country, which formed the chief topics of discussion the regulation of the highways and the control of automobile traffic came in for due consideration. The movement for a uniform enactment for the government of the motorist received a welcome impetus in this connection.

Among the definite requirements cited by the various speakers were: the abolition of speed traps, which were characterized as "local political affairs"; the appointment of state officers whose duty it shall be to regulate the speed of automobiles; a law requiring that all vehicles carry a light when on the road at night and the "taking off the road of the reckless and drunken operator."

Speaking of the imperative necessity of fostering the movement for improved highways, ex-Governor Batchelder, of New Hampshire, said:

"Whatever else is done to promote the mutual interests of the New England States, there must be established a system of interstate highways which will render the most remote districts accessible to tourists.

"The farmers believe that this is a purpose to which a part of the national revenues derived from taxes paid largely by them should properly be devoted, and they insist that the highways of the country are entitled to as much consideration as our waterways. They realize that the financial condition of many of the states will not permit of their making the large appropriations necessary to meet the urgent demand for better roads, and, therefore, are endeavoring to secure recognition of the principle that Congress should by legislation provide a part of the funds needed for road improvement.

"Closely allied to the question of good roads is that of the regulations governing the use of the highways by automobiles.

"The extent to which this right was disregarded by reckless drivers of automobiles, forced the farmers in self defense to seek legislation fixing the rate of speed of these vehicles."

Definite suggestions as to the requirements of a universal law were made by Francis Hurtubis, Jr., counsel for the automobile associations, speaking from the floor, who ventured the opinion that a uniform law suited to the general requirements of all could be constructed out of the best elements of laws already existant. He enunciated six cardinal principles as requisite to such a measure. First among these he placed the requirement for universal lights upon all vehicles.

Uniformity of the clauses relating to the operation of motor vehicles by non-residents of the respective states; the elimination of local restrictions in favor of the general law; the abolition of "traps"; the absolute control of all questions of the administration of the motor vehicle law by state officials, properly constituted, as for instance, the highway or road commissions; and the reduction of the speed laws to a uniform basis; were the other points he emphasized.

"My opinion is," he said, "that if each of the New England States were divided into a number of districts, each district in charge of a state police officer having under him one or two or more assistants, all mounted on motorcycles, whose duty it was to prevent fast or reckless driving in their respective districts, I believe the problem would be better solved than by a few towns establishing and working 'traps.'"

Formal addresses were made by Harold Parker, C. E., delegate to Paris International Congress on Roadbuilding, and chairman of Massachusetts highway commission, who spoke on "The Construction of Highways"; James H. MacDonald, president American Roadmakers' Association, and commissioner of highways of Connecticut, whose topic was "Trunk Lines of Highways for New England," and Nahum J. Batchelder, master of the National Grange, Patrons of Husbandry, and ex-Governor of New Hampshire, on "Automobiles and Their Regulation."

Restricting Vehicles on Yale Campus.

Yale campus is to bar automobiles during a large portion of each week. The new regulations provide that the college grounds at New Haven, Conn., shall not be open to machines except from 1 to 4 p. m., on Tuesdays and Thursdays, and from 10 a. m. to 1 p. m. on Saturdays. The restriction also applies to other vehicles as well, including milk and laundry wagons, express carts and the like. It was claimed that the constantly increasing traffic on the campus disturbed the students at their recitations.

Insurance Men May Bar Night Riding.

A clause to exempt the insurance companies from having to pay on automobile policies where the accidents occur between midnight and 6 a. m., is a recent proposal, due to the results of "joy riding" mishaps. A number of underwriters have prepared statistics on the subject and claim to find that a big percentage of the automobile accidents take place "at an hour when the daredevil spirit rages," which, more specifically, is after midnight.

ADAPTING TAR TO USE ON ROADS

Why It has Proved Injurious in Some Localities—Elimination of Soluble Elements a Necessity.

French prejudice against the use of tar is not shared by English road experts. It is thought that the baneful effects the tarring of Paris boulevards had on the neighboring trees and shrubs was due to the fact that the tar used had not been properly prepared to free it from its soluble components and that the latter, which are very harmful, washed out with the sprinklings and rains and attacked the roots of the surrounding vegetation.

On this point a British authority, Colonel Crompton, says: "Tar fresh from the gas works is totally unsuitable for using on the roads. It contains a proportion of soluble matter which may run off with the surface water and do considerable injury, even killing fish if it gets into streams. Then, too, the ordinary tar splashes and ruins dresses and fabrics. These facts have caused considerable prejudice against tar preparations among many land owners and country residents. Methods had to be found of removing the soluble matter without going to the other extreme and making the coating brittle. There are now various ways of doing this.

"The Roads Improvement Association's experiments showed that roads can be made dustless by applying one gallon of tar to every four superficial yards, costing about $200 a mile for an average road,. We found that satisfactory results could only be had by giving much heavier dressings than were formerly considered necessary.

"This tar dressing so adds to the wear-resisting qualities of the highway that so far as can be now seen it will more than repay its cost by the saving it effects in road maintenance. But it is not possible to speak finally on this point until the tarred roads have been laid down for a longer period."

Steamboat Aids in Hill Climbing.

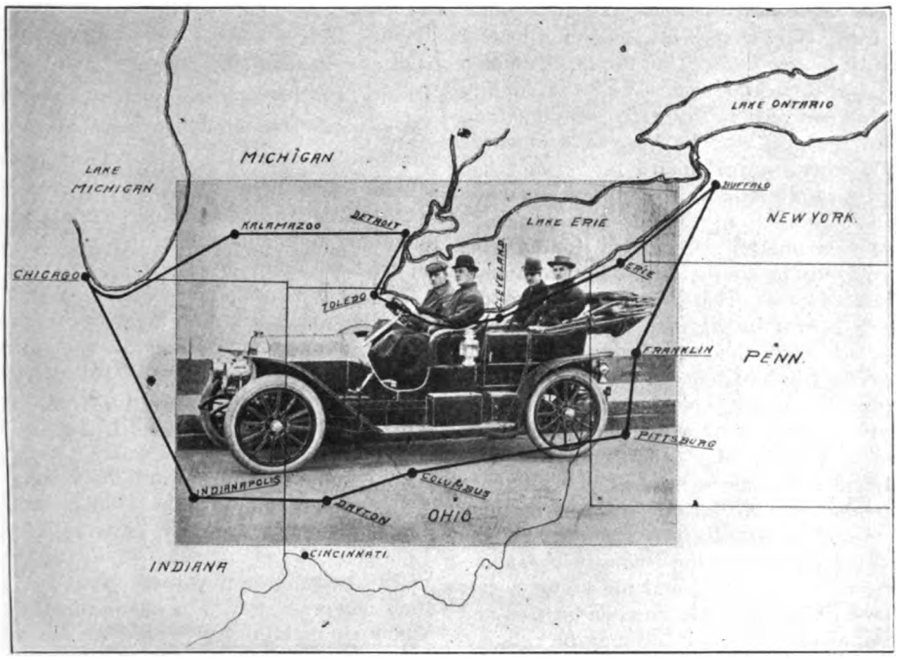
Assistance in difficulties is sometimes obtained from the most unusual sources, as was impressed upon a western motorist when his machine encountered a terrifically steep hill at Blueslide, Washington. The hill is one of the worst in the section, both in steepness and in the slippery condition of its surface. The car was unable to negotiate it, but the captain of a river steamer which was lying at the adjacent wharf came to the rescue. He fastened a tackle block at the top of the hill and attached a line to the touring car. The other end of the rope was wound around the steamboat's capstan, and all hands were piped to the fore deck. With a yee-ho the capstan was revolved and the motor car climbed.

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LONG TOUR AS A DEMONSTRATION

New Stoddard-Dayton Model Covers Route of 2,164 Miles—Traveling Exhibit Visits Cities in Five States.

One time, makers and agents were quite satisfied when a prospective customer could be given a demonstration run over local highways amounting to not over 10 or 15 miles, so long as it passed off without criticism. Changing conditions have brought about a situation in which, though the popularity of the agents' demonstration to the individual prospect is passing into more or less restricted status, the manufacturers' demonstration to his agents and to the public at large has attained a vast popularity. Thus by way of introducing the new Model "9 H" Stoddard-Dayton car, the Dayton Motor Car Co., in addition to placing their own demonstrators in the hands of their individual representatives, sends out its own traveling exhibit in the hands of a factory expert to a tour of a dozen cities or so, in five different states, and to the tune of somethink like 2,000 miles of travel over all sorts of roads.



STODDARD-DAYTON DEMONSTRATORS AND THEIR LONG ROUTE

The trip has just been completed, and as the accompanying picture shows, passed off without visible effect upon the car. The points covered were: Indianapolis, Chicago, Kalamazoo, Detroit, Toledo, Cleveland, Erie, Buffalo, Franklin, Pittsburg, Columbus and return to the Dayton home of the car. The total mileage of the trip, including side demonstration runs in several of the stopping places, amounted to just 2,164 miles. The total gasolene consumption for the journey amounted to 112 gallons, or an average of 19.36 miles per gallon, inclusive of all motor running. The car was absent from Dayton exactly one month.

Farmers Want Buggy Type Vehicle.

In what degree the automobile is supplanting horse drawn vehicles was the substance of the main question before the tenth annual convention of the Tri-State Vehicle and Implement Dealers Association, at Cincinnati, O., last week. Almost every dealer at the convention had ideas on the subject, and the consensus of opinion was that while the motor car is undoubtedly cutting into the sale of the larger vehicles, such as carriages, the demand for light buggies, runabouts and phaetons has not been affected. The delegates took up the matter of handling the small buggy type automobiles, and it was shown that farmers are taking very kindly to the machines and that the vehicle dealers will find it necessary to get into this field

To Prevent Screw Threads Rusting.

A mixture of graphite flake and grease applied to screw threads is frequently recommended as tending to prevent the adhesion of the parts due to rust or expansion from heat. Rather a novel recommendation in the same line is to the effect that mercurial ointment similarly applied serves an equally useful purpose. It was formerly employed in marine steam engine practice in cases where the parts of the piston were threaded together. Some such provision should be made on all brake and radius rod connections about the car and any other parts which, though occasionally requiring adjustment, are ordinarily left to themselves in all weathers.

ELECTRIC IN STRENUOUS TRY-OUT

Testing Tour from Lincoln to New York City Successfully Made—Mountain Roads Negotiated en Route.

No small achievement was marked by the arrival in New York City on Saturday last, 28th ult., of Oliver P. Fritchle, who left Lincoln, Neb., on November 1st, in an electric victoria of his own design, with which he made the entire journey of 1,800 miles. The tour, perhaps the longest ever attempted with an electric machine, was made partly with the object of selecting a suitable site for a factory to be erected for the manufacture of more of these cars, and partly to demonstrate that the electric automobile is practicable for long distance touring.

Fritchle is a chemist and electrician of Denver, Col., and the car has a maximum of about 10 horsepower, is geared so that it is capable of making 19 miles per hour under favorable road conditions and will travel 100 miles on one charge, although it is said to have covered as much as 125 miles at one stretch without replenishment in open country, and 150 on city streets. While the inventor proved that it was possible to drive his car a long distance, averaging between 70 and 90 miles a day, he doubts whether anyone other than an experienced electrical expert would have succeeded.

Leaving Lincoln, he set out direct for Pittsburg, Pa., pushing his way through miles of rugged Iowa roads. In Illinois he found conditions somewhat better and at Chicago, hit the trail of the 1907 Glidden tour. This meant the crossing of the Allegheny Mountains, and the Laurel and Blue Ridges that have proved difficult for gasolene cars more than once. In the latter part of the trip the route of last summer's Glidden tour was taken up and the run to New York made via Philadelphia—the last stretch on a single charge.

On the trip Fritchle was accompanied by W. P. Pfaff, of his firm at times, but as a rule the latter acted as the advance agent of the expedition, arranging for charging stops. According to the driver, only once on the whole 1,800 miles was it necessary for the car to be towed, and that was due to misdirections. This occurred in a remote section of Iowa, when he was within two miles of the charging station he was endeavoring to reach. Difficulty in obtaining "juice" was frequently encountered and on numerous occasions, Mr. Fritchle was obliged to do all the work of charging at lighting plants and power houses. In one Pennsylvania mining town, he even earned a fresh charge for his batteries by repairing the electric plant of a "nickelodeon." A remarkable feature of the trip was that it was made on a single set of Goodyear tires, and that but one puncture was encountered during the entire journey.

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THE CHARACTERISTICS OF BENZOL

Its Possibilities as Fuel for Internal Combustion Engines—Synopsis of Tests in Comparison with Gasolene.

Efforts to perfect the introduction of Benzol as a motor fuel abroad have thus far been about as successful as the attempts made in this country to popularize the use of denatured alcohol for the same purpose. Despite numerous tests and a reputed actual use of the fuel in practical ways to a limited extent, the majority of motorists and more particularly the automobile manufacturers still remain indifferent to the possibilities held out by this plentiful by-product. How great these possibilities are, as well as how improper carburation has led to an erroneous impression as to its properties as a fuel, is shown by M. A. Grebel, in a paper read before the Societe des Ingenieurs Civils de France, and also in a discussion of the relative merits of benzol and gasolene published in Le Genie Civil.

A condensed summary from these two sources shows that almost all benzol is produced as a by-product in the manufacture of coke, the process of extraction from the waste gases consisting of dissolving the crude benzol in heavy oils and later recovering it from the solution by distillation. It is then rectified by the removal of carbon bisulphide, tar, naphthaline, and other impurities, and a final purification is obtained by washing with acids, soda and other reagents. If the benzol is intended for use in automobile motors, this purification must be very carefully performed. If it is improperly carried out tarry products are left which interfere with the proper working of the carburetter and give rise to obnoxious and corrosive fumes. About five kilograms or 11 pounds of rectified benzol are recovered per ton of coal coked. In the present state of the industry, France, Germany, England and Belgium produce large quantities of benzol annually, but the amount could be largely increased in all countries.

The comparative physical properties of benzol and petrol, according to Grebel, are as follows:

	Benzol.	Gasolene.
Density	.885	.700
Calories per kilogram.		
Calorific power	10,033	11,464
Calories per litre.		
	8,879	8,025
Degrees C.		
Freezing point	—6 to —8	—100
	Grammes	
Quantities of fuel added 1 litre of air at 0 deg. C. and 760 mm.	.09615	.08434
	Cubic centimeters.	
for theoretically complete combustion	.10864	.1205
Degrees C.		
Vapor tension at 20 deg. C.	122	296
Temperature of boiling	81	50

The close similarity between benzol and petrol has been the cause of many disappointments and vexations. It has led to the belief that benzol could be simply substituted for gasolene without any difficulty, and it must be admitted that by accident certain motors have worked well for a time within certain narrow limits of speed. In cases where bad results have been obtained, however, they have been hastily and erroneously attributed to the fuel itself. Benzol, indeed, presents many points of similarity to gasolene, but it is distinguished from it by various characteristics, of which account must be taken in the design of carburetters and in the regulation of ignition.

The principal charge made against benzol is that it causes fouling, but the black smoke, the odor of burned gases and the fouling are due entirely to imperfect combustion. Grebel declares that he has made upwards of 200 tests on a Panhard motor and has never encountered any fouling except when testing a benzol only 50 per cent. pure. It is an easy matter to prevent fouling, because, in order that a deposit of soot may be formed, it is necessary that the proportion of benzol in the fuel should be raised to double that theoretically necessary for complete combustion. Many carburetters, however, make an explosive mixture imperfect to a degree that would be believed impossible without the striking evidence of analysis of the waste gases. The influence of the mixture on the efficiency of the benzol motor cannot be too strongly emphasized. Even when the exhaust gases are colorless and odorless and the motor seems to be working perfectly, the combustion and consequently the efficiency may be relatively poor.

The investigations referred to have shown that the minimum specific consumption corresponds to a percentage of carbon dioxide in the exhaust gases of 14 in the case of gasolene and 17 in the case of benzol, without excess of oxygen and without carbon monoxide. These are the highest percentages attainable in practice, though the theoretical percentages of complete combustion are 14 and 17.4, respectively. The maximum of power is found at about the point of maximum explosibility which corresponds to the highest explosive pressure. This is given by a mixture slightly richer in benzol than the mixture for theoretically complete combustion. With the mixture giving maximum power, about 1½ per cent. of carbon monoxide is found in the burned gases. In Grebel's tests the minimum of consumption has always been found to be attained when the air actually introduced bears to the air theoretically necessary the proportion of 1 to 1.1. This differs considerably from the proportion of 1.3 to 1.7 recommended some years ago by Sorel and adhered to by many builders through fear of the results of a shortage of air which possibly might occur under certain conditions.

LEANING TOWARD SHAFT DRIVE

Ferguson Finds a Strong Movement in This Direction in Foreign Factories—Plain Bearings Regaining Favor.

A continuance of the growth in the use of propeller shaft transmissions and a tendency among makers who have been using ball bearing crank shafts to return to the use of plain bearings for that purpose, are the two trends most marked in the foreign field just at present, according to David Ferguson, mechanical engineer of the George N. Pierce Co., who has just returned from a brief sojourn abroad. Ferguson visited the leading factories of England and France, and inspected the new models which the German and Italian makers are preparing for the market of 1909. The increased use of shaft drive, he notices in particular, while those who have abandoned chain drive show no disposition to return to that form of transmission.

"From present indications," he says, "not over two years will pass before every maker of any great prominence in Europe will have abandoned for good the chain drive and installed a shaft drive in all of his models. This movement is not confined to the makers of any one country, but is noticeable equally in England, France, Germany and Italy. Some manufacturers have confined the shaft drive to their new and usually lighter powered models, retaining practically their former construction for their high powered cars. The change to the shaft drive for their high powered cars is only a matter of a short time. Other makers, on the other hand, have made the change throughout their line at the same time. There has not been a single change from the shaft to the chain drive that I have heard of.

"The most prominent general tendency aside from the matter of final drive is the reversion to plain bearings. Several years ago two manufacturers, one French and the other German, both of whom stood high in their own countries, adopted ball bearings for the crank shaft. The outcome of their policy was watched with a great deal of interest by automobile makers throughout the world. This year marks the definite abandonment by them of their experiment and their return to plain bearings from one end of the crank shaft to the other.

"So far as actual business goes," he concludes, "the foreign manufacturers have had a rather dull twelve months, but affairs now appear to be in better shape and a number of factories are running at capacity."

"The A B C of Electricity" will aid you in understanding many things about ignition that may now seem hard of understanding. Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

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NOVELTY IN FOUR CYCLE TURBINE

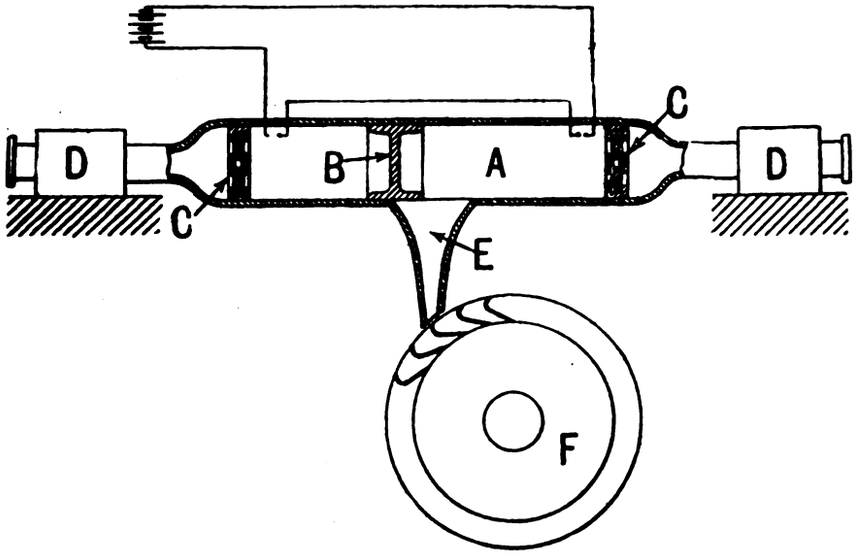
Young French Investigator Produces Design Utilizing Reciprocating Piston—Fresh Adaptation of an Old Idea.

Development of the gas turbine idea up to this time has produced comparatively few devices of noteworthy merit. Despite a considerable amount of effort along this tempting line, practically no systems have been produced which appear to promise much for the future, while many of the arrangements constitute what are actually embodiments of schemes which long ago saw the light in one form or another as intended for use with steam. The fact that the turbine principle introduces difficulties which are not met with in ordinary gas engine construction ordinarily, however, does not deter inventors from continuing their investigations, and happily they are continuing to produce results which though impracticable as it may seem just now are paving the way for later products which are likely to be granted a greater measure of success as the earlier efforts are used as stepping stones.

In this connection, considerable interest has been aroused in foreign circles by one of the latest productions of R. Esnault Pelterie, the young French investigator whose five and seven-cylinder V-shaped motors for aeronautical work are among the few "features" at the Paris Salon. His studies of the turbine principle have resulted in a design which, so far as is known, is absolutely novel, and which aside from its interesting qualities as aclever study, introduced several rather fruitful possibilities.

Roughly speaking, the scheme may be said to be that of the exhaust turbine employed as an adjunct to the reciprocating engine of the usual four-cycle type. Only in this instance, the reciprocating piston does no external work whatever, and is merely used to establish the action of the cycle, while its movement also serves to open communication between the outlet to the turbine and the two cylinders alternately. In this respect the system is unlike one which has received consideration before, in which the use of the turbine was intended merely as an adjunct to the reciprocating engine and as an economizer for the energy ordinarily going to waste through the exhaust.

The accompanying illustration is given by the Autocar as showing diagramatically the way in which the turbine action is secured without sacrificing the four-cycle principle. The engine construction comprises a very long cylinder, A, in which is mounted slidably a piston, B, free to reciprocate practically from one end to the other. Midway between the two ends of the cylinder is a port leading to a nozzle, E, which is placed in proper relative position to drive the turbine wheel, F. Obviously, the movement of the piston alternately opens the two ends of the cylinder to the nozzle. As each end of the cylinder is made to act as a separate cylinder, actuating a cycle in every respect similar to that of the common or Otto type of engine, it is evident that alternate blasts of burning gas are driven down against the turbine to perform work in driving it.



Two chambers, D, are used in carburetting the air as in the ordinary gas engine, and the charge enters the chamber at either end through the valves, C. The action is readily understood. As soon as a charge has been ignited by means of the ordinary jump spark, the piston is driven violently forward toward the other end of the cylinder, thereby compressing a charge of gas which already has been drawn into the combustion chamber. As the piston passes the central port, release occurs, and the charge is permitted to expand and escape into the turbine nozzle.

The manner in which the cycle is completed is rather intangible, but according to the patent specifications consists in inducting the fresh charges as a result of the formation of a partial vacuum behind the outgoing charges, brought about by the combined effect of its own inertia and the movement of the piston beyond the port. The effect secured in this way, therefore, is that of a very rapid succession of impulses, which probably permit the turbine casing to clear itself better and allows of a lower mean temperature in the blades than would be possible were the blast of hot gas continuous.

Safeguarding Control for Electrics.

With gasolene cars there is a big record of accidents resulting from the change gear lever being moved from neutral to engagement by meddlers while the car is left unattended, resulting in the machine's jumping forward when the engine is started unless the driver has been careful enough to examine the position of the lever, and similar accidents with electrics have followed where the control lever has been pushed to the high speed position in the operator's absence. Upon inserting the connection plug the person driving the machine would be surprised to find it dash forward on the instant. A woman was recently dragged some distance and knocked unconscious when she placed the plug in position preparatory to stepping into her runabout. While the vehicle was left at the curb, some sidewalk busybody had moved the control to the extreme notch and had left it that way. The machine ran away immediately the power circuit was closed by the plug, and after injuring its owner, smashed itself against a tree further down the street.

To provide against the possibility of such accidents, the controller on at least one make of electric vehicle, the Waverley, is so arranged that even after the circuit plug has been inserted, the machine will not start until the lever is brought back to the neutral position, so that it may be in any forward speed or the reverse at the time the plug is put in, without danger of an unexpected movement. A further feature of the control, showing the provision that is now made to protect against error or accident in electric vehicle operation, makes it impossible to change from high speed forward to high speed reverse. If the mechanism be shifted from one to the other with a rapid movement, the controller automatically shuts off the power, so that the change in direction must be begun on the low speed.

Care Needed in Selecting Oil.

The selection of tires, lamps, and in fact the general equipment of a car is carefully supervised by the owner, while when it comes to oil, the chauffeur is often given a free rein or the deciding factor is price rather than quality. The oil bill is probably one of the smallest items in the upkeep of a car, while upon its selection may depend the life of the engine.

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The Week's Patents.

897,099. Transmission Gear. Philip Hayward, Hanging Rock, Ohio. Filed March 6, 1908. Serial No. 419,445.

1. In a transmission gear, the combination of a driving shaft, gearing for connecting said driving shaft in operative relation to said driven shaft, a clutch for connecting said gearing with said driving shaft and disconnectng the same therefrom, a revoluble member mounted upon said driven shaft, a friction disc mounted upon said driving shaft and adapted to intermittently engage such revoluble member upon said driven shaft for the purpose of applying power directly thereto, and means controllable at will for throwing said clutch and friction disc into action alternately.

897,122. Spark Plug for Internal Combustion Engines. Henry C. Ter Meer, Summit, N. J. Filed March 27, 1908. Serial No. 423,722.

1. An electric ignition device comprising an outer insulator having a central opening throughout, an inner insulator of elongated form having within it an electrode and held within the opening of said outer insulator, the walls at the outer end of said opening converging, a binding post within the outer end of said opening and tapered to conform to the walls thereof, and a binding nut on the exposed threaded end of the post for securing the same in position; substantially as set forth.

897,151. Pneumatic Tire. Walter C. Rocheleau and Louis T. Rocheleau, Woonsocket, R. I. Filed March 2, 1907. Serial No. 360,165.

A pneumatic tire comprising a covering, a layer of tough material arranged against the inner side of the outer portion of the covering, a band of resilient or springy material of convex-plano form in cross section arranged at the inner side of the said layer, a flat metallic hoop arranged against the inner flat side of the convex-plano band, a layer of tough material arranged at the inner side of the hoop and extending alongside the side portions of the first mentioned layer and connected to said side portions at a point intermediate the edges thereof and the hoop, a layer of tough material having a loop portion arranged against the second mentioned layer and also against the extended side portions of the first mentioned layer and connected to the said extended side portions and also having surplus edge portions lapped one over the other, and an inflatable tube contained in the said layer.

897,202. Hydrocarbon Burner. Burton C. Hamilton, Chicago, Ill., assignor, by mesne assignments, to Stanley Motor Carriage Company, a Corporation of Massachusetts. Filed Nov. 5, 1901. Serial No. 81,274.

1. The combination with a steam generator of a main burner therefor and having a combination chamber arranged between said generator and burner; a fuel vaporizer located within said combustion chamber and connected to said burner; a swinging heating and lighting torch adapted to play upon and heat said vaporizer; and means for supplying fuel to said torch connected to the vaporizer.

897,209. Automobile or Vehicle Tire. Godfried Knadler, Cleveland, Ohio. Filed Aug. 20, 1906, Serial No. 331,242. Renewed Oct. 16, 1907. Serial No. 397,677.

1. A non-inflatable cushion tire for vehicle consisting of a single endless molded tabular body having separate base portions adapted to abut and form a solid sustaining wall on a central line through the base of the tire, and said body having its greatest thickness next above the immediate base on lines corresponding substantially as shown and described.

897,230. Motor Vehicle. Thomas L. Sturtevant, Quincy, and Thomas J. Sturtevant, Wellesley, Mass. Filed Sept. 3, 1904. Serial No. 223,247.

1. In a motor vehicle, the combination of a motor, fuel-supplying apparatus therefor comprising a throttle, an automatic clutch device between the motor and a driven part, a single device for controlling the said throttle and the operation of the automatic clutch device, and a stop for limiting the closing movement of the throttle so that the motor may continue to run but at a speed too low to permit clutching engagement of the said automatic clutch.

897,259. Method of Carburetting Air for Explosive Engines. Alexander Winton and Harold B. Anderson, Cleveland, Ohio, assignors to the Winton Motor Carriage Company, Cleveland, Ohio. Original application filed June 23, 1906, Serial No. 323,117. Divided and this application filed April 15, 1908. Serial No. 427,197.

1. The method of uniformly carburetting volumes of air moving alternately at different velocities, consisting in subjecting the slowly-moving volumes of air to surface contact with a body of volatile liquid, and the rapidly moving volumes of air to sprayed volatile liquid.

897,261. Transmission Mechanism. Chas. E. Duryea, Reading, Pa., assignor to Corbin Motor Vehicle Corporation, New Britain, Conn., a Corporation of Connecticut. Filed Sept. 28, 1907. Serial No. 394,962.

1. In a transmission mechanism, a driving shaft, a driven shaft, a plurality of change speed gears held against rotation but adapted to slide on one of said shafts, an internal gear connected to the other shaft, means to shift the first mentioned gears longitudinally on their shaft support to cause either one to face said internal gear, and means to shift the first mentioned gears and their support laterally to cause either of said gears to mesh with said internal gears.

897,270. Running Gear for Vehicles. William H. Chapin, Springfield, Mass. Filed Dec. 11, 1905. Serial No. 291,286.

1. A vehicle running gear comprising a frame or platform, a wheel frame consisting of an axle, two supporting arms therefor, means to pivot said arms between their extremities on an axis parallel with said axle, and pneumatic cushions disposed at opposite ends of the supporting arms, one on each side of the pivotal point therefor, to yieldingly restrict the movement of the ends of said arms in opposite directions.

897,368. Automobile. Henry K. Holsman, Chicago, Ill. Original application filed Feb. 8, 1907. Serial No. 356,393. Divided and this application filed June 12, 1907. Serial No. 378,502.

1. In an automobile, the combination with running gears, of a steering wheel having its axle pivoted thereon, a steering arm secured to the axle, a vertical rock shaft, link connections between the rock shaft and the steering arm, a horizontal arm connected to the rock shaft to swing it to steer the vehicle but movable relative thereto, an elongated handle and sleeve journaled on the horizontal arm, engine-throttling mechanism, and connections between the engine throttling mechanism and the sleeve, whereby the latter may be rotated in one position of the arm and moved longitudinally thereof in another position to control the speed of the vehicle.

897,421. Brake for Automobiles. Gordon Stables, Philadelphia, Pa. Filed April 24, 1907. Serial No. 370,009.

1. A brake of the type set forth, comprising a rock shaft having cranks at its ends, brake shoes pivoted to said cranks, a transverse member formed with openings, said brake shoes having stems projecting through said openings as guides, pins carried by the stems above the transverse member, spring actuated means for rocking said shaft, and means for holding said shaft normally against movement by said spring actuated means.

897,450. Short Turn Gear. Robert H. Bowman, Canon City, Colo. Filed Feb. 24, 1908. Serial No. 417,380.

1. In a short turn gear, the combination with the main frame of the vehicle, a pair of driven gears mounted thereon, and the front truck wheels loosely mounted on their respective axles; of a separate gear connection that joins each of the wheels with their respective drive gears, each of the said connections including a shifting clutch device, for throwing the wheels out of gear with their respective drive gears, means on the front truck frame for oscillating the wheels together but in reverse directions and other means on the said front truck frame for independently actuating the clutch devices.

897,466. Spark Plug Guard. Robert S. Kearney, New York, N. Y. Filed April 9, 1907. Serial No. 367,146.

1. A guard for spark plugs comprising a cylindrical shell open at both ends and adapted to slip over the spark plug and inclose the same, one end of the shell being secured to the base of the spark plug while the opposite end is provided with a notch, a removable cap normally closing the notched end of the shell, and a hood carried by the cap and projecting over the said notch.

897,472. Jar for Storage Batteries. Joseph Marx, Buffalo, N. Y. Filed July 19, 1907. Serial No. 384,580.

In a jar for storage batteries, the combination of an outer shell, an inner shell formed of hard rubber and fitting within the outer shell, the said inner shell being provided at its mouth with an enlarged annular rim also formed of hard rubber and extending over and resting upon the edge of the outer shell, and a lip of soft rubber pendent from the enlarged rim and overlapping the edge of the outer shell upon the exterior thereof.

897,519. Rotary Engine. Levi Bonner, Ames, Colo. Filed Sept. 20, 1905, Serial No. 279,257. Renewed Jan. 25, 1908. Serial No. 412,634.

1. A rotary engine having outer and inner cylinders, one of which has a movement of rotation relative to the other, a resilient blade attached to one of said cylinders whose edge bears on the circumferential surface of the other cylinder, and fluid pressure inlets and outlets opening into the space between the said cylinders, said blade

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being rearwardly inclined and the faces thereof against which the pressure acts being inclined to the face of the cylinder against which it contacts, substantially as described.

897,532. Cooling Device for Explosive Engines. Reinhold Herman, Crafton, Pa. Filed Aug. 12, 1907. Serial No. 388,157.

1. A cooling device for the purpose set forth comprising groups of sets of combined water and air conduits, the water conduits of each set of each group being suitably spaced apart and the air conduits being open at each end and disposed within the water conduits, each of said air conduits opening at each end directly into the atmosphere whereby the air will be conducted by the sets of air conduits of each group in the same general direction and in currents independent of each other, the combined conduits of each group extending in an opposite direction with respect to the conduits of the other group.

897,591. Automobile Running Gear. John W. Cooper, Boston, Mass. Filed July 2, 1907. Serial No. 381,819.

1. In a vehicle running gear, the combination of upper and lower frames, an intermediate frame between said upper and lower frames and having pivotal connection with the former, a vertical spring arranged between the inner portion of said intermediate frame and the lower frame, a horizontal spring mounted upon the lower frame and connecting means between said horizontal spring and the outer portion of the intermediate frame for supporting the latter by a suspending action.

897,630. Detachable Rim. Rudolf Kronenberg, Ohligs, Germany. Filed Dec. 21, 1907. Serial No. 407,462.

1. A rim for vehicle wheels, bearings engaging the spokes of the wheels and provided with openings, and a transverse locking member engaging said openings and provided with an eccentric part engaging the rim.

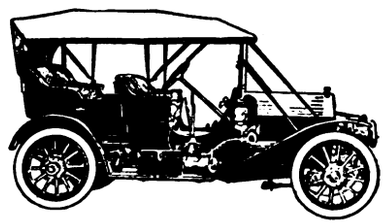
897,663. Convertible Automobile Body. Edward T. Robinson, St. Louis, Mo., assignor to St. Louis Car Company, St. Louis, Mo., a Corporation. Filed Sept. 27, 1907. Serial No. 394,823.

1. A convertible automobile body consisting of a body proper, stationary corner posts extending upwardly therefrom, a top supported by said corner posts, side posts, hinged to said top and susceptible of being moved in juxtaposition to the top of the vehicle body, means for retaining said hinged posts in either their elevated or lowered position, and window sashes for co-operating with said stationary corner posts and said hinged posts, substantially as set forth.

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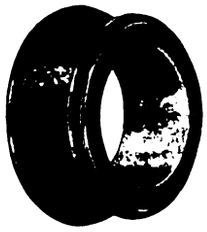
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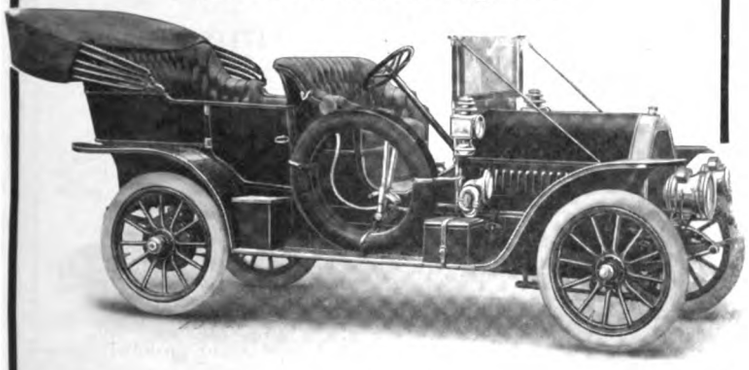
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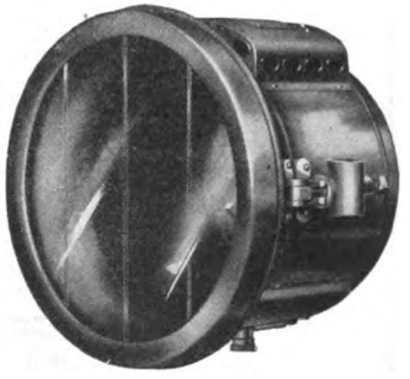
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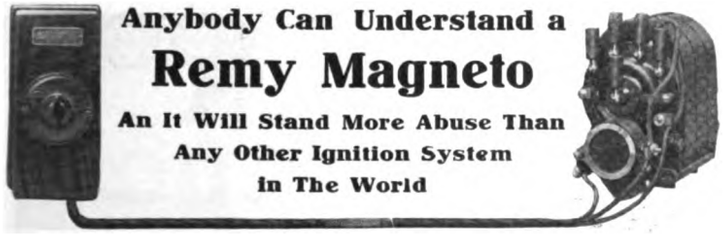
SOLAR LAMPS

are part equipment on the cars of 89% of American manufacturers. They are invariably specified by car owners and dealers who desire the world's best automobile lamp.



Badger Brass Mfg. Company

604 Lyman Ave.
KENOSHA, WIS.



Anybody Can Understand a Remy Magneto

An It Will Stand More Abuse Than Any Other Ignition System in The World

Here is the simplest ignition ever devised for a motor car.

The Remy Magneto is so easy to understand that anybody can install it whether he ever had anything to do with machinery or not.

Terminals for connection of the wires are indicated with red, green, and yellow, corresponding to the colors of the wire covers. You put the red on the red, the green on the green, and the yellow on the yellow. The diagram that goes with the Remy is just like A, B, C.

Even if an improper connection should be made, it wouldn't injure the magneto. The Remy is the only magneto of which this is true. It is "fool proof."

And the Remy will stand more neglect or abuse from oil, dirt and water than any other ignition system in the world.

Every experienced motorist knows how important this is. Uncertain firing is one of the most serious troubles with which he has to contend.

In this respect the Remy differs materially from the usual delicate, sensitively adjusted apparatus that so easily gets out of order.

THE REMY IS THE STANDARD MAGNETO OF AMERICA

It has been used as standard equipment upon leading automobiles since the very beginning of automobile manufacture.

Despite the fact that every year from six to a dozen new magnetos are placed on the market.

The Remy is the only American magneto that has ever been used by American automobile manufacturers, except in an experimental way. The combined sale of all the imported magnetos, and the several new American magnetos, will not equal the total sale to date of Remy Magnetos for 1909 American cars.

There must be reasons for this almost unanimous agreement of the superiority of the Remy. You certainly take no chances in accepting the verdict of the big majority. Examine the Remy. See for yourself why it is the simplest and most reliable magneto yet produced.

Notice that it has no brushes to cause trouble—wear out or be replaced.

This is only one result of our long experience in magneto making. We are the oldest magneto manufacturers in America and the oldest manufacturers of high tension magnetos now used almost exclusively in the world.

Magneto ignition is now almost universally demanded by motorists. Every high grade car uses it, or makes it an attractive option.

Buick Cars, equipped with Remy Magnetos, captured eleven out of fourteen events at Montreal, beating Christy and Barney Oldfield's machine and tieing for the fastest half mile.

Don't try experiments. Settle the ignition question once for all with the Remy.

Write us for illustrated folder giving full description of the Remy. Address Dept. 11.

REMY ELECTRIC COMPANY, Anderson, Ind.

We have opened a Branch Office in Thoroughfare Bldg., Broadway and 57th St., New York. The Remy Magneto will be exhibited at all the Automobile Shows.

Matheson

1909 Prices Reduced $1,000

In order to sell hereafter this highest of all high-grade cars at the prices of the cheaper cars, we have **increased our working capital by $350,000** and will **double our factory output.** Send for our book of customers' letters telling of the experiences of the most prominent men of affairs in this country with their Matheson cars, covering thousands of miles of service everywhere.



	New Price.	Former Price.
50 H. P. 1909 Touring Car	$4,500	$5,500
50 H. P. 1909 Roadster	4,350	5,000
50 H. P. 1909 Runabout	4,350	5,000
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50 H. P. 1909 Landaulet	5,500	6,500

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MILLER'S Anti-Freeze Compound

DIRECTIONS FOR USE.

The radiator should be thoroughly washed out with hot solution of caustic soda, which will remove any dirt, and then clean water should be put in to see if the radiator leaks any place.

If the radiator is found not to leak, put in the solution. To get a mixture that will not freeze at 15 degrees below zero, Fahrenheit, add ten pounds of the compound to two gallons of water. To get a solution that will not freeze 30 degrees below zero, Fahrenheit, add ten pounds of the compound to every six quarts of water.

The cover on the can should be kept closed tight at all times while it contains any of the compound.

Price, 10-lb. cans..... $1.00 each.

Pan-American Automobile Body Polish



Pan-American Polish was awarded the Bronze Medal ("the only one awarded") at the Louisiana Purchase Exposition at St. Louis, 1904. This polish has been carefully prepared for the Automobile trade. It is also applicable to the carriage trade, or can be used on any varnished furniture or wood-work of any kind. It will remove stains, cover scratches; leaves the automobile with its original new lustre without being sticky or greasy.

It can be used on the leather seats or tops with the very best results. Can be used on any color or kind of varnish from the clearest white to the darkest black. Furnished in eight-ounce bottles.

For sale by all automobile dealers.

Price, 60 cents per 8-oz. bottle. Price, $3.00 per gallon.

Special prices quoted manufacturers, jobbers and dealers. Catalog on request.

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A town car of the most luxurious type. Every detail suggests elegance and refinement. Among the points that contribute to its beauty of design may be mentioned the rounded back and extension front with bent glass windows, a combination giving those symmetrical lines lacking in Limousines not having these features. The luxurious upholstering and interior conveniences leave nothing to be desired in the way of comfort. A dome electric light with switch affords an instant and brilliant light, toilet cases with accessories are at each side, and a speaking tube connects with the driver. Seating capacity of body: five passengers.

PRICE COMPLETE, $3,750.

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Member of Association of Licensed Automobile Manufacturers.

The Supremacy OF Standard Bearings

is emphasized by the continued victories of the

Chalmers-Detroit "30"

which is equipped fully with

STANDARD ANNULAR BEARINGS

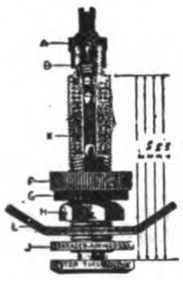
Their axles are also our work.

Standard Roller Bearing Co.

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Trade Mark Registered April 30, 1895

SIMPLE AND ABSOLUTELY AIR TIGHT

Schrader Motor Tire Valves, as shown in cut, are the regular equipment for G & J Motor Tires, Hartford Dunlop Detachable Tires, Fisk Detachable Motor Tires, and New Goodyear Detachable Motor Tires.

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Supplied to the Trade by All Tire Manufacturers

Manufactured by **A. SCHRADER'S SON., Inc., 28-30-32 Rose St., New York**

SPECIFY

Heinze ignition apparatus on your 1909 car and get

THE BEST MADE.



Write us if your dealer does not carry them.



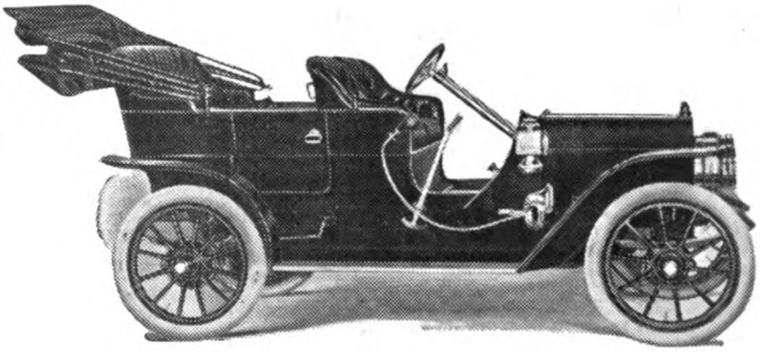
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COILS, TIMERS, MAGNETOS, SPARK PLUGS.

OAKLAND



Model B Touring Car, price $1,250.00. Full equipment, including two gas lamps, two side oil lamps, one tail lamp, generators, horn, tools, jack, pump and batteries. Top, $75.00 extra. Runabout, $1,200.

¶ A combination of simplicity and efficiency designed for the man who scrutinizes the car he is to buy, who intends to himself operate it, and to whom economy in up-keep and running expense is essential.

¶ The live agent will find in the Oakland a car that appeals to a large and intelligent class of purchasers and that will justify the fullest confidence.

¶ Correspondence invited.

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If your car is wired with PACKARD ENAMELED IGNITION CABLE you can be dead sure you will have no trouble so far as the wiring is concerned.

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Get Rid of Tire Troubles Try a Set of

G&J TIRES

TRUFFAULT-HARTFORD
Trade
SHOCK ABSORBER
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The Device that made Safe, Speedy and Comfortable Automobiling Possible.

Write for catalogue, Department D.

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Wridgway No Glare Shade

which adds to the efficiency of the lamps, and keeps glare from blinding other users of the highways. Can be fitted to any existing lamp.

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220 to 224 W. 41st St., NEW YORK

LITTLE DROPS OF WATER
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NOTHING INJURES
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DIAMOND CHAINS

drive their cars more miles per dollar cost than any others

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CHAS. F. KELLOM & CO.
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THE JACKSON

"No Sand Too Deep—No Hill Too Steep."
2-Cylinder and 4-Cylinder
Runabouts, Roadsters, Touring Cars,
18 H. P., 24 H. P., 30 H. P. and 36 H. P.
Prices, $850, $950, $1,250 and $2,000.

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HIGH GRADE
NEW HAVEN, CONN.

THE GYROSCOPE CAR

The Simplest Automobile in the World.

$750—The Price—$750.

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The newest and best wrench made; all steel—great strength; instantly adjusted; easily and quickly operated; positive grip; immense time, trouble, and temper saver; best "all round tool" ever offered for sale.

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"The Oil in the Checkerboard Can"

Is the one perfect automobile lubricant. Panhard Oil is the only cylinder oil made that will lubricate at all temperatures. It insures against pre-ignition, pounding, and other costly engine troubles which are commonly caused by poor cylinder oil carbonizing in the cylinders.

The new Sealed Can protects you against the substitution of an inferior oil—always see that the seal is not broken.

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Listen for the knocks!
The car they all knock is
the one they are all afraid of
The E-M-F. "30"—sure!

SUPERIOR Etched Name Plates

We are prepared to furnish you any kind or style as above. We shall be pleased to furnish quotations.

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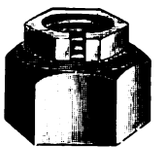
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ONE Quality for ALL Models
ONE Price for ALL Buyers

Write for 1909 Catalog.

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COLUMBIA LOCK NUTS

CANNOT shake loose. They add an important factor of safety and give a feeling of security. Columbia Lock Nuts are the best kind of accident insurance. Used by most makers of the best cars and by leading railroads, etc. Send us a two-cent stamp, size and thread of the bolt, and we will forward a Columbia Lock Nut for it.



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INTAKE, EXHAUST AND WATER PIPES
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Automobiles
Which do you want—weight or ability? The Franklin catalogue tells you; and tells you why. Write for it.
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SIDE-WIRE SOLID MOTOR TIRES
THE WORLD'S STANDARD
FIRESTONE TIRE & RUBBER CO., Akron, Ohio

The "Gotham" STA-RITE will end your spark plug troubles. Soot can't stick to the porcelain.



Won't short-circuit. Never leaks. Can be taken apart and cleaned with ease. Of dealers, or direct, $1.00.
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The car which has no clutch to slip—
no gears to strip—no grease—no noise.
THE $1350 CARTERCAR
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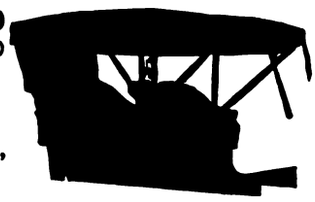


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JUSTIFIES ITS NAME
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Steel Tires
Full of Air.
Tire expense cut in two.
Cannot Blow Out, Rim Cut or Puncture.
As Flexible as Rubber Anti-Skid.
That part of a tire with a blowout or a rim cut in it will last longer than any other part if encircled by a few sections of steel.
Thousands in use.
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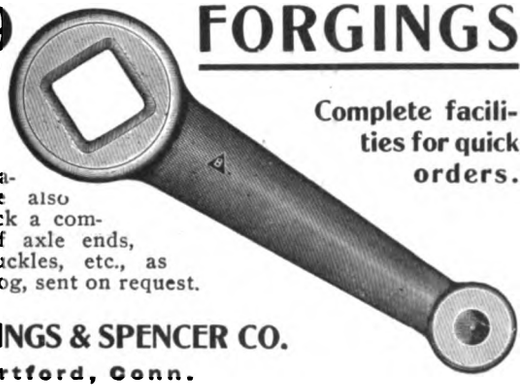
STEPNEY
SPARE WHEEL

Every motorist should carry a "Stepney" and avoid all troublesome delays caused by punctures and blowouts. Write for Catalogue D.

The Only Cure for Tire Troubles

DISTRIBUTORS — AMERICAN STEPNEY SPARE WHEEL CO., 1773 Broadway, New York Ciy. AUTO SPARE WHEEL CO., 22d, Oak and Gillham Blvd., Kansas City, Mo. EXCELSIOR SUPPLY CO., 1436 Michigan Ave., Chicago, Ill.

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Send us your specifications. We also carry in stock a complete line of axle ends, steering knuckles, etc., as per our catalog, sent on request.

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Did You Get Yours?
IT'S FREE FOR THE ASKING

Our new catalog showing and describing the different models of the

SPLITDORF MAGNETO

Get one and learn more about this splendid mechanism.

C. F. Splitdorf Walton Ave. and 138th St. Branch, 1679 Broadway. **New York**
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For Automobile Bodies, Dashes, Guards, Bonnets, Battery Boxes, Drip Pans, Mufflers, Etc.

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SCALELESS—RUSTLESS
SMOOTH—PAINT ADHERES FIRMLY

A Metal That's A Time and Money Saver

THE STARK ROLLING MILL COMPANY, CANTON, OHIO

Model B—Brush Runabout

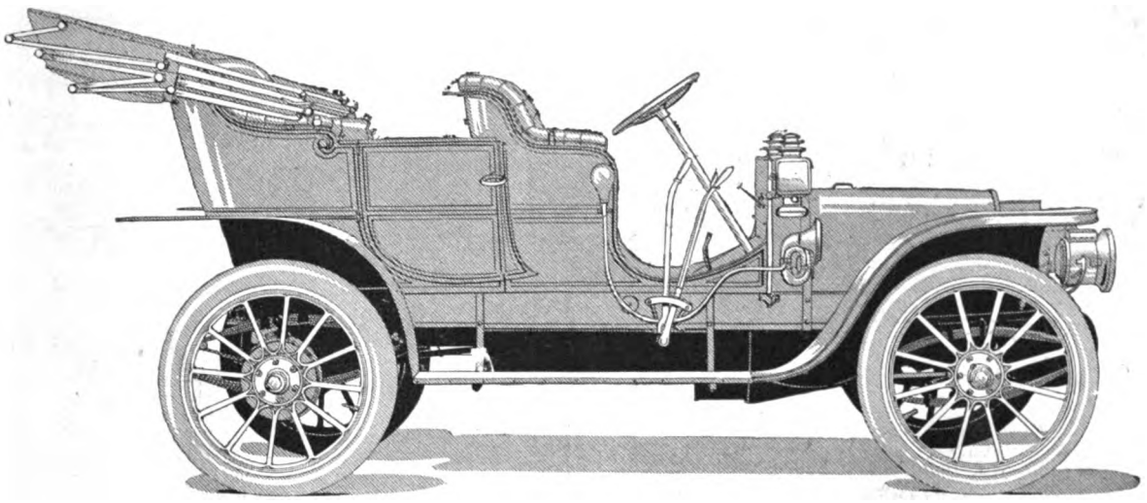
A CAR OF SIMPLE DESIGN MADE WELL
NOT A COMPLICATED DESIGN MADE CHEAPLY

Its records and the opinions of its users speak more loudly than self praise. Agencies for 1909 are being closed rapidly. Much good territory still open.

BRUSH RUNABOUT COMPANY, Detroit, Mich.

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FRANKLIN AUTOMOBILES



Model D, five-passenger touring car. Full elliptic springs.
Built-up wood frame. 36-inch wheels. 106-inch wheel base.
2200 pounds. $2800, f.o.b., Syracuse. Top extra.

A high-grade powerful automobile. Refined, reliable and safe. Abler for touring on American roads than any automobile but a Franklin. Beautiful to look at, comfortable to ride in and doing its work at the lowest operating cost.

The biggest mistake in automobile making is useless weight and bulk.

Great weight is not needed to carry passengers in an automobile. It is not necessary for strength either. Useless weight is a weakness. It handicaps the power and discounts the ability. It is expensive beyond all reason.

The average water-cooled automobile weighs 25 per cent. more than a Franklin of the same capacity. In many cases the difference is even greater. Figure out what this means in wear and tear on tires, and on the patience and the nerves. Figure the difference in fuel needed to move the same passengers.

Beside this the Franklin air-cooled engine produces the same power as a water-cooled engine on 25 per cent. less gasoline. Franklins make no repair expense for a leaky or frozen plumbing system. They work all the year. They are easier to handle than a heavy automobile, less liable to accident and damage. Their depreciation is less.

A water-cooled automobile can't be as light as it ought to be without sacrificing strength or comfort or some other important quality.

The first and last question to ask about an automobile before you buy it is, "What does it weigh?"

"My Model D goes over many of the roughest and hilliest roads in Rhode Island and Massachusetts in company with other cars of greater power than mine, and I always find myself at the right place at the finish. If I had four times as much money to put in a car I should still want a Franklin. I find it durable, comfortable, strong and light, a fuel-saver, a car that moves all the time whether up hill or down. I am satisfied that I have a corking good car and do not want any other unless the H. H. Franklin Mfg. Co. can in some way improve upon their own product."

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May 4, 1908.

Write for catalogue describing the complete line of Franklin touring cars, runabouts, limousines, landaulets, broughams and town cars.

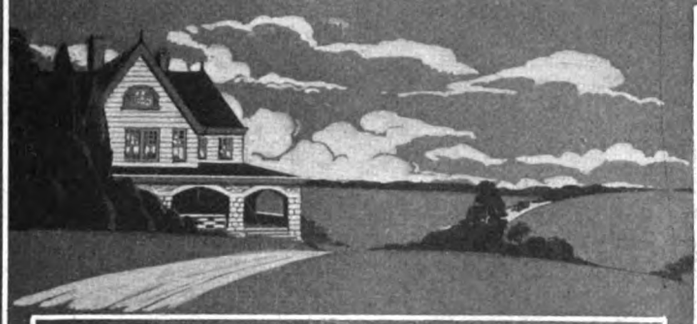
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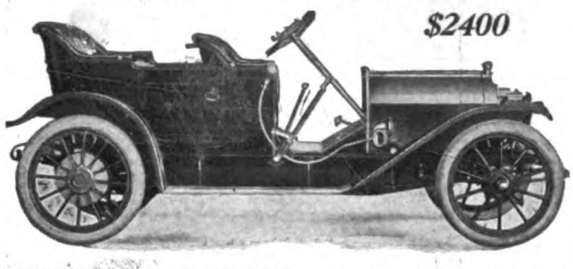
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"A Mechanical Masterpiece"





Marmon "Thirty-Two"
$2400



For The Man Who Doesn't Buy With His Eyes Shut

The Marmon "Thirty-two" is neither a cheaply-built car at a low price, nor a "good-enough" car at a high price.

It is a thoroughly high-grade car, carefully built and completely equipped, at a price which makes it the best real bargain of the year.

It is a car of whose character, appearance, and performance its owner may well be proud. It is a car that will live and can be depended upon. The Marmons of 1904 are still giving splendid service.

Equipment and Marmon construction considered, it urges a careful investigation by every buyer who is really economical.

Genuine Krupp and Chrome Nickel steels used in important parts. Bosch magneto and battery—dual system. Hess-Bright imported ball bearings. Weight (weigh it), 2,000 lbs. 32-40 H.P. Big tires (34x40 all around). Large brakes. Straight line shaft drive. Fully equipped. Touring car, Roadster, Four-Passenger Suburban with removable rear seat, or Limousine Town Car.

TO DEALERS: This car is a winner Your competitors will have to take off their hats to it.

The superb Marmon "Fifty" (with Seven-Passenger or Four-Passenger Body) $3,750

Nordyke & Marmon Co. (Estab. 1851) Indianapolis, Ind.

Standard Mfrs. A. M. C. M. A.

(We will exhibit in New York only at Grand Central Palace Show, opening New Year's Eve.)

The Easiest Riding Car In The World

LARGE SALES AND SMALL PROFIT

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from ENGLAND (paying Freight and Duty) and sell it at **THE SAME PRICE AT WHICH THE OTHER CHAINS ARE SOLD TO AUTOMOBILE MANUFACTURERS, JOBBERS, DEALERS AND OWNERS.**

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Several of the manufacturers now equip their cars with **THE BRAMPTON CHAINS.** Others will do so, if you will order your car that way. No extra cost to you or the manufacturer.

There is an increasing DEMAND for **THE BRAMPTON CHAIN** and it is now being sold by the live jobbers and dealers throughout this country. Agents wanted in unoccupied territory.

PRICE THE SAME—QUALITY, THAT'S DIFFERENT

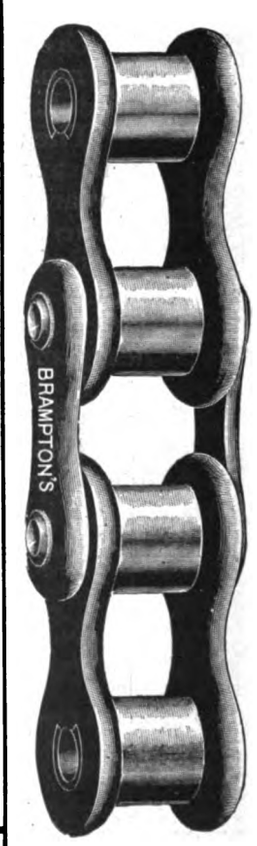
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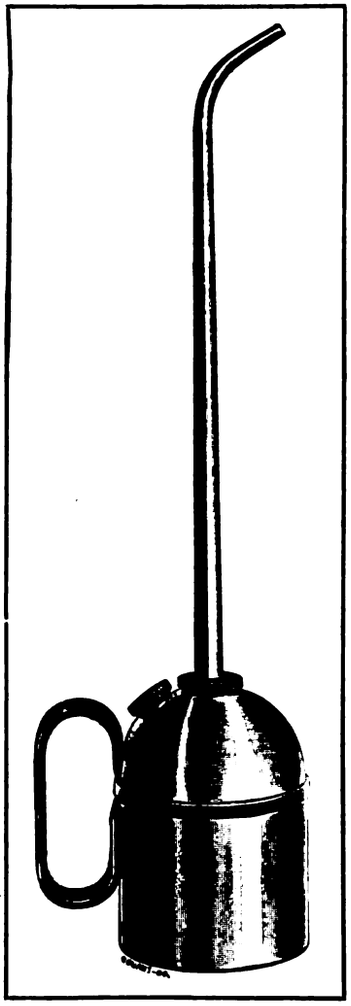
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"SWEDOH" SPRING STEEL RIMS

turned out by us, not one has ever been returned as defective. We make the statement on honor, and it ought to impress the manufacturer who is aiming to produce a quality product.

"Swedoh" Spring Steel Rims

are emphatically a quality product of one of the largest and best equipped mills in the country. They are used on most good automobiles and ought to be used on all automobiles.

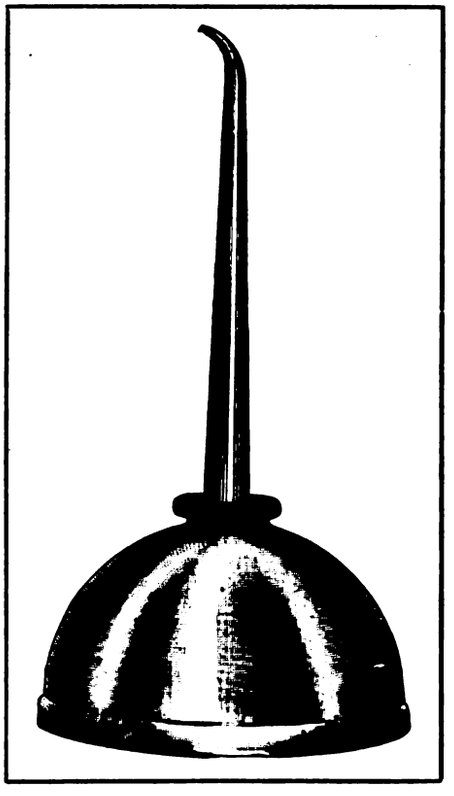


We also make from "Swedoh" steel

REAL OIL CANS

heavily copperized, of extreme durability and springiness that the ordinary oil can ought to be but isn't.

Our product includes all kinds of steel stampings and pressed work. If you want anything made from steel, we can make it—and "make good."



AMERICAN TUBE & STAMPING CO.

Bridgeport, Connecticut

NEW YORK OFFICE, 100 BROADWAY

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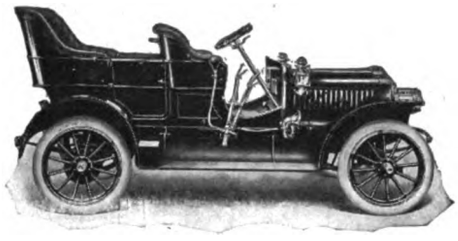
THE
American Standard Car

is a title deserved in so great a degree by no other car than

"The Maxwell"

The Maxwell serves the needs of a greater variety of users. It gives unqualified satisfaction to the man to whom economy of upkeep is a consideration as well as to him who in using a Maxwell finds excessive first outlay unnecessary.

Whether the motorist travels about in the Maxwell Junior $500 Standard American Runabout; whether he uses the 2-cylinder 14 HP. Runabout, which is sold, fully equipped, at $825; the 2-cylinder 20 HP "Doctor" Maxwell—the ideal physician's car, at $1,350, fully equipped; the 2-cylinder 20 HP. five-passenger Touring Car, at $1,450, fully equipped; or one of our 4-cylinder 30 HP. cars of the five-bearing crankshaft type selling at $1,750—every one of these models represents the highest value ever produced by the American automobile industry.



Maxwell Model D A, 4-cylinder, 30 HP. Touring Car, $1,750.

Some cars use THREE-POINT SUSPENSION; others THERMO SYPHON COOLING, UNIT CONSTRUCTION, MULTIPLE-DISC CLUTCHES—but no other American car combines all these important features in a single design, except THE MAXWELL.

Our 4-cylinder 30 HP. types use five-bearing crankshafts—a construction more expensive to make, but certain to produce the satisfaction that is genuine Maxwell satisfaction, the pleasant certainty that the problem of owning a Maxwell is PERFECTLY SIMPLE, because the car itself—no matter which of the Maxwell models you choose—is SIMPLY PERFECT.

You should be interested to learn more about Maxwells. Drop us a line.

Benj Briscoe

Maxwell-Briscoe Motor Co.

P. O. Box 106, Tarrytown, N. Y.
Factories: New Castle Tarrytown Pawtucket

THE
SELDEN
CAR
FOR 1909

Enters upon its second year with a clean record. No "first year" car has ever earned a better reputation or made a better showing.

THE OAR OF MODERATE PRICE

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Touring Car Roadster
Limousine Landaulet

4 cylinder, 28-30 horsepower, shaft drive, selective transmission, metal body, pressed steel frame, excellent hill climber, fine finish and style, roomy tonneau, luxurious upholstery, easy riding, smooth running, economical in up-keep, in fact, a high grade car in every particular.

The "Silent Selden"

1909 MODELS READY IN SEPTEMBER

Agency propositions now ready. Send for catalog and specifications.

Selden Motor Vehicle Co.

ROCHESTER, N. Y.

Member A. L. A. M.

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PROVERBIAL HOT CAKES

aren't in it for popularity when stacked up against

STEWART SPEEDOMETERS

I would not believe there was such a demand for speedometers until we handled Stewarts

There's Nothing To It

FIVE STEWARTS SOLD TO ONE OF ANY OTHER MAKE
So says a prominent New York dealer

Send for new catalog describing the beautiful 1909 line



MODEL 4—Four-inch, 60-mile dial, enclosed season odometer and automatic resetting trip register and maximum speed hand, price.. **$40**

Stewart & Clark Mfg. Co.

509 Diversey Blvd., Chicago, U. S. A.

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The Jackson "Mud-Hen"

from Detroit, Mich., to Bangor, Maine flies through on time

Because of the Wonderful Accuracy of the Warner

AUTO-METER

This wonderful instrument is so sensitive that it correctly indicates the speed when the car is PUSHED AHEAD BY HAND.

No other speed indicator begins to indicate until the car has reached a speed of 5 to 15 miles per hour.

The Auto-Meter is so accurate and durable, that instruments FIVE YEARS OLD still test absolutely accurate within 10 FEET TO THE MILE.

Those who demand ENDURING ACCURACY insist on the Auto-Meter. It is the only instrument SUPPOSED to indicate speed which REALLY DOES IT.

The Warner Instrument Co.

Factory and Main Offices:

323 Wheeler Avenue, BELOIT, WIS.

BRANCH HOUSES:

New York, 1902 Broadway
Boston, 925 Boylston St.
Philadelphia, Cor. Broad & Race.
Pittsburg, 3432 Forbes St.
Cleveland, 2062 Euclid Ave.
Buffalo, 722 Main St.
Detroit, 239 Jefferson Ave.
Chicago, 1305 Michigan Ave.
Indianapolis, 330½ N. Illinois St.
St. Louis, 3923 Olive St.
San Francisco, 550 Golden Gate Ave.
Los Angeles, 1212 S. Main St.



What Could Be More Convincing Than This?

Mr. Inderrieden, Borough of Manhattan, Nov. 10th, 1908
Warner Instrument Co.,
New York City.

Dear Sir:

It gives me great pleasure to inform you that I used the Warner Auto-Meter upon the Model "H" 1909, $1600 Jackson car, with which Mr. E. P. Blake of Boston and myself made a non-stop run from Jackson, Mich., to Bangor, Me., in 215 hours continuous driving. The car ran continuously during the seven days of the run. The roads were something frightful, and it took a great deal of night driving to keep up with our schedule.

We found the Auto-Meter absolutely indispensable to us in picking out the road, and as sign boards and other indications were rather vague, we had to depend upon our guide books and maps and then watch the Auto-Meter.

The Auto-Meter never failed us, and I take this opportunity of expressing to you my entire satisfaction at the manner in which it performed.

Very truly yours,
CHAS. G. PERCIVAL, M. D.

Overland

For Simplicity
For Reliability
For Appearance
For Comfort and
For Noiselessness

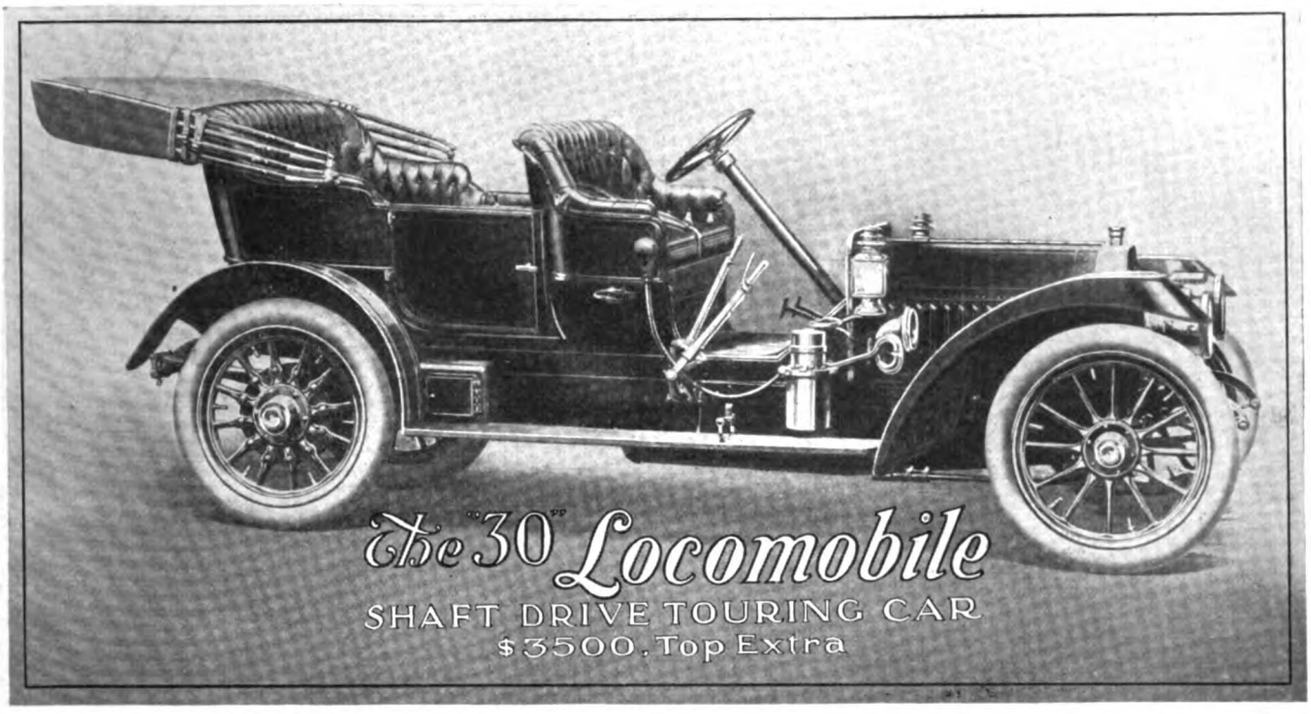
THE OVERLAND IS UNEXCELLED

The Most Complete Line in America

Model 30 Roadster (3-pass.), Planetary transmission,	$1,250
Model 30 Roadster (4-pass.), Planetary transmission,	1,300
Model 30 Coupe, Planetary transmission,	1,650
Model 31 Toy Tonneau (4-pass.), Planetary transmission,	1,400
Model 31 Tonneau (5-pass.), Planetary transmission,	1,400
Model 32 Toy Tonneau (4-pass.), Selective transmission,	1,500
Model 32 Tonneau (5-pass.), Selective transmission,	1,500
Model 34 Willys-Six Roadster or Tourist,	2,000

OVERLAND AUTOMOBILE CO., INDIANAPOLIS INDIANA

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THE NEW "30"

The name Locomobile on a shaft-drive car guarantees its superiority. The New "30" shaft-drive model is as strong, durable and safe as our famous chain cars. Powerful—silent—easily handled—and, above all, easy riding. Thoroughly developed and fully tested through three years actual road work. Motor 4½ x 4½, 38 h.p., actual. Wheels, 34 in. Price, $3,500 (top extra).

THE "40"

The "40" Locomobile is the logical choice of those who want a high-powered seven-passenger car. Price, $4,500. Also Runabout or Baby Tonneau and Closed Cars.

A "40" Locomobile won the Philadelphia Founders' Week Stock Chassis Race, the most important event of its kind ever held in America.

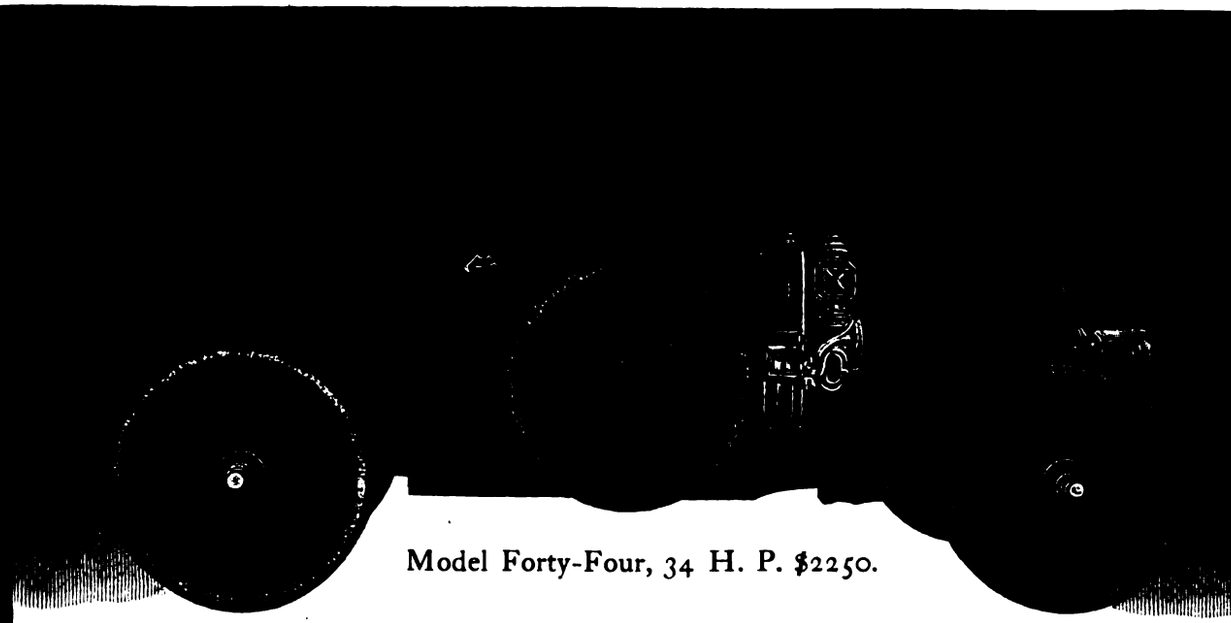
A LIMITED AMOUNT OF TERRITORY OPEN TO GOOD DEALERS

Send 10c. for a set of 12 Souvenir Post Cards, showing the 90 h. p. Locomobile winning the 1908 International Race for the Vanderbilt Cup, the first American car to achieve this triumph.

The Locomobile Company of America, Bridgeport, Conn.

NEW YORK: Broadway and 76th St.—BOSTON: 400 Newbury St.
PHILADELPHIA: 245 N. Broad St.—CHICAGO: 1354 Michigan Ave.

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Model Forty-Four, 34 H. P. $2250.

THE RAMBLER SPARE WHEEL

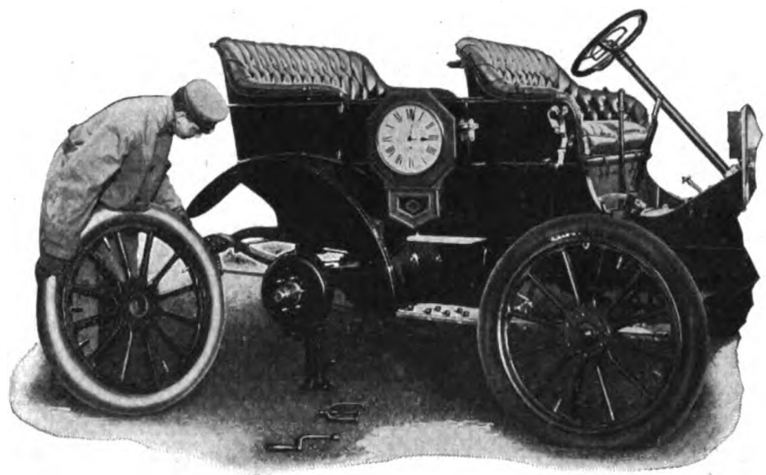
All the new four-cylinder Ramblers are fitted for the Rambler Spare Wheel—a wheel complete—excepting the hub center, on which is carried a complete tire inflated. The regular wheel is secured to the hub center by six bolts. Removing the six nuts for these bolts this wheel can be detached in two minutes with the special tools provided, and the Spare Wheel put on and secured in three minutes.

Wheel fits either front or rear. Solves the tire problem. Extra wheel available in case of need. Spare Wheel with inflated tire, brackets and tools, for Model Forty-Four, $74, for Model Forty-Five, $85.35.

Rambler

The Car with the Offset Crank Shaft

Seven passenger model, forty-five horse power with offset crank shaft, $2500. Other models, $1150 to $2500.



Write for catalog describing in detail Rambler offset crank shaft, Spare Wheel, straight line drive and other exclusive features of the new Rambler models.

This shows the simple manner in which the regular wheel can be removed and the Spare Wheel substituted within three minutes.

THE CAR OF STEADY SERVICE

Thomas B. Jeffery & Company, Main Office and Factory, Kenosha, Wis.

Branches and Distributing Agents:

Chicago, Milwaukee, Boston, New York, San Francisco. Representatives in all leading cities.

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, December 10, 1908. No. 11

A. L. A. M. DISPOSES OF OLDS

Company Finally Dropped for Non-Payment of Royalties—Chalfant Promoted to Post of General Manager.

As a final step in the case of the Olds Motor Works, of Lansing, Mich., whose Selden license was recently cancelled by the Electric Vehicle Co., for non-payment of royalties, the board of managers of the Association of Licensed Automobile Manufacturers at a meeting on Thursday, the 3d inst., dropped the Olds company from the Association. This action was taken following a meeting of a special committee the day previous, at which the Olds company was given apportunity to present whatever reasons it cared to offer as to why it should not be put out of the organization.

The special committee's meeting was called in accordance with Article XVI. of the Association's agreement with its members, which stipulates that a hearing be given before a member may be expelled. F. L. Smith, vice-president of the Olds Motor Works, had asked that the hearing be postponed from the date set by the committee, but this request the latter refused to grant. At the meeting the committee was unanimous in its recommendation to the Association that the Olds company be removed from the membership. The report of the committee was approved at the session of the board of managers on Thursday, and the company was accordingly erased from the Association's roster.

E. P. Chalfant, who for several months has been the assistant general manager of the Association, was at the latter meeting elected to the post of general manager, left vacant some time ago by the resignation of Milton J. Budlong. He was also added to the show committee, to take the place of Marcus I. Brock, resigned. The presence of George J. Dunham, president of the new Royal Tourist Car Co., of Cleveland, O., a reorganization of the Royal Motor Car Co. was a feature of the managers' meeting on Thursday.

Those in attendance included: Elmer Apperson, Apperson Bros. Automobile Co.; John S. Clarke, Autocar Co.; W. C. Leland, Cadillac Motor Car Co.; Roy D. Chapin and Lee Counselman, Chalmers-Detroit Motor Co.; M. S. Hart, Corbin Vehicle Corp.; J. H. Becker, Elmore Mfg. Co.; Wm. E. Metzger, Everitt-Metzger-Flanders Co.; H. H. Franklin and G. H. Stillwell, H. H. Frankling Mfg. Co.; E. R. Hewitt, Hewitt Motor Co.; A. N. Mayo, Knox Automobile Co.; S. T. Davis, Jr., Locomobile Co. of America; H. A. Lozier, Lozier Motor Co.; C. W. Matheson, Matheson Motor Car Co.; L. H. Kittredge, Peerless Motor Car Co.; A. L. Pope, Pope Mfg. Co.; George Pope, Pope Motor Car Co.; George J. Dunham, Royal Tourist Car Co.; G. E. Mitchell, Alden Sampson Mfg. Co.; R. H. Salmons, Selden Motor Vehicle Co.; I. H. Page, Stevens-Duryea Co.; E. S. Church, Waltham Mfg. Co.; Thomas Henderson, Winton Motor Carriage Co..

Kansas City to Produce the Wonder.

Automobile manufacture in Kansas City, Mo., is to receive an impetus through the activities of the newly organized Wonder Mfg. Co., which is to make a car known as "The Kansas City Wonder." Charles F. Ettwein, who with L. A. Ettwein and H. N. Strait, is backing the enterprise, has leased a building at 4116 Penn street for factory purposes. About 7,000 square feet of floor space is available. The company is capitalized at $35,000 and proposes to build 200 cars during the coming year.

Mora Bids for Newark Capital.

The Mora Motor Car Co., of Newark, N. Y., is seeking assistance from the Newark Board of Trade in the flotation of $50,000 in bonds. Half the issue is said to have been subscribed for by the directors of the company and it is desired that the Board arrange to help in taking the other half. A meeting of the Board was held on the 1st inst., at which the company made its representations, and promised a production of 350 cars by spring if the bonds are sold.

THOMAS BRANCH FOR NEW YORK

Buffalo Company to Handle Its Own Product in the Metropolis—Hurlburt to be Local Representative.

Concurrent with its intended production of a new, light, shaft driven touring model, the E. R. Thomas Motor Co., of Buffalo, N. Y., has made arrangements for the opening of its own branch in New York City. To head the new branch William B. Hurlburt, formerly president of the Garford Motor Car Co. of New York, has been named. Heretofore the Thomas company has been represented in the Metropolis through an agency, but in 1909 the company's products will be marketed in New York directly through its own salesmen.

Hurlburt has sailed for Europe, to visit the foreign shows and study conditions abroad. Upon his return, however, he will prepare for the organization of the new branch and will make ready to take over the territory which will fall within his domain. Associated with Hurlburt in the new work, C. R. Teaboldt is mentioned, the latter having been identified with Hurlburt both in the Garford company and previously.

Detroit Motor Dickering with Marion.

The Detroit Motor Truck Co., of Detroit, Mich., is dickering with Marion, Ind. on a proposal to move to the latter place. The company wants the Marionites to take $50,000 worth of stock, while Marion's offer is a free factory site. The Commercial Club, of Marion, sent investigators to examine the company's holdings and prospects, resulting in a favorable report.

To Build Automobiles in Boone.

Boone, Iowa, has a new automobile company which is to make cars designed by F. B. Sunderlin, formerly of Des Moines. The backers of the enterprise include with Sunderlin, J. L. Stevens and Dr. C. W. Payne,

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In the Retail World.

J. M. Abbott has started a garage in Seguin, Tex. He is also contemplating an automobile stage line between San Antonio, Seguin and Austin.

Moline cars are to be handled in Illinois, in all but a few counties, by R. M. Owen & Co. Through its branch houses the company will appoint all sub-agents in the territory.

C. R. Welsh has bought the garage and automobile supply business of Longren Bros., in Clay Center, Kan. With it he will combine a repair business which he has also purchased.

J. E. Atkinson, of Springfield, Mo., moved, on the 1st inst., from his old location, 311 St. Louis street, to 300-302 East Walnut street. His new quarters comprise a two story building.

W. A. Twombley, formerly with the Buffalo branch of the Diamond Rubber Co., has resigned to go with the Iroquois Rubber Co., of Buffalo, N. Y. He will have charge of the tire and sundry department.

O. E. Eskew, of Allenhurst, N. J., sustained a $5,000 loss recently by a fire which destroyed the second story of the Allenhurst garage on Main street. About $2,000 was covered by insurance on the building.

Laverne Cole, of Rockford, Ill., is moving from North Church street to his new garage building on West State street. The structure has been fitted with every facility for garage and repair work, and features a large show room.

G. P. Hall has purchased the interests of W. J. Doherty in the Sterling Motor Co., of Sterling, Ill. The company is now composed of Hall and Harry Burkholder. The former has been the salesman and demonstrator for the concern.

Napoleon Leticq's garage and automobile repair shop in Worcester, Mass., was damaged by fire on the 23d ult., with a loss of about $300. A gasolene tank, which had been ordered out by the authorities three days before, was blamed.

The garage of S. A. Teel and Edward Werkheiser, on First street, Bangor, Pa., was destroyed by fire on the 25th ult. Ten automobiles were also burned, the total loss being approximately $25,000, on which there was little insurance.

John T. Cook has purchased the interests of R. T. Best in the South End Garage, of Newark, N. J. Work has been begun on a new building at 9 Wright street, which he will occupy, and the business will hereafter be known as Cook's Garage.

Willimantic, Conn., is to have a new garage concern, of which Frank Powell and William B. Imer will be the proprietors. It will be known as the Windham Garage Co., and will occupy the new building erected by S. J. Young on a site back of his hotel on Main street.

A branch in Cleveland has been opened by the Forest City Motor Car Co., of Massillon, O., which makes the Jewel car. C. F. Watts is to be the manager, and the branch will be known as the Jewel Motor Car Co. of Cleveland. It will be located at 2174-80 East Ninth street.

The Aberdeen Automobile Co., of Aberdeen, S. D., operated by Cooke and Morehouse, on South Main street, has been purchased by F. W. Boettcher. The large garage of the company will be kept open at all hours and will operate a day and night automobile livery service.

A petition for a receiver has been filed against the Goodyear Auto Tire Repair Co., of Pittsburg, Pa. The action was brought by A. M. Frauenheim, an investor in the company, who claims that the manager, C. A. Vetter, has appropriated the company's property to his personal use.

John P. Trader has been placed in charge of the branch of the Firestone Tire Rubber Co., in St. Louis, Mo. He succeeds F. O. Sawyer, who has disposed of his interests in the company. The branch will hereafter be the pneumatic tire distributing headquarters for Missouri, Oklahoma, Arkansas, Kansas and Texas.

Schedules in bankruptcy of Max Wineburgh, doing business as the American Automart, 1621 Broadway, New York City, show liabilities amounting to $14,181 and nominal assets of $6,950. He also claims some outstanding accounts, the amount undetermined, as his books were removed, he says, by some unknown person.

Edward T. Barton, of Hartford, Conn., who for years has conducted a tire repair business at No. 20 Church street, is in financial difficulties. At a meeting of his creditors he offered 15 cents on the dollar, which if accepted, will permit him to continue. Otherwise bankruptcy proceedings will be necessary. The liabilities are figured at about $3,500.

The Northwestern Auto Co., of Minneapolis, Minn., has taken over the entire building on Fourth street, south, back of the Security Bank building, now occupied by the Bingham-Jordan Auto Co. and the H. Paulmann Co. About $1,500 will be spent for a complete new front before the Northwestern company moves from its present location on Sixth street.

Minneapolis, Minn., is to have a "Motor Mart," located at First avenue and Tenth street south, the lease for which has been taken by H. Paulman & Co., of Chicago, agents for the Pierce Arrow. The property for the site measures 100x159 feet. The building will be only one story for the present, costing $25,000, but three more stories will be added later, at a total cost of $100,000. The corner store will be taken by the lessees, while the balance of the structure will be rented to several other agencies.

The Week's Incorporations.

Jackson, Mich.—B. M. Byrne Garage Co., under Michigan laws, with $5,000 capital.

Eau Claire, Wis.—American Motor Co., The, under Wisconsin laws, changes name to the Burdick Motor Co.

Joliet, Ill.—Economy Motor Buggy Co., under Illinois laws, with $60,000 capital. Corporators—H. L. Thompson, J. F. Beuret, J. C. Flower, Joliet.

Perth Amboy, N. J.—Perth Amboy Garage Co., under New Jersey laws, with $50,000 capital. Corporators—H. L. Wolff, M. Gibian, H. Brower, F. Hilsdorth, Perth Amboy.

Milwaukee, Wis.—Wisconsin Auto and Tire Repair Co., under Wisconsin laws, with $10,000 capital. Corporators—John J. Rohde, Albert R. Hulick and David D. Smith.

Utica, N. Y.—Iroquois Auto Top Company of Utica, under New York laws, with $15,000 capital. Corporators—Lee L. Laman, Frederick Widmer, Utica, and Frank Fitch, Newport.

Bridgeport, Conn.—Rantz Motor Sales Co., The, under Connecticut laws, with $10,000 capital; to start with $2,500. Corporators—Erwin M. Jennings, F. A. Rantz and Fred D. Unwin.

New York City, N. Y.—Pierson Motor Supply Company, under New York laws, with $20,000 capital. Corporators—H. M. Brown, Helen T. Pierson, and E. J. Forhan, 154 Nassau St., New York.

Portland, Me.—Hurlburt Co., The, under Maine laws, with $400,000 capital; to manufacture and deal in motor cars. Corporators—Clarence E. Eaton, president; T. L. Croteau, treasurer; both of Portland.

Providence, R. I.—Hitchcock-Banks Motor Car Co., under Rhode Island laws, with $25,000 capital. Corporators—Henry D. Banks, Alva S. Hitchcock and Henry P. Eldredge, Jr., with offices at 179 Aborn street.

Buffalo, N. Y.—Joseph Strauss & Son, under New York laws, with $100,000 capital; to manufacture and deal in bicycles and automobiles. Corporators—Joseph Strauss, Theresa Strauss, George C. Strauss, 431 Hickory Street, Buffalo, N. Y.

Detroit, Mich.—Detroit Automobile Dealers Association, The under Michigan laws; to promote the automobile business through shows and races. Corporators—George E. Lane, John P. Schneider, Robert K. Davis, J. H. Brady and George Grant.

Reading, Pa.—Reading Taxicab Company, under Pennsylvania laws, with $20,000 capital; to transport persons, baggage and freight by means of taxicabs and motor cars. Corporators—Hunter Eckert, Harry C. Koller, and Robt. W. Daniel, Reading.

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N. A. A. M. GIVES AID TO A. A. A.

Executive Committee Votes to Extend Financial Assistance—Stoddard Added to the Committee Membership.

In addition to placing a new name on the executive committee's roster and admitting another member to the organization, the regular monthly meeting of the executive committee of the National Association of Automobile Manufacturers, held in New York City on the 2d inst., resulted in the rendering of financial assistance to the American Automobile Association. The committee also set the date for the next annual meeting of the organization as January 20, during the week of the Licensed show at Madison Square Garden.

The Waverley Co., of Indianapolis, Ind., which some time ago bought the Pope-Waverley plant and is operating it, was elected to membership in the association, while C. G. Stoddard, vice-president of the Dayton Motor Car Co., of Dayton, O., was made a member of the executive committee. President Hotchkiss, of the A. A. A., appeared before the members of the committee and made it clear that his association was in considerable need of such financial assistance as the automobile manufacturers could give it. As a result of his representations, the committee decided to recommend that $5,000 be transferred from the N. A. A. M. surplus to the A. A. A. treasury.

The N. A. A. M. committee again took occasion to assert that organization's view that the control of automobile racing in the United States should rest with he A. A. A., and a resolution to this effect was carried. The resolution, however, was declared to have no relation with the announced intention and policy of the A. A. A. of having nothing further to do with motor car racing on circular tracks of a mile or less in circumference.

One of the Pioneers Dead.

Word was received in New York early this week of the death at his home in Somerset, Va., of R. Lindsay Coleman, one of the pioneers of the automobile industry and until its comparatively recent failure, the head of the National Battery Co., of Buffalo. Coleman, however, was best known as an official of the $40,000,000 American Bicycle Co.—the bicycle trust—of which he was president at the time of its collapse in 1903. In 1899 that big combination had commenced to dabble in automobiles, a three-wheel runabout with hot-tube ignition being its first production. It was offered at a popular price and was expected to sweep the country. Instead the Trust had a lot of the junk left on its hands. Later the A. B. C., as it was generally known, organized the International Motor Car Co., which built the Toledo steamer and out of which, by a process of evolution, came the Pope-Toledo gasolene car. When the American Bicycle Co. collapsed after much internal warfare and a bitter fight between Mr. Coleman and Col. Albert A. Pope, which fight continued until the distribution of its assets, Coleman acquired the National Battery Co., and Col. Pope retained practically all else that remained.

American Leatherette in Bankruptcy.

The American Leatherette Mfg. Co., of Buffalo, N. Y., was on the 23d ult., declared a bankrupt, in the United States district court for the western district of New York. William H. Hotchkiss, the referee in bankruptcy, has called a meeting of the creditors for December 14, at 11 a. m. It will be held in the bankruptcy court room, Room 1103, of the D. S. Morgan building, Buffalo.

To Handle B. & S. Goods in New York.

To provide a ready Metropolitan stock of its products, the Billings & Spencer Co., of Hartford, Conn., has appointed Patterson, Gottfried & Hunter, 211 Center street, New York City, distributors for the B. & S. lines in Manhattan and its vicinity. The latter firm will handle the business with dealers on the same basis as the factory.

National Sales is Sales Manager.

The National Sales Corporation, of New York, Chicago and Buffalo, has been appointed factory sales manager for the Bergman Tool Co. The latter concern has bought a large factory site in Buffalo, N. Y., and will manufacture a line of automobile pliers among other accessories.

Clinton Goes with Fiat Import.

Harry T. Clinton, formerly publicity manager for the A. L. A. M., has resigned as secretary of the contest committee of the Automobile Club of America. He has accepted the position of agency manager for the Fiat Import Co., of New York.

Pioneer Auto Top Building Bigger.

Western demands for automobile tops have been such that the Pioneer Auto Top Mfg. Co., of Kansas City, Mo., has begun the erection of a new factory building. It will be two stories high and will be at 1721 Baltimore avenue.

Badger Brass Buys a Factory.

To secure more manufacturing space, the Badger Brass Mfg. Co., of Kenosha, Wis., has purchased the old Meiselbach bicycle factory adjoining its plant. The purchase is subject to court confirmation, but is practically effected.

Goodyear Establishes New Branches.

The Goodyear Tire & Rubber Co., of Akron, Ohio, has established two new branches. The first is in Washington, D. C., at 1026 Connecticut avenue, N. W., and the second in Atlanta, Ga., at 90 Pryor street.

NO CURE, NO PAY, COURT SAYS

Important Decision Involving the Results of Repairs—They Must Prove Effective for a Reasonable Period.

No cure, no pay, is the decision of Justice Lauer, as regards cases where a garage makes repairs upon a car that refuses to run properly for a reasonable length of time thereafter. This decision which is of big importance to owners and repair men alike, was handed down in the Municipal court of the Third Manhattan District in the case of Wyckoff, Church & Partridge vs. August Hecksher, of Huntington, L. I., which came up for trial on Friday, December 4.

The plaintiff sued for $267.12, representing three items: $160 for repairs, $29 for labor and services, and $78.12 for a new armature. Hecksher declared that after a few trips to Huntington and back the car "went dead," and that he refused to pay the bill on the ground that repairs were of no benefit to him or his car. Judge Lauer decided that the plaintiff cannot recover the amount because the car did not continue in "good running condition" for a reasonable length of time. The only item the court ordered Hecksher to pay was the one for the armature.

Beatrice to Try Out Jonz Car.

It will be a trying and anxious day for the demonstrator of the new Jonz car when the machine is put through its paces before the members of the Beatrice Commercial Club, of Beatrice, Neb. The club has agreed to buy $10,000 worth of the stock of the Jonz Auto Co., provided the car performs well and manifests the advantages over other types that are claimed for it by the makers. The manufacturing company is located in Beatrice, and at its small factory is making a car with an engine for which many radical and ingenious features are claimed.

Fickling Leases Big New York Building.

Fickling & Co., Inc., of New York City and New Haven, Conn., have leased a seven story building at 304-6 West Forty-ninth street, Manhattan, where several departments will be added to the present business of top and body manufacture. C. Royce Hough, formerly factory manager of the Pope-Waverley factory, has been engaged as general manager of the company, while D. W. Gluck has been appointed sales manager.

G & J Transfers Graves to Boston.

T. B. Graves, of the G & J Tire Co.'s branch at Chicago, has been appointed New England representative for the company, succeeding D. B. Price. He will make his headquarters in Boston.

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TARIFF HEARING IS POSTPONED

American Makers Allowed Time to Meet Importers' Demand for Reduction—Vital Statistics of Home Industry.

Following the preparation of a brief which was printed in last week's issue of the Motor World, members of the Motor Car Manufacturers Tariff Commission presented themselves before the Ways and Means Committee of the House of Representatives at Washington on Monday last, 7th inst., for a hearing on the question of a revision of the Automobile tariff in connection with the framing of a proposed bill by the house committee. As the representatives of the manufacturers' interests were not prepared to present their claims in full, however, they asked for further time in which to prosecute their investigations of the relative labor conditions here and abroad. The request was granted by Chairman Payne, who allowed an extension of two weeks. Benjamin Briscoe, chairman of the American Motor Car Manufacturers Association acted as spokesman for the manufacturers.

As told exclusively in these columns last week, the handling of the tariff matter has been vested in a joint committee representing the Licensed Association and the National Association of Automobile Manufacturers, as follows:

H. B. Joy, Packard Motor Car Co.; A. L. Riker, Locomobile Co.; L. H. Kittredge, Peerless Motor Car Co.;G. H. Stillfell, Franklin Motor Car Co.; E. R. Thomas, E. R. Thomas Motor Co.; R. E. Olds, Reo Motor Car Co.; and Thomas Henderson, Winton Motor Car Co. Accompanying the committeemen on the Washington trip were Alfred Reeves, manager of the A. M. C. M. A.; Charles Stoddard, vice-president and general manager of the Dayton Motor Car Co., Dayton O.; Job Hedges, counsel for the A. M. C. M. A., and Thomas Francis Moore, the New York press agent, whose activities in organizing and promoting various racing organizations and contests have brought him actively into touch with numerous New York interests, notably those of the automobile importers.

Conflicting stories as to the views of the three controlling organizations of the manufacturers have led to some question as to the unanimity of the position which the tariff commission will take in urging a separate classification for automobiles among the imports instead of their present rating among other "manufactures of metal not otherwise provided for," and an adjustment of the duty on a wage equating basis. Inquiry at the offices of the A. L. A. M., however, brought forth an emphatic denial that the members of that body are working for an increase of the duty of from 45 to 60 per cent., as stated last week by a New York technical paper. Further it was learned from an authoritative source that not simply are the members of the manufacturers' tariff commission in perfect accord in representing the advantages of retaining the present duty, but that their views are shared individually by practicaly all manufacturers, regardless of creed or affiliation.

Incidentally, the representations of Charles M. Sherrill, counsel for the Importers' Automobile Salon, made at Washington on the 27th of November, have roused considerable protest from the American makers' side.

In a statement issued over the signature of E. P. Chalfant, general maneger of the A. L. A. M., early this week, the reverse of the importers' picture of the opulence of the American industry is made to appear with great distinctness. Instead of the continued reign of prosperity which Sherrill depicted, it is stated in all frankness that "American automobile manufacturers have not made exorbitant profits, and a relatively small number of them have made profits at all."

It is pointed out that in 1902, when the American industry first began to assume definite and independent proportions, there were just 51 concerns actively engaged in business. During the ensuing five years and up to the beginning of the present year, no less than 270 new concerns have started up, while 155 have been discontinued. Of the original half-hundred only 21 have survived and are at present in business. The total number of going concerns in the industry at the beginning of 1908 was 166, as shown by the accompanying table. There are now listed 253 American manufacturers of automobiles, "of whom," says the statement in question, "about 100 are turning out cars in fair quantity."

"It is safe to say," Chalfant continues, that not 10 per cent. of the American automobile manufacturers are making money. A great deal of the manufacturers' money goes for experimentation. The large amount of capital required and the character of the business eat into the profit of the business very materially. Clearly the industry deserves proper protection from the normal production and the over-production of the European factories, with their cheap labor, low rate of taxes, and preferential rates on manufacturing machinery. In this country the cost of labor is two and one-half times what it is abroad. Materials abroad are cheaper, ground rent is less, the cost of living is less, the industry is taxed less, and all machinery imported for use in a new industry is admitted duty free or at a preferential tariff.

"When making the statement that 90 per cent. of the imported cars arrived in the shape of naked chassis, it was apparently forgotten that just a little more than 40 per cent. of the cars imported during the last twelve months were complete with bodies, and that bodies for the remaining 60 per cent. (by no means all of them minus bodies) would not keep busy for more than a portion of the year even one of the two carriage makers whom Mr. Sherrill mentions as having been kept alive by the business of the importers, whereas all the carriage makers outside the metropolitan district probably do not collectively get a dozen bodies to manufacture in a year for imported cars.

"Tariff rates must afford ample protection to American made goods, and provide a customs duty on imports equal to the difference in cost of production here and abroad."

In the course of an interview subsequent to Monday's visit of the manufacturers' commission to Washington, Benjamin Briscoe, president of the Maxwell-Briscoe Motor Co., is credited with the declaration that although his company has turned out no less than 8,000 runabouts during the last three years, they never have made more than $86 profit per car.

Giving a rough estimate of the cost of production, he said that a car costing $1.000 to build represents about $375 for labor, $600 for the material and $25 for the material used in operating the plant. Abroad the same car can be built for about $595, representing $420 for material, $150 for labor and $25 for operating expenses. With freight charges and 45 per cent. duty added to this the car could be landed here for about $900: which, he thought, goes to show that the present duty is too low, rather than too high.

Vital Statistics of the American Automobile Industry from 1902 to 1907.

	1902	1903	1904	1905	1906	1907	Totals.
New concerns started	*	71	54	51	43	51	270
Discontinued that year	18	30	40	38	29	..	155
Concerns carried over into following year	33	41	14	13	14	..	†115

* Concerns in business 1902, 51; of which 21 now survive.
† In business December 31, 1906, 166.

Harrison Estate Declared Bankrupt.

The estate of William Harrison, president of the Harrison Automobile Co., the Harrison Wagon Works, and the Harrison Land Co., of Grand Rapids, Mich., has been declared bankrupt, in the United States district court. The case was one in involuntary bankruptcy brought some time ago against Harrison personally after his automobile company got into financial difficulties. Harrison filed an answer and demanded a jury trial, but he died before the case was heard. Kirk E. Wicks, referee, has been put in charge of the estate, and schedules of assets and liabilities will be filed with him.

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WHO WILL EXHIBIT AT CHICAGO

Show Roster Gives a List of 244 Stands, of Which 94 Will Display Cars—Full Catalog of the Exhibitors.

With customary promptness the list of exhibitors at the Chicago show has been announced long before the opening of the first of the New York exhibitions, although the Chicago dates are still very remote—February 6-15. The roster shows a total of 244 stands, of which 94 will be given over to the display of cars and 131 to the exhibits of parts and accessories. In addition to these, there will be no less than 19 motorcycle displays. The floor plans show that the arrangement of exhibits in the coliseum and First Regiment armory will be much the same as in former years, the main floors and the Coliseum basement being devoted principally to car exhibits while the galleries will be used to stage the accessories. The elimination of the independent commercial section does away with the old Tattersalls academy adjunct of last year's show. The complete list follows:

Coliseum — Main Floor.

Winton Motor Carriage Co., Cleveland, Ohio.
Pope Mfg. Co., Hartford, Conn.
E. R. Thomas Motor Co., Buffalo, N. Y.
Stevens-Duryea Co., Chicopee Falls, Mass.
Peerless Motor Car Co., Cleveland, Ohio.
Elmore Mfg. Co., Clyde, Ohio.
Woods Motor Vehicle Co., Chicago, Ill.
Thomas B. Jeffery & Co., Kenosha, Wis.
Babcock Electric Carriage Co., Buffalo, N. Y.
Baker Motor Vehicle Co., Cleveland, Ohio.
F. B. Stearns Co., Cleveland, Ohio.
Reo Motor Car Co., Lansing, Mich.
Packard Motor Car Co., Detroit, Mich.
Everitt-Metzger-Flanders Co., Detroit, Mich.
Premier Motor Mfg. Co., Indianapolis, Ind.
Studebaker Automobile Co., South Bend, Ind.
National Motor Vehicle Co., Indianapolis, Ind.
Haynes Automobile Co., Kokomo, Ind.
The White Company, Cleveland, Ohio.
Dayton Motor Car Co., Dayton, Ohio.
Cadillac Motor Car Co., Detroit, Mich.
Maxwell-Briscoe Motor Co., Tarrytown, N. Y.
Locomobile Co. of America, Bridgeport, Conn.
H. H. Franklin Mfg. Co., Syracuse, N. Y.
Apperson Bros. Automobile Co., Kokomo, Ind.
Buick Motor Co., Flint, Mich.
Holzman Automobile Co., Chicago, Ill.
Pope Motor Car Co., Hartford, Conn.
American Locomotive Co., 1886 Broadway, New York.
George N. Pierce Co., Buffalo, N. Y.
Olds Motor Works, Lansing, Mich.
Corbin Motor Vehicle Corporation, New Britain, Conn.
Matheson Motor Car Co., Wilkes-Barre, Pa.
Knox Automobile Co., Springfield, Mass.
The Bartholomew Co., Peoria, Ill.
Lozier Motor Co., Broadway & 55th street, New York.
De Luxe Motor Car Co., Detroit, Mich.
Mitchell Motor Car Co., Racine, Wis.
Ricketts Auto Works, South Bend, Ind.

Coliseum Annex — First Floor.

Chalmers-Detroit Motor Co., Detroit, Mich.
Simplex Motor Car Co., Mishawaka, Ind.
York Motor Car Co., York, Pa.
Austin Automobile Co., Grand Rapids, Mich.
Oakland Motor Car Co., Pontiac, Mich.
Pennsylvania Auto-Motor Co., Bryn Mawr, Pa.
Midland Motor Co., Moline, Ill.
Welch Motor Car Co., Pontiac, Mich.

First Regiment Armory — Main Floor.

Kissel Motor Car Co., Hartford, Wis.
Speedwell Motor Car Co., Dayton, Ohio.
Buckeye Mfg. Co., Anderson, Ind.
Jackson Automobile Co., Jackson, Mich.
Columbus Buggy Co., Columbus, Ohio.
Moon Motor Car Co., St. Louis, Mo.
Atlas Motor Car Co., Springfield, Mass.
Dorris Motor Car Co., St. Louis, Mo.
Overland Automobile Co., Indianapolis, Ind.
Cartercar Company, Detroit, Mich.
The Waverley Co., Indianapolis, Ind.
W. H. Kiblinger Co., Auburn, Ind.
Mora Motor Car Co., Newark, N. Y.
Nordyke & Marmon Co., Indianapolis, Ind.
Moline Automobile Co., East Moline, Ill.
Auburn Automobile Co., Auburn, Ind.
Anderson Carriage Mfg. Co., Anderson, Ind.
Chicago Coach & Carriage Co., Chicago, Ill.
Rapid Motor Vehicle Co., Pontiac, Mich.
Black Mfg. Co., Chicago, Ill.
Meteor Motor Car Co., Bettendorf, Iowa.
Streator Motor Car Co., Streator, Ill.
Stayer Carriage Co., Chicago, Ill.
Anderson Carriage Co., Detroit, Mich.
Model Automobile Co., Peru, Ind.
J. V. Lindsley & Co., Dowagiac, Mich.
Ft. Pitt Motor Mfg. Co., New Kensington, Pa.
Wayne Works, Richmond, Ind.
Gaeth Automobile Co., Cleveland, Ohio.
Berliet Import Co., Chicago, Ill.
Rauch & Lang Carriage Co., Cleveland, Ohio.
C. P. Kimball & Co., Chicago, Ill.

Coliseum Basement.

Zimmerman Mfg. Co., Auburn, Ind.
Joseph Devore, Chicago, Ill.
Schacht Mfg. Co., Cincinnati, Ohio.
Randolph Motor Car Co., Chicago, Ill.
The Rider-Lewis Motor Car Co., Muncie, Ind.
Interstate Automobile Co., Muncie, Ind.
The Bendix Co., Chicago, Ill.
E. R. Thomas Motor Co., Buffalo, N. Y.
Owen Thomas Motor Car Co., Janesville, Wis.
Grabowsky Power Wagon Co., Detroit, Mich.
20th Century Motor Car Co., South Bend, Ind.
Clark-Hatfield Auto Co., Oshkosh, Wis.
Mier Carriage & Buggy Co., Ligonier, Ind.
The Cameron Car Co., Beverly, Mass.
The Fellwock Auto & Mfg. Co., Evansville, Ind.

Coliseum Annex—Second Floor.

Minneapolis Motor Cycle Co., Minneapolis, Minn.
The Pierce Cycle Co., Buffalo, N. Y.
Merkel-Light Motor Co., Pottstown, Pa.
Reading Standard Co., Reading, Pa.
Hornecker Motor Mfg. Co., Genesee, Ill.
Armac Motor Co., Chicago, Ill.
New Era Gas Engine Co., Dayton, Ohio.
Magnet Motor Co., Chicago, Ill.
Hendee Mfg. Co., Springfield, Mass.
Harley-Davidson Motor Co., Chicago, Ill.
Excelsior Motor & Mfg. Co., Chicago, Ill.
Wagner Motor Cycle Co., St. Paul, Minn.
Consolidated Mfg. Co., Toledo, Ohio.
Ovington Motor Co., New York.
Aurora Automatic Machinery Co., Aurora, Ill.
Thiem Mfg. Co., Minneapolis, Minn.
The Auto-Bi Co., Buffalo, N. Y.
American Motor Co., Brockton, Mass.
N. S. U. Motor Co., New York.

Coliseum Gallery.

Motor & Accessory Mfrs., Inc., Union Bldg., Newark, N. J.
The Sprague Umbrella Co., Norwalk, Ohio.
Cooks Standard Tool Co., Kalamazoo, Mich.
A. O. Smith Co., Milwaukee, Wis.
Imperial Brass Mfg. Co., 3455 South Jefferson street, Chicago.
Hartford Suspension Co., 150 Bay street, Jersey City, N. J.
C. A. Shaler Co., Waupun, Wis.
Valentine & Co., 257 Broadway, New York.
The Republic Rubber Co., Youngstown, Ohio.
Auto Improvement Co., 316 Hudson street, New York.
American Electrical Novelty & Mfg. Co., 304 Hudson street, New York.
Hancock Mfg. Co., Charlotte, Mich.
Atwater Kent Mfg. Works, 42 N. 6th street, Philadelphia, Pa.
Warner Instrument Co., Beloit, Wis.
N. Y. & N. J. Lubricant Co., 14 Church street, New York.
F. H. Wheeler, P. O. Box 276, Indianapolis, Ind.
Vesta Accumulator Co., 1334 Michigan avenue, Chicago, Ill.
Whitney Mfg. Co., Hartford, Conn.
Motsinger Device Mfg. Co., Pendleton, Ind.
A. W. Harris Oil Co., Providence, R. I.
Morgan & Wright, Detroit, Mich.
R. E. Dietz Co., 60 Laight street, New York.
Timken Roller Bearing Axle Co., Canton, Ohio.
The Hartford Rubber Works Co., Hartford, Conn.
McCord Mfg. Co., Detroit, Mich.
Chicago Battery Co., Chicago, Ill.
The Diamond Rubber Co., Akron, Ohio.
Brown-Lipe Gear Co., Syracuse, N. Y.
Spicer Universal Joint Mfg. Co., Plainfield, N. J.
The Veeder Mfg. Co., Hartford, Conn.
Gray & Davis, Amesbury, Mass.
G & J Tire Co., Indianapolis, Ind.
National Carbon Co., Cleveland, Ohio.
The B. F. Goodrich Co., Akron, Ohio.
C. F. Splitdorf, 265 Walton avenue, New York.
Gabriel Horn Mfg. Co., Cleveland, Ohio.
Goodyear Tire & Rubber Co., Akron, Ohio.
Long Mfg. Co., 119 Michigan street, Chicago, Ill.
Swinehart Clincher Tire & Rubber Co., Akron, O.
Jones Speedometer, 127 West 32d street, New York.
R. E. Hardy Co., 86 Watts street, New York.
Warner Gear Co., Muncie, Ind.
Diamond Chain & Mfg. Co., Indianapolis, Ind.
Wm. Cramp & Sons Ship & Engine Bldg. Co., Philadelphia, Pa.
The Electric Storage Battery Co., Philadelphia, Pa.
Pennsylvania Rubber Co., Jeannette, Pa.
Heinze Electric Co., Lowell, Mass.
Baldwin Chair & Mfg. Co., Worcester, Mass.
Remy Electric Co., Anderson, Ind.
Duff Mfg. Co., Pittsburg, Pa.
Firestone Tire & Rubber Co., Akron, Ohio.
M. & A. M., Inc., office.
Never-Miss Spark Plug Co., Lansing, Mich.
Oliver Mfg. Co., 203 S. Desplaines street, Chicago.
S. F. Bowser & Co., Inc., Fort Wayne, Ind.
The Edmonds & Jones Mfg. Co., Detroit, Mich.
Kokomo Electric Co., Kokomo, Ind.
Byrne-Kingston & Co., Kokomo, Ind.
Weed Chain Tire Grip Co., 28 Moore street, New York.
The Pantasote Co., 11 Broadway, New York.

Coliseum Annex - Second Floor.

Stewart & Clark Mfg. Co., 502 Diversey boulevard, Chicago.
C. T. Ham Mfg. Co., Rochester, N. Y.
Gray-Hawley Mfg. Co., 605 Fort street, Detroit, Mich.
J. H. Sager Co., Rochester, N. Y.
Ajax-Grieb Rubber Co., 1776 Broadway, New York.
Joseph Dixon Crucible Co., Jersey City, N. J.
Ross Gear & Tool Co., Lafayette, Ind.
National Coil Co., Lansing, Mich.
Adam Cooks Sons, 313 West street, New York.
Continental Caoutchouc Co., 43 Warren street, New York.
Leather Tire Goods Co., Newton Upper Falls, Mass.
Connecticut Telephone & Electric Co., Meriden, Conn.
Witherbee Igniter Co., 591 West 43d street, New York.
Motz Clincher Tire & Rubber Co., Akron, Ohio.
Whiteley Steel Co., Muncie, Ind.
National Battery Co., Buffalo, N. Y.
L. C. Chase Co., 89 Franklin street, Boston, Mass.
Michelin Tire Co., Milltown, N. J.
The Globe Machine & Stamping Co., Cleveland, O.
The Hoffecker Co., Motor Mart, Boston,, Mass.
Fox Metalic Tire Belt Co., 15 Murray street, New York.
The Randall-Faichney Co., Boston, Mass.
Avery Portable Lighting Co., Milwaukee, Wis.
Pittsfield Spark Coil Co., Dalton, Mass.
Limousine Carriage Mfg. Co., 3515 Michigan avenue, Chicago, Ill.
Empire Automobile Tire Co., Trenton, N. J.

First Regiment Armory Gallery.

London Auto Supply Co., 1229 Michigan avenue Chicago, Ill.
Austro-American Separator Co., Cleveland, Ohio.
Edward Neely & Co., 244 Wells street, Chicago.
Metal Stamping Co., 40 Hubert street, New York.
Central Rubber Co., 82 Lake street, Chicago, Ill.
Vivax Storage Battery Co., 2224 Michigan avenue, Chicago, Ill.
Commercial Battery Electric Co., 204 Michigan street, Chicago, Ill.
Morrison-Ricker Mfg. Co., Grinnell, Iowa.
S. Breakstone, 900 Fisher Bldg., Chicago, Ill.
American Thermo-Ware Co., 16 Warren street, New York.
Stromberg Motor Devices Co., 1253 Michigan avenue, Chicago, Ill.
Standard Varnish Works, 2620 Armour avenue, Chicago, Ill.
McCanna Mfg. Co., 56 N. Jefferson street, Chicago, Ill.
Monitor Mfg. Co., 1425 Washington street, Boston, Mass.
Eugene Arnstein, 35th & Shields avenue, Chicago.
Excelsior Supply Co., 233 Randolph street, Chicago.
Quincy, Manchester, Sargent Co., Plainfield, N. J.
Ennis Rubber Mfg. Co., Newark, N. J.
Fred W. Smith, Aberdeen, S. D.
High Frequency Ignition Co., 2309 S. Main street, Los Angeles, Cal.
Westinghouse Co., Pub. Dept., Pittsburg, Pa.
Goshen Rubber Works, Goshen, Ind.
Elite Mfg. Co., Ashland, Ohio.
Universal Tire Protector Co., Angola, Ind.
Dayton Rubber Co., Dayton, Ohio.

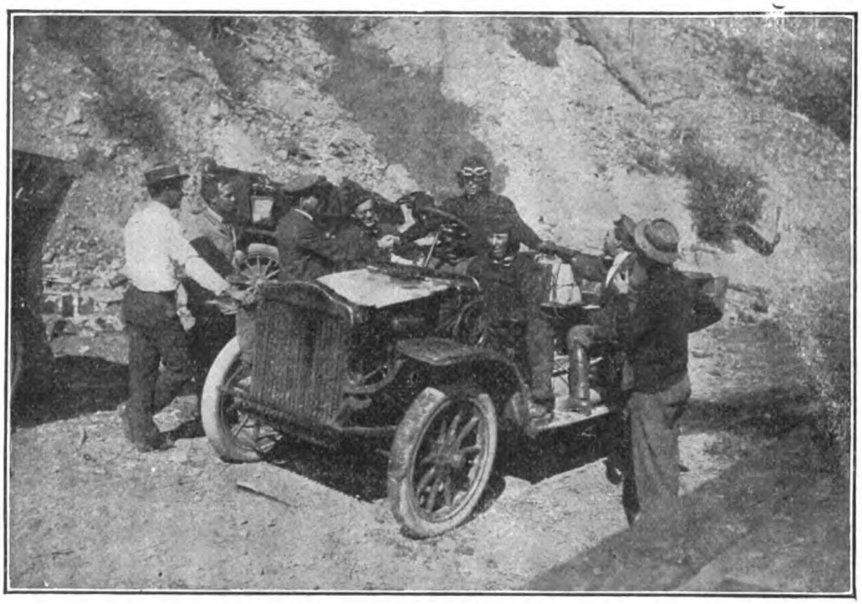
Coliseum Basement.

Duplex Coil Co., Fond du Lac, Wis.
Norton Co., Worcester, Mass.
Chicago Recometre Co., 1251 Michigan avenue, Chicago, Ill.
Pfanstiehl Electrical Laboratory, North Chicago, Ill.
Triple Action Spring Co., 67 E. 21st street, Chicago, Ill.
Garage Equipment Co., 201 22d street, Milwaukee, Wis.
Ernst Flentje, 1643 Cambridge street, Cambridge, Mass.
Fulton & Zinke, 1256 Michigan avenue, Chicago.
F. E. Sparks, 1337 Michigan Blvd., Chicago, Ill.
The Troy Carriage Sun Shade Co., Troy, Ohio.
Chicago Wind Shield Co., 235 Johnson street, Chicago, Ill.
Vehicle Top & Supply Co., 900 Cass avenue, St. Louis, Mo.
Longdin-Brugger Co., Fond du Lac, Wis.
High Wheel Auto Parts Co., Muncie, Ind.
Champion Ignition Co., Flint, Mich.
E. T. Burrowes Co., 70 Free street, Portland, Me.
Vanguard Mfg. Co., Joliet, Ill.
Royal Equipment Co., Bridgeport, Conn.
Bosch Magneto Co., 1253 Michigan avenue, Chicago, Ill.
The Buda Foundry & Mfg. Co., Railway Exchange Bldg., Chicago, Ill.
Nadall Mfg. Co., 1430 Michigan avenue, Chicago.

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WHITE WINS

Los Angeles to Phoenix Road Race



A brilliant victory was scored by the White Steamer in the recent stock-car race through the mountains and over the desert from Los Angeles, California, to Phoenix, Arizona. Once again the White demonstrated that in a stock-car competition and over roads such as exist in most parts of the country it is faster than any other type of machine. Such a contest as the Los Angeles-Phoenix race is far more significant than a race between specially built cars over specially selected and carefully prepared highways. This latest White victory indicates to the purchaser just what kind of service he may expect from the type of car which he can buy and over roads such as he will have to cover.

The White is the fastest car on give-and-take roads, not because it has the highest-powered engine, but because it delivers at the rear wheels a larger percentage of the power of the engine than any other type. Furthermore, that power is available under all conditions, whether running fast or slow, and no time is lost in shifting gears or in waiting for the engine to "pick up speed." In other words, under ordinary road conditions, the flexibility of the White engine will do what great power in other types of engines cannot do.

Write for circular describing the 1909 models.

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PHILADELPHIA, 629-33 N. Broad St.

PITTSBURG, 138-48 Beatty St.
CLEVELAND, 407 Rockwell Ave.
CHICAGO, 240 Michigan Ave.

SAN FRANCISCO, Market St. at Van Ness Ave.
ATLANTA, 120-122 Marietta St.

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The Congressional Viewpoint.

Tickets for Washington enjoy prospects of a good sale among those of the trade who are interested or affected by the tariff on motor cars and who are concerned about seeing it kept where it is. Many of the visitors will doubtless be oppressed with spells of the feeling which is common to most folks having no more than occasional contact with congress, that the big institution on Capitol Hill is hard to fathom because of the difficulty of getting the congressional viewpoint. To sell a man goods or to try a case before a court of law presents no great perplexities as to the general principles of campaign, but the aggregation of men known as "congress" are in the tariff matter neither prospective customers nor jurists on the bench. That particular group constituting the ways and means committee of the house of representatives, in the hands of which committee any changes in the motor car tariff largely lie, is supposed to be actuated in its deliberations and decisions by no other considerations than patriotism and the public good, which theoretically removes it from suspicion of either self-interest or a weakness for purely technical judgments.

Nevertheless, those familiar with Washington matters know that members of congress are very human in their limitations. The old campaigners on the ways and means committee have won their places there by recognizing public desire and public good as the same things, except when the speaker of the house shows them that his desire is it for the moment. Popular agitation for revision of the tariff has ultimately got to be met by some reductions, and in recognition of this the committee is cautiously finding out who will holler the least when the operation takes place, and on what items the schedule may be trimmed with the greatest flourish.

Whether the automobile be represented to the committee as a luxury like champagne or an every day article like wool cloth will make little difference. Even the elaborate statistics that will be elicited as to the industry and of which the committee will gravely make record, will not be subjected to much analysis or taken as seriously as the compilers might wish. But if the array of good, solid, likable American business men earnestly desiring to have the motor car tariff kept exactly where it is, greatly preponderates over the number of importers who want it removed or lowered, and these same American business men show up numerically strong in the committee room in the role of live citizens in their respective communities, having a touch of fighting blood in their veins, the tariff on automobiles will not be changed.

Cone Clutch Improvement.

Clutch construction has undergone many alterations in the course of the development of the motor car and it is remarkable that in so large a number of instances of otherwise advanced design that type of clutch is still employed which most nearly resembles the device associated with the earliest types of sliding change gear. Yet the plain cone clutch, however well it may have served its purpose in the past, and regardless of the manifold improvements which have been effected in its mounting and in other of its details, is yet possessed of so many drawbacks that in order to obviate them as completely as possible it becomes mechanically rather more complex than is wholly to the liking of the average engineer and much more so than is to the liking of the non-technical driver who is occasionally forced to wrestle with its parts.

Among the objections to its use which may be advanced, one of the most important is that its actuation requires a not inconsiderable amount of longitudinal pressure. In order to counteract this either the transmission mechanism must be made to include some sort of thrust bearing, or else the clutch itself must be so contrived as to absorb its own reaction, so to speak, thus becoming virtually self-contained. The most familiar method of bringing this about is to invert the two conical members which constitute the clutch proper, causing the driven cone to engage the female member attached to the fly wheel from the front or engine side. This system has been used to a considerable extent and with fairly good results. Several considerations which weigh against it, however, have caused it to be abandoned by a number of makers who were firm adherents of it for a time.

A possible combination of the two types of direct and inverted cone has recently come to notice in foreign practice, which seems to do away with several of the objections against either individual type, also combining with some of their advantages the additional feature of permitting the use of a large amount of frictional surface without requiring the large diameter which is one of the most prominent faults of the simple type. In this arrangement two pairs of cones are employed, the fly wheel having a conical face formed directly in it, and a second and inverted face formed by a ring member which is positively attached to it. Two male cones placed back to back and separated by a spring are adapted to engage the fly wheel surfaces.

Against the unquestionable complication of this arrangement it must be admitted that the elements of self-containment, freedom from the necessity for rotating thrust bearings, large area of contact and possible small diameter, count strongly in its favor. Further, it should prove less difficult to align than the plain cone types, provided the shaft is freed from dead weight. With a small amount of movement to release or engage, and with the possibility of considerable slippage without serious abrasion of the contacting surfaces, the idea is suggestive of numerous advantages which may be obtained in no other way with cone clutches.

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FORCE DEVELOPED IN COLLISIONS

Tremendous Effects of Kinetic Energy in Sudden Changes of Direction—Startling Possibilities of Motion.

Probably no one who has had the painful experience of being thrown from a motor car which was traveling at a high rate of speed has cared to stop and figure out just how much kinetic energy his body possessed at the instant it struck earth, nor how much force was involved in the impact when the car landed against some friendly obstacle. Nevertheless it is possible to calculate the forces in action at such times, and some consideration of their nature leads to a sane conclusion as to the importance of exercising a due amount of caution when driving a machine which is capable of very high rates of speed.

In its own serious way, the Scientific American analyses the potential source of damage which is stored in a car when running at various speeds, and incidentally reveals why in some cases cars which have collided with some permanent object when going very fast have been, so to speak, "smashed all to pieces." "An automobile, or, for that matter, any very swiftly moving vehicle is, in effect, a projectile which differs in no essential respect from a shell discharged from a modern field piece," that authority explains.

The kinetic energy which a projectile possesses in virtue of its mass and velocity is necessarily expended in destructive action when the flight of the projectile is suddenly arrested by an obstacle of any sort. The destructive effects are divided between the projectile and the obstacle in the inverse ratio of their respective powers to resist deformation. . . . . In automobiles and other vehicles the conditions are essentially the same as in the case of the projectile. If, for example, the brakes are applied to an automobile when it is running at full speed, the kinetic energy of the forward motion is gradually absorbed by the friction between the brakes and the wheels, and converted into heat, and the car is gradually brought to rest. Again, if the motor is stopped without applying the brakes, the energy of motion is gradually used up in overcoming the resistance of the air, the rolling resistance at the points of contact with the road, and the friction at the axle bearings. The car, therefore, comes to rest, after running a distance inversely proportional to the magnitude of these frictional and other resistances.

"To continue the comparison with a projectile, let us suppose that the car, running at full speed, is stopped against a light picket fence, and the motor is stopped. The car will shatter the fence and go through it almost unharmed and with little loss of speed, but if it encounters a succession of similar obstacles it will finally be brought to a stop. Nor would one solid board fence stop the automobile, though it would reduce its speed, but the car would probably dash itself to pieces against a rocky cliff or stout masonry wall, without materially affecting either of these obstacles. In short, the weaker of two colliding bodies sustains most of the damage caused by the collision.

"The effect depends also on the distance run by the vehicle between the first moment of impact and its final stoppage. Other things being equal the intensity of the destructive forces is inversely proportional to this distance, and the disintegrating effect of these forces depends more on their absolute intensity than upon the length of time during which they act. Hence a sudden stoppage, as in the case of collision with a stone wall, develops forces which the strongest materials cannot withstand.

"At the moment of impact against an obstacle the moving car possesses a certain kinetic energy which is equal to the product of the force required to bring it to rest multiplied by the distance through which that force acts. The kinetic energy is also equal to the mass of the car multiplied by half the square of its velocity. For a car weighing one ton and running at a speed of 30 miles per hour the kinetic energy is equal to 60 foot tons, or the work done in lifting the car 60 feet. In other words, the velocity of 30 miles per hour is about equal to the velocity acquired in falling 60 feet, and if a car moving with this velocity strikes an immovable obstacle it will fare as badly as it would in striking the ground after falling 60 feet. The force of the impact is proportional to the square of the velocity, and the sudden stoppage of a car going 60 miles an hour is equivalent to a fall of 240 feet.

"Now let us examine the conditions existing immediately after the impact. An automobile is an assemblage of many parts, of various degrees of strength. The shock is transmitted from the point of impact through all the parts, producing in each a tendency to break at its weakest point.

"The work done in pulling apart a steel bar one foot long and one inch square is equal to nearly 4½ foot tons, but an automobile weighing one ton and running 60 miles an hour possesses energy enough to sunder 25 such bars, or 50 steel bars of the same cross-section and half the length either successively or simultaneously. The same amount of energy would suffice to shear off 260 1-inch steel bolts or rivets, 50 ¾-inch bolts, 2,500 oak pins one inch square, or 25 oak beams 10 inches square. The energy of the car is one-fourth greater than that of the 12-pound shot which leaves the muzzle of a 3-inch gun with a velocity of 1,000 feet per second. Such a shot is crushed on striking an armor plate of hardened steel, although it is protected by a steel cap, and as a whole is stronger than any part of an automobile.

"In a head-on collision between two cars of equal weight and speed the amount of kinetic energy destroyed is twice the amount involved in the impact of either car against a fixed obstacle, but the destructive action is divided equally between the two cars so that the effect on each is equivalent to the effect produced by running into a stone wall. In a collision between a heavy and a light car, the latter suffers." ,

COMING EVENTS

December 12, Denver, Col.—Denver Motor Club's hill climbing contest, Lookout Mountain.

December 12, Worcester, Mass.—Worcester Automobile Club's 200 miles reliability and endurance contest.

December 31-January 7, New York City—American Motor Car Manufacturers' Association's annual show in Grand Central Palace.

January 1-2—Quaker City Motor Club's two days endurance run, Philadelphia to Wilkes-Barre, Pa., and return.

January 16-23, New York City—Association of Licensed Automobile Manufacturers' annual show, Madison Square Garden.

January 21-31, Los Angeles, Cal.—Automobile Dealers Association's show.

January 23-30, Philadelphia, Pa.—Philadelphia Automobile Trade Association's annual show.

January 27-February 3, Philadelphia, Pa.—Automobile Trade Association's eighth annual show, Second Regiment armory.

February 6-15. Chicago. Ill.—National Association of Automobile Manufacturers' Show, Coliseum and First Regiment Armory.

February 15-20, Cleveland, O.—Automobile show, Central Armory.

February 15, Detroit, Mich.—Detroit Automobile Dealers Association's show, Wayne Pavilion.

February 15-20, St. Louis, Mo.—Automobile Manufacturers and Dealers Association's annual show.

February 16-18, Denver, Col.—Denver Motor Club's first annual show, Auditorium.

February 22, Ceveland, O.—Cleveland Automobile Dealers Company's show, Central Armory.

February 27-March 3, Hartford, Conn.—Automobile Dealers' Association show.

March 1-6, Omaha, Neb.—Omaha and Council Bluffs dealers' show, Auditorium.

March 6-13, Boston, Mass.—Boston Automobile Dealers Association's (Inc.) seventh annual show, Mechanics Building.

March 10-13, Memphis, Tenn.—Automobile show, Auditorium building.

March 27-April 3, Pittsburg, Pa.—Automobile Dealers Association's show, Duquesne Garden.

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ART FEATURES FOR PALACE SHOW

Early English Decorative Scheme Includes Much Statuary—Automobiling Scenes to Form Huge Frieze.

"Wisdom instructing Youth in the mysteries of automobile construction," is to be the piece de resistance about which will center the decorative scheme of the Grand Central Palace when the first of the New York Shows is thrown open to the public on New Year's Eve. Besides Wisdom numerous other allegorical figures will grace the



STATUE FOR LOBBY

hall which has wont to be so barren in previous years, and these taken in conjunction with the general treatment which is characterized as being of "an early English style," will serve to make the setting of the show quite the most effective yet produced in the Palace.

Because the Palace Show is to be the only international exhibition of the year, the show committee of the American Motor Car Manufacturers' Association has seen the wisdom of searching abroad for the materials to be used in framing the setting. Accordingly representatives of the S. R. Ball Co., have been scouring England, France and Italy as well as this country for ideas to be used in embellishing the exhibition in befitting style. Wisdom personified in a figure of heroic mould is the crowning achievement, but it is not to be permitted to stand alone. The decorations instead of being confined to the interior of the building will be displayed externally in the form of an elaborate port cochere, while the entrance hall will be treated with the same care to rob it of its present dull appearance.

As announced some time ago, the first impression of the show will be of no small brilliancy, caused by the illumination of the port cochere, with its statuesque supporting figures, its ornamental balustrade and the illuminated ornamental background above, which embodies a deep frame surrounding an oil painting of a very wonderful car in mad flight and leaving behind it an illuminated trail of comet-like aspect.

The vestibule inside will be draped with the flags of the nations and with ornamental large urns, while at the stairway approach will be two life size female figures resting on an eagle supporting a wheel, one of which is here depicted. They are finished in verde antique, which is a press agent name for copperish green. The entire ceiling of the entrance hall leading to the main stairways will be canopied in silk with streams of electric light radiating from the center. The side walls will be decorated with mural paintings typifying various scenes dear to the heart of the motorist.

The main auditorium hall or "court of honor" will be the section subjected to the early English style of treatment. The balconies will be partially hidden by red orange colored tiling, which will extend some three feet outwards over the main hall, while carried down to a level and meeting the tops of the present capitals of the halls will be a frieze of scenes depicting automobile races and contests, including the Glidden Tour, the Vanderbilt Cup Race, and the Savannah road race. The main auditorium will have its ceiling covered with a fabric, atmospheric blue in color, which combined with lattice work, boxes, and urns of flowers and growing plants, will give to the gallery a hanging garden effect. At the end of the hall now occupied as a part of the stage, a real garden will be formed by bay trees, evergreens and flowers, together with a number of singing birds hung in gilded cages. By means of immense mirrors the effect will be accentuated and duplicated.

To divide the garden from the general exhibition hall, the show committee has selected "Wisdom and Youth," otherwise described as "a striking piece of statuary some 15 feet in length and 5 or 6 feet high, with life sized allegorical figures representing "Wisdom instructing Youth in the mysteries of automobile construction." In addition ten statues of original composition and heroic size will uphold garlands of flowers and streamers of electric light, which will lead to a sunburst chandelier in the center of the hall.

For the general decorations the prevailing tone will be white and gold, with festoonings of Berlin green, while for the floor covering, 8,500 yards of a specially woven bronze colored fabric will be used, instead of the usual denim. The tables, counters, railing and furniture will be a rich dark green in color, while the signs displaying the names of each car or exhibitor, will be of white with gold letters and moulding and green shading. They will be made of compo-board instead of oilcloth while the accessory exhibits will be graced in addition by a silk gold fringed banner suspended from a standard.

Refreshments this year will be served from a modern version of an old English inn, located in the third floor. It was at first intended to build a German wine cellar, it is painstakingly explained, but in order to harmonize with the prevailing style of architecture the management decided to



GODDESS OF SPEED

change it into a room modeled after the interior of a famous Kentish inn. To this end a stone wall effect will divide the room from the main exhibition hall, while old chandeliers, antique pewter dishes and mugs will lend color to the effect.

Dates for the Pittsburg Show.

The dates selected for the automobile show at Pittsburg, Pa., are March 27 to April 3, inclusive, and the affair will be held at the Duquesne Garden. The management will be in the hands of a committee of the automobile dealer's association, as in previous years.

Accessory Makers to Dine at Sherry's.

The Motor and Accessory Manufacturers, Inc., has decided to hold annual dinners, during show time each year. The first of these affairs will take place at Sherry's, New York City, on Wednesday evening, January 20.

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BOUNCING UP DOLLY COLE HILL

Baldwin Wins Rhode Island Hill Climbing Trophy a Third Time—Thrilling Speed on Rough and Snakey Incline.

Virtually winning the C. Prescott Knight cup for the third successive year, L. F. N. Baldwin, driving a Stanley steamer, became entitled to the permanent possession of that trophy on Saturday last, 28th inst., at the Rhode Island Automobile Club's seventh annual hill climb, although the "official results" are at present witheld. The contest was on "Dolly Cole" hill, Foster, near Providence—a slope six-tenths of a mile in length with an average grade of 7 per cent. Four events were on the program, a free-for-all being the feature of the afternoon.

It was in the latter event that Baldwin made the unofficial whirlwind time of 34 seconds, according to the clocker's watches, it having been announced just before the contest started that for some reason or other no official times would be given out for several weeks. In the field against Baldwin were three other contenders: William Bourque in a 50 horsepower Knox, J. P. Grady in a 40 horsepower Pope-Hartford and Joe Matson at the wheel of a 30 horsepower Corbin. Starting 50 feet back of the mark, the cars had the advantage of a slight down grade to increase their momentum before hitting the hill. All four made good ascents, but Baldwin in the specially built steam freak, again showed that at a short distance in a concentrated burst of speed, such a car is beyond the class of stock gasolene machines of the sort that are capable of sustaining high speed for hundreds of miles. Nevertheless, under the conditions of the deed of gift, Baldwin proved conclusively that he is entitled to the cup he has been striving three years to win. His ascent had some thrill in it, too. The hill was considerably curved and when Baldwin negotiated the dangerous "S" bend, he skidded around its snakey turns, on two wheels, slewing from one side of the road to the other, in a manner that jarred the nerves of the crowd of spectators. Rough stretches on the course made the steam kettle and some of the other contestants bounce along in wild fashion. Bourque in the Knox was reported to have made second best time in this event in 0:40, and Grady's Pope-Hartford showed up third in 0:41.

J. F. Corbett at the wheel of a Corbin, C. M. Linton with a Jackson, and Bourque in a smaller Knox were the contestants in the 24-40 horsepower class. Bourque shot up the incline at a terriffic clip and looked like a sure winner, but the judges failed to get his time at the start and he was forced to make the trial a second time. As it was, his second attempt, while possibly not as fast as his first, proved to be the best of the class, with Corbett second.

The 15-20 horsepower class saw one lone entrant, Oliver Light in a Chalmers-Detroit, while one event on the program was not run at all owing to the non-appearance of any of the entrants at the starting tape. In the one remaining bout, two steamers were the only starters: Baldwin and Blackington in 20 horsepower runabouts, Baldwin winning.

When the times are announced by the committee some weeks hence, the official figures still may be subject to inaccuracies in the majority of instances, due to the crude and inexact method of timing employed. It is obvious that in about every case the time must be at least a fraction of a second out of the way. As a means of clocking the cars a telephone was employed, with wires running from start to finish. The starter at the base of the hill would yell the word "go" into the telephone receiver as the cars thundered past the starting tape and the judges at the summit would set their stop-watches upon hearing the signal transmitted. The noise of the cars prevented the signal being heard clearly at first, causing Bourque and another contestant to run their heats a second time, when the judges failed to clock them. After this method proved unsatisfactory, it was arranged to signal the judges by the sounding of a telephone gong, when the receiver was removed from the hook—a process not as accurate as it might have been.

Endurance Run to Test a Magneto.

Endurance tests of cars have been planned and carried out under all sorts of conditions until they have lost a large part of their novelty and interest to the outsider, though they still continue to absorb the participants, but an endurance trial of a car made for the sake of trying out the durability of an accessory as well as to demonstrate its characteristics is rather out of the ordinary, even at this time. Just such a test, however, is being made by A. T. Mosher and Harry Harter, salesmen for the Remy Electric Co., who recently commenced a tour from the Anderson (Ind.) factory of the company, to Savannah and return, the route to include New Orleans, Galveston and St. Louis. The runabout they are using is equipped with one of the new Remy magnetos which, in addition to furnishing the ignition current for the motor, will serve a useful purpose in demonstrating to local dealers, garagemen and mechanics, the simplicity of the system as well as its durable qualities.

Big Purse for Road Race in Nevada.

Out in Goldfield, a party of capitalists who have been infected with the motor racing microbe, have come forward with the offer of a $30,000 purse to the automobile owners and drivers of the world, as an inducement to participate in a proposed road race to be held in Nevada next spring. According to correspondence from Reno, the movement is being headed by Tex Rickard and Tom Murphy, two wealthy mining men.

DES MOINES SEES FAST CLIMBING

Berner Drives a Steamer up West Grand Avenue Hill in Best Time—Twenty-Two Cars in Lively Contest.

In a bitter cold wind sweeping through the open country, on one of the chilliest days that Des Moines (Iowa) has seen this season, a large crowd of motor enthusiasts turned out to witness the Iowa Automobile Association's informal hill climb of Wednesday, December 2. It was the first contest of the kind ever held by this club and it took place on a slope on West Grand avenue, the course being three-fifths of a mile in length. The entry list, numbering more than a score of contestants, was gratifying to the promoters of the affair and a number of the drivers made good, if not phenomenal time.

There was no division as to class or price for the various contestants, though some of the 22 competitors were given two or three tries at the climb. One steamer was entered. This car, a Stanley, with Berner up, made the climb in 44½ seconds, which was 2 seconds better than its nearest competitor. Of the gasolene cars, Van Slyck, driving a Chalmers-Detroit "40", made the best performance. Starting up the incline with a good jump, he ate up the smooth, hard road with his engine singing a pretty tune and his tires kicking up the fine dust, in 0:46½. An ascent almost as lively and every bit as spectacular was that of Wallace, in the Stoddard-Dayton, who swung up the grade only one-half second slower. Many thought he had made the best time, until the announcement of 0:47 was made. Dr. Parriott, on his second trial in a Mason, also scored this figure.

In the early part of the contest, it seemed as though the light low priced cars were going to outdo their larger brothers. Harper, the first starter in one of the smallest mounts set up a figure of 0:49 flat and made the rest of the field realize that they would have to show some class. Then a few more contenders made the attack, Sears's Ford and Dr. Fellows's Buick among them, and all fell short, the latter making the slowest time of the meet—1:14. Following this, Dusenberg, in a Mason car, ripped off 0:51 flat, after which three other Masons made trials in 0:49 and 0:48 flat. Several of the small cars hit these same marks, making creditable showings.

Topeka Motor League Revives.

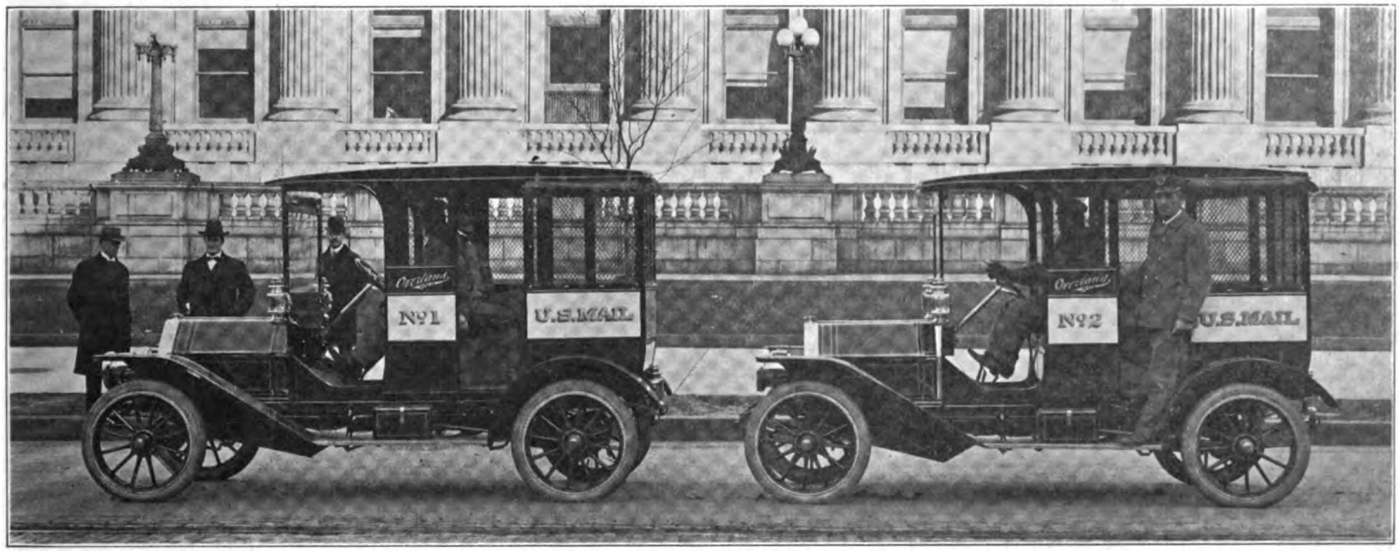
After lying dormant for some time, the Topeka Motor League has suddenly resurrected itself and hopes to flourish as it did in the days of yore. A new board of directors has been chosen, as follows: J. M. Padgett, Dr. H. H. Keith, Dr. F. H. Scholle, W. W. Mills, George W. Crane, F. M. Spencer and S. W. Lyman.

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SPECIAL MODEL FOR MAIL SERVICE

Indianapolis Facilitates City Delivery by Employing Overland Vehicles—New Features in the Design.

The application of the automobile to facilitate the postal service has led several manufacturers to build motor mail wagons, which have been tried with various regrees of success. One of the latest designs of this type of vehicle has been brought out by the Overland Automobile Co. and has several new features. The two wagons shown in the accompanying illustrations were put into service in Indianapolis, Ind., during the past week and are being used to de-centralize the bulk ot the city's mail. Their value was felt at once, as it changed the delivery system materially and facilitated things from the start. Now, instead of returning to headquarters for each delivery, the carriers get their loads from branch stations and thereby save a great deal of time.



OVERLAND MAIL WAGONS IN USE AT INDIANAPOLIS

The two cars now in use have been leased to the Post Office authorities by the Overland company, which supplies the drivers and is responsible for the up-keep and repair of the machines. The bodies are mounted on regular 30 horsepower Overland chassis. They follow the general lines of limousine construction even to the glass wind shield in front of the driver.

The most novel feature of the design is in the arrangement of the seats for the driver and postal clerk. The wire netting which encloses the entire body is made to surround the two individual seats in such a way as to completely isolate the driver from the mail-carrying compartment, while affording the postal employe opportunity to keep the contents of the wagon continually under his eye. The general finish and painting of the vehicles is in accord with the standards applied to the horse-drawn vehicles in regular use by the department.

Incandescent Electric Lights in Garages.

The old question as to whether or not incandescent electric light bulbs are a menace to safety in garages, has been revived recently in Indianapolis, Ind. A week ago, the fire department was called out to attend to a blaze which started in the garage of the Indianapolis Motor Co., caused, it was asserted, by the breaking of an electric light bulb which was being used by mechanics working underneath a machine. When the break occurred, it was said, the car was immediately enveloped in flames, owing to the ignition of leaking gasolene. By quick work, the burning car was pushed out of the building into a heavy rainstorm, and the flames extinguished before much damage was done. When the firemen arrived, however, the majority of them refused to believe that the fire could have been caused in this way, contending that the breaking of the bulb would put out the light instantly and that ignition of the gasolene would be impossible. The garage people, however, declare that the extinguishing of the filament in the bulb is not absolutely instantaneous and that it would have sufficient time to ignite the vapor under such circumstances.

Small Cars Gain Favor in France.

Report has had it for some time that the popularity of the small car was increasing abroad, particularly in France, at a rate which was very remarkable in the light of the past favoritism of the large and luxurious machine. Recently the matter was put to the test by a Parisian journal which circularized all the principal provincial automobile agents in an effort to determine authoritatively what type of vehicle was in greatest demand. No less than 80 per cent. of the replies indicated a local preference for cars of from 8 to 10 horsepower and costing between $900 and $1,200.

ABOUT SETTING THE HEADLIGHTS

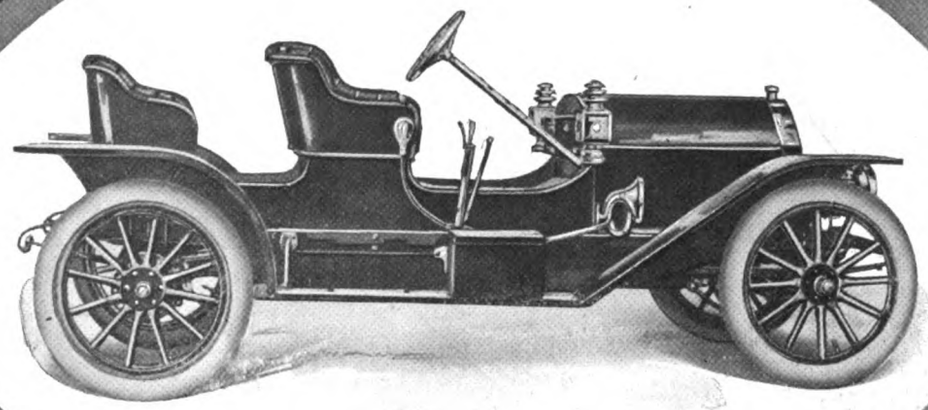
Drivers at Variance as to Best Way of Placing the Lamps—Advantages of Centralizing the Rays.

Some difference of opinion exists among motorists as to the proper method of setting the headlights of a car which is to be given any great amount of night work over rough roads. By some drivers it is held that the desirable thing is to place the lamps in such a way that the rays of light shall be thrown out in perfectly parallel and horizontal planes—the lamps themselves being adjusted with this in view by means of a plumb line, and a straight-edge laid across their lenses. Others hold that the light should be focussed on the road at a point not too far distant from the front of the car. To this end the lenses are sometimes placed so that the light is concentrated on a single point, while in others the rays from one of the headlights are directed forward and at only a very slight inclination below the horizontal plane, while those from the other are directed at the ground only a short distance from the front of the car. This "wall-eyed" arrangement is not ideal, however, as it sacrifices considerable of the illuminating value of one of the lamps. The centralizing arrangement, in which full advantage is taken of both beams, is considerably more advantageous even than that in which both beams are held perfectly parallel.

The Longest Automobile Freight Line.

What is claimed to be the longest automobile freight line in the country has been established between Croville and Brewster, in Okanogan county, Washington. The distance is 80 miles. Heretofore the line has been served by ordinary wagons, which took two days for the journey. The motor vehicles make the trip in eight hours.

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THE INTER-STATE—MODEL 28
$1750.00

Announcement

THE INTER-STATE CARS

The coming of the INTER-STATE marks a new era in automobile history.

From every man and woman interested in automobiling, either as present owner or as a prospective purchaser, the INTER-STATE commands attention—

Because—

It belongs to the highest class of the 1909 Automobile; is a perfectly-made, light-running, easily-controlled, speedy, graceful, enduring car.

And is sold at a price—$1750.00 complete, including Eisman Magneto—but little higher than the price asked for the "good-enough-until-later" cars.

Of this latter type there are many. The market is flooded with their titles and book-pages are crowded with their claims.

Of the INTER-STATE type there is but one **at any where near its price.** And **IT** is the INTER-STATE.

Where is the economy or the automobile satisfaction in buying a car that you will probably discard next year for a **real** car? Would it not be actual economy and also "good business' to buy the **real** car, the **satisfying** car, the **lasting** car, **this** year—especially since you can buy this kind of a car for just a little more money than is asked for the **temporary** car?

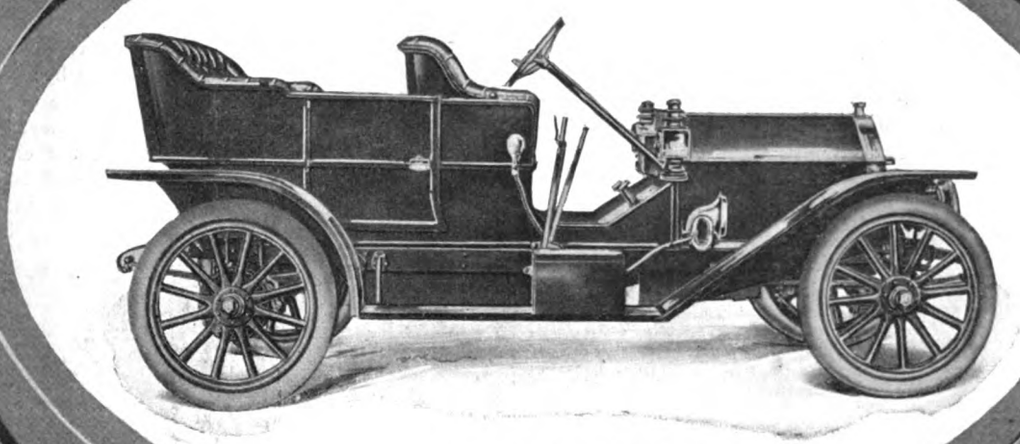
If you want an automobile and do not feel like paying anywhere from twenty-five hundred to five thousand dollars—

Here is a car—the INTER-STATE—that will suit your price requirements and give you the quality you really want.

In style, comfort, speed, ease of control, and low cost of up-keep, the INTER-STATE finds its only competition in the high-grade, high-priced cars, all of which sell for far more money than the INTER-STATE.

The INTER-STATE AUTOMOBILE CO. is a new Company and the INTER-STATE is a new car. But the men behind them—Thomas F. Hart, F. C. Ball, J. M. Maring, G. A. Ball, T. F. Rose, and E. B. Ball—are men who represent millions in capital and an equal wealth of business honor.

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THE INTER-STATE—MODEL 25
$1750.00

They are not the kind of men to trifle with the public or trade by false standards. They have built one of the greatest factories in the world, have installed the most modern machinery that money could buy, and have gathered under their management an ideal organization of automobile brains and skill, for just one purpose—to make this superb car that Claude E. Cox has designed, the INTER-STATE.

Why have they done this? Because they realized that the INTER-STATE would occupy a field absolutely distinct from that occupied by any other car, namely, **the highest type of an automobile from every point, at a low price.**

This is the car that we want you to see. We want you to drive it, and give it every possible test, before you **think** of spending your money for a cheaper car—or for even a higher-priced car. We will be content to accept your judgment as to its value at $1750.00.

It will be exhibited at Grand Central Palace, New York, December 31st to January 7th, and at the Coliseum, Chicago, February 6th to 13th.

Dealers and agents will quickly appreciate the opportunities open to them by the INTER-STATE. Our proposition is unusually attractive.

Write

D. W. HENRY, Sales Manager

Inter-State Automobile Co., 126 Willard Street, Muncie, Ind.

Specifications

FRAME—Pressed from cold rolled steel, special stock.
FRONT AXLE—"I" beam, drop forged in one piece—not welded—and double heat treated.
REAR AXLE—The reliable semi-floating type with large axle shafts and Hyatt Roller Bearings.
WHEELS—Artillery type, 12 spokes, 1½", 34" diameter.
TIRES—Standard Goodyear Quick Detachable, Continental or Diamond. 34x4".
BRAKES—Four 12" brakes all acting on rear hubs external and internal.
TRANSMISSION—Three speed selective type and reverse with vanadium steel gears. The selective mechanism built inside transmission case, thoroughly lubricated at all times.
HORSE POWER—34-40.
GEAR RATIO—3½ to 1, giving from 5 to 60 miles on high gear.
MOTOR—Four cylinder, 4¼x5, water cooled, cylinders cast in pairs.
CRANK SHAFT—Special drop forging, 35 to 40 carbon steel, double heat treated.
IGNITION—Double system Eisman Magneto, commutator, battery and quadruple coil.
BODY STYLES—Touring Car, Roadster, Tourabout and Demi-Tonneau.
WHEEL BASE—112"; TREAD—56½".
COLOR—Standard Inter-State red.
PRICE—With best of equipments, head lights and generator, side oil lamps, tail lamp, tube horn, tire repair kit and tools, Eisman magneto, F. O. B. Muncie, $1750.

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MILITARY VALUE OF AUTOMOBILES

French War Official Declares Motor Vehicles Necessary in Army Operations—Adaptable Types Specified.

From the clumsy, armored motor vehicles destined to act as miniature moving batteries down to the ordinary pleasure car adapted to despatch duty, the war departments of Continental Europe have given the automobile a most thorough test during the past four or five years, as a result of which its status has been pretty clearly established and classified. In America the present impression among military authorities is that the sphere of the motor vehicle is more or less limited by its necessary confinement to roads of at least passable condition, as a result of which its usefulness must be confined to such movements as attend the mobilization of considerable numbers of troops, where there is opportunity to improve existing roads or to construct new ones where that may be necessary. Somewhat in the same line is the opinion of General Langlois, the French état-major, who has recently published two articles on the subject in the Temps of Paris.

"The most prominent of the applications of the motor vehicle in time of war," he concludes, "is for the organization of the service for the convoys of provisions. The growth of self-propelled traffic for private industries and the reduction in horse-drawn vehicles causes very urgent and special attention to be directed to this question of convoys, which no longer presents itself at the present day under the same conditions that were prevalent only ten years ago. It is further complicated by the enormous growth in the munitions and stores, which the conduct of modern warfare now entails. In these circumstances it is clearly established that both the railways and the horsed vehicles combined would be absolutely inadequate to provide for the provisioning and supply of stores needed by an army of the present day in the requisite time.

"It must be remembered that with an automotor it is possible to convey five times the weight that can be moved by means of horsed baggage carts (4,000 kilograms in lieu of 800), moreover the distance traversed by the motor each day is four times as great as that which can be covered by horses—namely, 120 kilometers in place of 30. From this it appears that by means of mechanical agency it becomes possible to accomplish twenty times the amount of work performed by animal traction. The length of the train of convoys is thus greatly reduced, the number of vehicles and of persons in charge is diminished, and the re-victualing is done with much greater rapidity. The experience gained in the course of the grand manoeuvres and the recent competitions for weight-carrying motors render it possible to formulate the conditions with which vehicles of this description employed for the victualing of an army must comply.

"Three different descriptions of motors are available and have been tried:

"1. Tractors. In this case a single motor-truck draws one or more trailers after it. The tractor alone provides for the requisite adhesion to the ground in order to propel the trailers attached to it. From this it results that it must be a very heavy vehicle, rapidly wearing on the roads, more especially at parts where there is a curve. This class of motor does not therefore find favor.

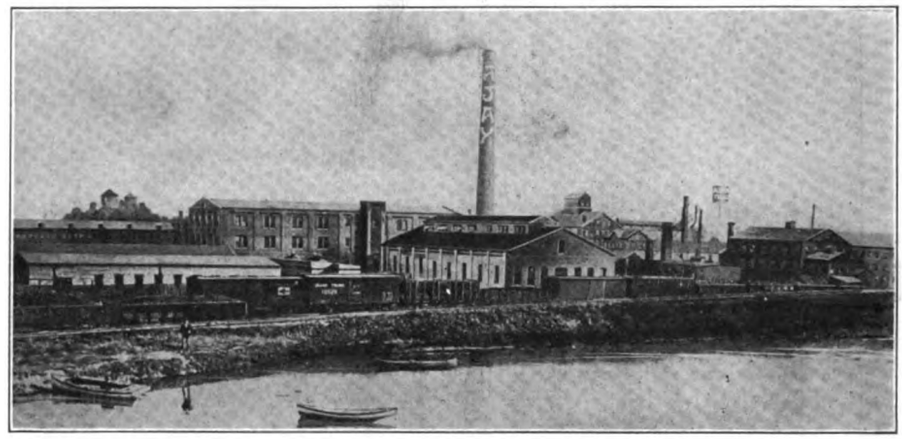
"2. Renard trains. The motive power produced in the leading car is mechanically transmitted to each of the trailers, which contributes therefore to the adhesion. The returns from this class of vehicle are high, the roads are not severely damaged, and there is little risk of wear and tear. This is, therefore, an excellent system for military convoy purposes; the only drawback is that it is impossible to divide up the train into units.

"3. Motor wagons. The vehicles tested were those of the usual commercial type; they gave very favorable results and proved themselves to be well adapted for army transport purposes. The trials showed that it is possible to arrange for weights up to eight tons without injury to the roads, the usual load carried being four tons. It appears, however, advisable to introduce the following improvements: The use of a more simple and stoutly constructed motor engine, automatic carburation, and arrangements for facilitating the adoption of various kinds of fuel. The starting gear should be automatic.

"In order to obtain the best results it was ascertained that the speed should be moderate, not exceeding 12 or 15 kilometers per hour; there is otherwise a risk of damage both to roads and vehicles.

"As it would obviously be impossible to create a special equipment of automobiles for army transport purposes, since it is not improbable that such stock would have become antiquated before the time for the use of it arose, it appears necessary to rely upon private motors, which during war time could be impressed for military service. In order to stimulate progress in mechanical systems of locomotion and to render these systems adequate to provide such assistance to the military authorities as they may require when occasion arises."

General Langlois calls on the Minister of War to give a vigorous impulse to this branch of industry by the offer of adequate rewards in the shape of premiums. He insists, also, on the need of further experiments respecting the employment of alcohol for internal combustion engines, since the supply of petrol, as it is an imported article, might suddenly be cut off in time of war. The general likewise discusses another military use for motor vehicles, at present employed for commercial purposes, namely, in order to convey rapidly from one point to another of the battlefield large bodies of troops. It might be possible by this means to render important service to a commander by increasing to a very remarkable extent the mobility of his forces, he suggests.



AJAX-GRIEB FACTORY, TRENTON, N. J.

Ajax-Grieb's Enlarged Factory.

Though but two years old, the Ajax-Grieb Rubber Co. has risen to a position of some little prominence in the industry as a result of which it assumed the dignity of a new and enlarged factory in Trenton, N. J., early in the summer, which has been completed but a short time. As the picture shows, it is conveniently located with regard to transportation and the other necessary manufacturing facilities and is of ample floor area to take care of an enormous amount of business. Formed in 1906 by a number of automobile manufacturers, among whom the Ford Motor Co. and the Maxwell-Briscoe Motor Co., were most prominently associated, its growth has been gradual but insistant. Among its most boasted recent achievements was the signing of a contract for delivery of no less than 29,000 complete tires—said to be the largest single tire order ever given to a tire manufacturer.

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SLUGGING SPICES TAXICAB STRIKE

Odd Features of Drivers' Merry War on Strike Breakers—Photo of a Feast Serves as a Detective.

Jolting along in a jinricksha on Broadway, a timid lady of the stage announced to her friends that she was forced to that means of conveyance by the taxicab strike which was raging in New York City. Of course it was purely a press agent's "plant," the papers all being provided with photographs and interviews, but it made a hit because of the news prominence the strike was attracting, both on account of the inconvenience it entailed on the public and because of the incidents of violence attending it. The public history of the difficulty and of the events attending it has been spread large, but there is a wealth of "inside" history which has not been disclosed, particularly as to the manner in which the strike was broken and the acts of violence of the strikers discouraged.

Officially the period of the strike against the New York Taxicab Co. by the drivers of the machines, was from October 3 to November 13, though in reality it tapered outside these dates. Dynamite bombs, murders, incendiary fires, riots, black-jacking and other equally mild measures of suasion were used by the strikers to bring the company to their views, and the newspapers were kept busy telling how cabs were being wrecked or taken from their drivers and stolen, while unfortunate strike-breakers were being slugged or assassinated.

Strangely enough little publicity leaked out as to some of the things which happened to the strikers themselves and their sympathizers. Nevertheless a census of the broken heads and pounded bodies which they had occasion to go home and nurse would probably make the record of injuries to strike-breaking drivers look modest and trifling by comparison. A more quiet and efficient warfare against strike violence could hardly be conceived, and warfare it really was in the literal sense of fight and battle.

When things began to get warm for the Taxicab company, an experienced strike-breaker was engaged, who in addition to knowing where to get men capable of running the cabs was likewise able to organize a gang of "sluggers" and fighting men of the kind who relish a bloody "scrap" more than a wildcat does raw meat, and who regard being paid to fight as the softest "graft" possible, except that it imposes limitations as to whom and under what circumstances they may let loose, thus calling for some restraint. Not bound by any sympathies with the strikers or their friends, they found rich material to work on. If there were "huskies" and "scrappers" among the strike crowds, the experienced and eager Taxicab "sluggers" were aching to "eat 'em up," and the quickness and dispatch with which they did so when they got a chance was marvelous to behold. Furthermore, as if to add insult to injury, after pounding a strike rioter to within an inch of his life, the Taxicab men would in many cases drag their prey to police headquarters and have him arrested.

While the police department was in duty bound to afford the Taxicab company some measure of protection against the attacks of the strikers, the approach of the November election was observed to have a visible effect in relaxing the police activity against them, due in some degree to the fact that the strikers were backed by the Liberty Dawn Association and its friends. Through the mysterious intricacies of politics many of the police department officials were impressed with the desirability of not being too hard on the "boys" who were "doing things" to the cab company and its employes. Police Commissioner Bingham had to discipline several desk officers for not providing men where obviously they were needed, so that the cab company was in a large part thrown on its own resources and found its fighting force a very real necessity.

The Liberty Dawn Association, be it known, is an organization of horse-cab drivers, formed to insure a favorable arrangement with the Livery Stable Keepers' Association from whom the cabs are hired. The members are chiefly the typical New York "cabbies," many of whom have both a strong arm and a strong pull. When the New York Taxicab Co. began to get large numbers of its machines on the streets, the drivers' ranks were extensively recruited from the Liberty Dawners, it being thought that the knowledge which the experienced cabmen had of New York's topography and the like, would be valuable in the new service. The Taxicab company instituted a school of instruction for them, and before long there were many ex-reinholders at the steering wheel. When their number grew proportionately large, they began to figure about applying such Liberty Dawn methods to the Taxicab company as had been successful with the livery keepers, and they commenced steps to that end.

When the Taxicab company saw the trend of things, it hastened to counteract the tendency by suggesting to the men the formation of a taxicab drivers' association, quite independent of the Liberty Dawn Association or any other established organization. To lead the new movement some of the oldest and most loyal of the company's drivers were picked out. As a step in expediting the plan, a dinner to the drivers was programmed, based on the first anniversary of the company's business, or something of the kind, and all the drivers who could be spared were invited to attend. At this affair gold watches and congratulations were expended on those of the drivers who had been with the company practically from the start and who were not Liberty Dawners. Among the felicities of the occasion was the taking of a large flashlight photograph of all the diners at the banquet, which played an important part in a subsequent chapter.

Meanwhile the Liberty Dawn movement was coming to a rapid head, hastened by the fact that while the drivers who had been with the company for some time were making "easy money" on the commission basis, sometimes estimated as high as $50 or $60 per week on the best paying stands, the newcomers were scratching out barely enough to live on, through being placed only as substitutes in the absence of regular drivers or because of having to take the stands where the calls were few and far between, and the tips the poorest. The effect of this difference in earnings was to divide the sentiment about equally when it came to a proposition of demanding a straight wage rate of $2.50 per day instead of the commission compensation of 20 per cent. of the earnings, less the cost of fuel, oil and uniforms. When at one of the drivers' meetings a vote was taken whether to strike if the company would not sanction the change, the ballots for and against were about equal, due to the fact that the number above and below this figure in earnings were in balance.

Because of he company's apparent hostility to any organization other than one fathered by itself, however, many of the drivers, particularly those whose earnings were average or indifferent, leaned toward the new movement, and when recognition was denied the Liberty Dawn crowd as a union thy joined the strike.

Immediately the men walked out, the company's troubles began. The men who stuck were attacked with bricks and clubs when they appeared on the streets with the red "taxi-s." As the fight grew more protracted and bitter, the methods employed by the strikers became more and more dangerous. Taxicabs were engaged to take prosperous looking passengers to uptown streets in lonely districts, where the driver would suddenly be set upon by an organized gang and the cab destroyed. The passenger, in such instances, was simply a strikers' decoy. A fashionably dressed woman after engaging a cab for a short trip, would dismiss it, and shortly afterward the vehicle would either blow up from some explosive left in it or would be found to be burning vigorously inside, the lady having prepared a neat little package of inflammability, which she set going when he got out.

To intimidate the public and to make the hotels "shoo" the cabs away from their regular stands, carefully aimed rocks and brickbats just missed the vehicles and went crashing through the large plate glass windows of the ground floor restaurants of the hostelries, scaring the guests and creating great alarm generally. Most of the hotels, however, were willing to see the company through the difficulty, and only a few

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took steps to have the cabs kept away while the strike was on.

Among the more prominent incidents was the waylaying of a driver by a gang which beat him up and then ran the cab through a cross street to the river, where it was driven over the dock into the water. It has not heretofore been disclosed, however, that instead of the gang then following the ambulance containing the driver to the very gates of Bellevue hospital and threatening him further, its members found themselves busy "mixing things" with a squad from the Taxicab office, who, after laying most of them out on the pavement with various accumulations of closed eyes, unattached teeth and fractured skulls, rescued the cab from its watery berth and hauled it back in triumph.

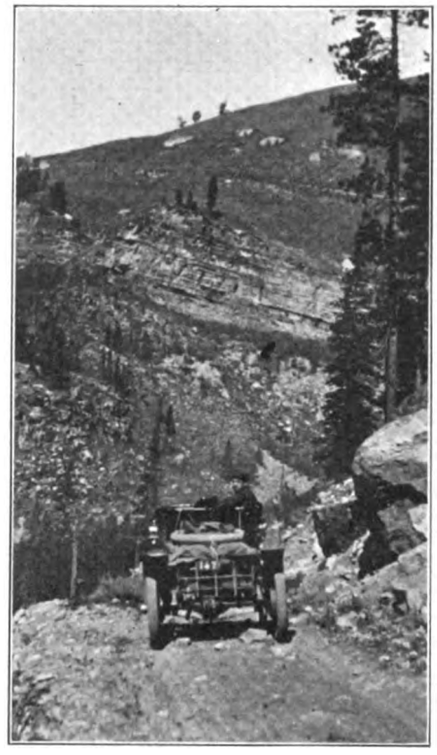
If the strikers could use the "glad rag front" as a decoy, so could the company, and on several occasions a lone chauffeur of a red "taxi" conveying two or three apparently innocuous youths in evening clothes, upon being attacked would have the pleasure of seeing his passengers jump out and "clean up" the attacking party, slamming them right and left and only stopping short of murder. If any of the attackers had a kick left in him after the melee, he was turned over to the police, while the rest were left for the hospital corps.

Old drivers, who staid with the company when the strike was declared, were in many cases able to name the leaders in the gangs that set upon them, but the new recruits did not know the strikers by name. Then the photograph—the flashlight of the harmony banquet—was brought out, and from the array of faces at the festal board the strike rioters were frequently identified. They were given a few friendly attentions by detachments from the Taxicab camp, when favorable opportunity presented.

But the enthusiasm of the company's corps of riot pacificators, so steadily thinned the ranks of the strikers able to report for participation in the attacks, that these events grew less and less frequent although their character did not diminish in vigor or ingenuity until the very end. After a few truces and several endings of the strike, following which trouble broke out anew, the fight gradually languished on the part of the aggressors, until it became quite safe either to hire or drive one of the little red cabs. The public impression was that the violent methods of the strikers had been met by the company in a spirit of calm and law-abiding defense, depending upon the established machinery of peace and order. As a matter of fact the company fought fire with fire, and looked to the police for no more than it could get. If broken ribs and broken heads could weaken the strike-breakers they were equally valuable in weakening the strikers, and New York City was consequently made the battle ground for a reciprocal warfare in which the "scrapper" could indulge himself to his heart's content, no matter with which side he cast his fortunes. Now that it is over, many of the "regulars" that were under the Taxicab banner will have to do their fighting simply as a diversion, without pay, while the "volunteers" of the Liberty Dawn camp are already used to fighting without pay, anyway, and enjoy it.

Where Snow Forbids Motoring.

While modern motor cars are capable of getting almost anywhere and can overcome nearly every sort of road condition good or bad, plow through hub-deep mud or heavy sand and surmount the steepest hills, never-



theless one condition frequently proves an insurmountable stumbling block to its progress, and that is snow, driven and drifted. This was proved to the satisfaction, or rather, dissatisfaction of Dr. O. T. Parker and several of his friends recently when they undertook the passage of Eagle Canon, Colorado, in the course of a hunting trip.

The party which set out through the mountains in a Franklin car, encountered some terribly bad roads and awful ascents, as may be judged from the accompanying picture, showing the car in the act of descending into the canon itself. The general was covered most successfully until snow began to fall in the canon. When it snows in that part of the country it snows well and the storm soon piled up the drifts so high that it was impossible for the car to proceed. To save their lives the half frozen party had to abandon the car and their entire camping equipment, together with their guns and 18 deer that had been bagged, and make their way out on foot. After finding shelter some miles distant, they were obliged to wait ten days before it was possible to set out with a rescuing party to release the car and its load.

Planning Law to Check "Borrowing" Cars.

Minneapolis, Minn., is having trouble with motor car "jokers" and has been moved to the point where it has seen fit to draw up a bill to be introduced in the State legislature. Of late, numerous motor car owners, leaving their machines standing at a curb, have had their property "borrowed" without permission being granted for the loan. The borrowers in most cases have not been regular thieves, but mere sportively inclined young persons desiring to play a prank. Some of them have carried their jokes too far, however—far enough outside the city limits to spoil the owners' sense of humor. One bright youth recently made off with an expensive touring car and then stranded it on a country road, where it was found damaged to the extent of nearly $1,000.

It seems that there is neither a city ordinance in Minneapolis, nor Minnesota State law covering this particular offense. In cases where arrests have been made, judges have ruled that no theft was intended and that it was just a joyous "lark." The members of the Minnesota State Automobile Association declare that if they cannot get a State law, they will have the city council act.

Vincennes Automobilists Form a Club.

After a few preliminary meetings the Vincennes Automobile Club has been formed in Vincennes, Ind., its expressed purposes including a furtherance of the good road movement and the suppressing of the "inconsiderate" driver. The following officer was elected: R. W. Gibson, president; H. T. Johnson, secretary; W. C. Bierhaus, treasurer; Perry Tindolph, first vice-president; G. A. Pielemeier, second vice-president; Dr. C. W. Denham, A. M. Shepard and Bert C. Fuller, directors.

Big Registration in Ohio.

In the November report filed with Secretary of State Thompson, Fred C. Staley, Ohio registrar of automobiles, shows that since the motor vehicle law became effective in that State on June 10, 1908, the total revenues for registration tags up to the end of the fiscal year, November 15, amounts to $56,102 . The receipts for the month of October and the first fifteen days of November came to $1,677.50.

Motor Car Touring Society Election.

An election of officers of the Motor Car Touring Society, the New York amateur club, took place on Wednesday, 2d inst., and the following officers were chosen for the ensuing year: President, Albert Eugene Gallatin; second vice-president, Percy R. Pyne, 2d; secretary and treasurer, Orme Wilson, Jr. These, with Marshall Kernochan and Stuyvesant Fish, Jr., will form the governing committee.

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DIFFICULTIES OF MOTOR RATING

Foreign Experts Involved in Discussion of Determining Factors—Ratio of Dimensions an Elusive Quantity.

As a result of the appointment of a commission to investigate and report upon the subject of horsepower rating for motor vehicles, as recently told in these columns, members of the British Society of Motor Manufacturers and Traders, the Royal Automobile Club and the Institute of Automobile Engineers, which form that body have been plunged into a depth of technical discussion more searching than ever the subject has been granted before, and one which promises much entertainment for those who are able to follow at all closely the finer points of theory which must be taken into account. Up to this time the deliberations of the commission have gone no further than a discussion of the present R. A. C. formula and the proposed formula of the S. M. M. T., an explanation of which appeared in the Motor World's issue of September 17th.

In a word, the latter expression is calculated to take into account variations in the probable power of motors due to the ratio of bore to stroke and also to the variations in stroke when the bore is constant—both of which factors are unaccounted for in the common formula which is known in this country as the accepted rating of the Association of Licensed Automobile Manufaturers. The proposed S. M. M. T. formula is:

horsepower $= k \times d\ (d - 1)\ (r + 2)\ n$

where k is a constant, depending on the type of motor under discussion and is given the value of 0.197 for touring cars, and 0.333 for racing cars. The terms d, r, and n, are, respectively, the diameter of the cylinders, the ratio of stroke to bore, and the number of cylinders employed.

In the criticism of this offered by G. H. Baillie at one of the meetings of the commission it was pointed out that the desirable formula should serve at least two ideal purposes: (1) "To enable anyone to ascertain the horsepower of an ordinary car engine from its dimensions," that is to say, to serve the purposes of a "nominal horsepower formula"; and (2) "to afford a basis upon which engines can enter for competitions," thus making a "competition horsepower formula."

"A nominal horsepower formula," he said, "has merely to take into account what is done with an engine in current practice, while a competition horsepower formula has to take into account what can be done with an engine if it be built specially to suit the formula.

"In an engine for touring cars merit is not measured by horsepower alone. Consequently it does not matter what dimensions are used in the formula, whether bore or stroke or cylinder capacity, or any of them to any power, so long as the formula does give the horsepower with fair accuracy in most cases.

"On the other hand, in competitions such as races or hill climbs, horsepower may for present purposes be said to be the one and only thing to be considered. Engines built with this end in view are liable to become 'freak' engines, and it seems to be the general opinion that a competition horsepower formula should not encourage freak designs. . . . .

"There has been apparently much difference of opinion between really competent people on the question of formulæ, but I believe that most of what seems to be difference of opinion is really difference of definition. I will, therefore, baptize the different kinds of formulæ I shall speak about to ensure the same thing being called by the same name in this discussion.

"Horsepower Formula—A formula of any kind which purports to give the horsepower, either indicated or brake, either maximum or at any particular speed, of a petrol engine.

"Nominal Horsepower Formula—A formula which purports to give the maximum brake horsepower of a petrol engine from any data which are easily ascertainable without testing the engine.

"Competition Horsepower Formula—A nominal horsepower formula with such data as to discourage freak designs as far as our present knowledge goes.

"As an example of the requirements of the two kinds of formulæ, the nominal horsepower formula and the competition horsepower formula, I will take the factor of stroke, as this is the main bone of contention in all formulæ discussions. It is the omission of stroke that has brought so much abuse on the D^2n formula, and it is stroke which is the new factor introduced into the proposed S. M. M. T. formula.

"There is, of course, no question that the horsepower of an engine can be greatly increased by increasing the stroke or the ratio of stroke to bore, and a competition horsepower formula must therefore take this factor into account. So much for the effect that increase of stroke can have. Now the question is, what effect does it have in actual practice in touring car engines?

"The evidence I have been able to collect shows that the horsepower does not increase with increase of the ratio, but rather tends to decrease. And, in fact, it is not difficult to see the reason why the horsepower does not increase. The evidence I refer to is the exhaustive series of tests made by the Automobile Club of France on the maximum horsepower of 96 engines in November, 1906. I referred to these tests in a paper I read before the R. A. C. early this year, and showed curves between the horsepower and the ratio of stroke to bore for all these engines. Those curves show that, with very few exceptions, the horsepower increases as the ratio decreases. At any rate, down to a ratio of 1 or 0.9.

"In default of any later evidence of actual practice, I think it may be concluded that for ordinary touring car engines a nominal horsepower formula is more accurate if the ratio of stroke to bore be omitted. At the same time it is even more certain that in a competition horsepower formula it should be included, and, I think, given more weight than in the proposed S. M. M. T. formula.

"The S. M. M. T. report gives the list of factors which a 'completely satisfactory formula' should take into account. These are:

"(1) The effect of multiplying the cylinders.

"(2) The effect of size of cylinder upon the 'mean pressure equivalents to the brake horsepower.'

"(3) The dependence of the maximum piston speed practically attainable upon the ratio of stroke to bore.

"(4) The effect on mean pressure of varying compression ratio.

"(5) The effect on mean pressure and engine speed of the nature and mode of ignition adopted.

"It seems to me that this by no means completes the list for so high an ideal as a 'completely satisfactory formula.' . . . . Other factors which have a material effect on the horsepower are, for instance, the size of the valves, the steepness of the cams, the weight of the reciprocating parts, the size and shape of the induction and exhaust pipes.

"It is, though, obviously impossible to include all the factors, or even the important ones, in one formula, or, indeed, to ascertain them, and it seems, therefore, impossible to obtain a completely satisfactory competition horsepower formula, or anything like it.

"In considering a nominal horsepower formula for touring cars, the case is entirely different. The basis of such a formula is not what can be done with an engine, but what is done. The discovery of the best formula presents no difficulty; it only requires that British makers in 1909 should afford the same facilities as were willingly afforded by the French manufacturers in 1906. Curves can be drawn representing the average variation of horsepower with these factors, and a formula can then be obtained which fits the curves as closely as may be desired.

"One factor to which a large portion of the S. M. M. T. report is devoted is the variation of piston speed for maximum horsepower with r, the ratio of stroke to bore, and an equation representing this formula is deduced from theoretical considerations, and subsequently serves as basis or part basis for the proposed formula. The figures obtained by the French Club enable this equation to be checked, and show that piston speed does not vary with r according to any really regular law. What little regularity there is shows a variation in the

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opposite sense to the theoretical variation given by the equation. . . . .

"The horsepowers adjusted according to the S. M. M. T. proposed formula vary far more than when not adjusted for the ratio, and the formula curve does not represent them particularly well. The average percentage error of 61 engines between bores of 80 and 130 mm. is with the proposed S. M. M. T. formula 13.1 per cent., while with the formula with bore only, the average error is only 10.3 per cent. The presence of the (r + 2) term in the proposed formula of the S. M. M. T. is chiefly responsible for its greatest errors.

"This is sufficient to show that, given the experimental data, it is easy to deduce a simple horsepower formula giving the horsepower of touring car engines, and if only people would come forward to facilitate the work of collecting the data we should require no more discussions or theories, but should have a formula that was without question the best possible at that time."

Baillie concludes with this suggestion to the commission: "That a small committee, independent of all trade influences, such as could be formed from the Technical Committee of the R. A. C., should prescribe conditions for testing the normal maximum horsepower of an engine, and that the different makers should supply the results of their tests on new types or sizes of engines put on the market. The results would have to be treated as confidential by the committee, otherwise it might be difficult to ensure getting the figures of normal engines. The committee might then, at the beginning of each year, issue a nominal horsepower formula, based on these results.

"For competitions it is impossible to devise a 'completely satisfactory formula,' on the lines indicated in the S. M. M. T. report, and I think that if any formula be advised for competitions, it should be put forward with a clear statement of the limitations it must necessarily have. After all, the excellence of a formula for competitions should be judged not for its scientific correctness, or, indeed, by the accuracy with which it gives horsepower, but only by the degree of interest and usefulness it lends to the competitions."

Mervyn O'Gorman, whose prestige in British motoring circles is unquestioned is able to discern no less than four distinct purposes for the ideal formula, thereby adding more to the uses of the much desired expression.

The first of these is the "Olympia formula," which he described as a "wrinkle or 'tip' for a layman. It may be called a rating, omitting the word horsepower altogether," he thinks. Second, there is the requirement of the engineer of an accurate method of power determination, which is satisfied by the familiar "P. L. A. N." expression which is common to all types of engine. For competition two sorts of formula are required—one for such competitions as are organized on short notice and among entrants driving cars already constructed and of known characteristics—such for instance, as the stock car events carried out by individual clubs—and another for competitions requiring a carefully safe-guarded formula.

After proving by the aid of diagrams that the errors introduced by the "d-square" method of rating employed by the automobile club, when applied to engines of 1906 and 1907 construction were less "than the irregularity introduced by the various arrangements of inlet pipes, valves and carburetters," he suggests that in view of the apparent futility of attempting to arrive at a satisfactory basis of general rating, it would be better for a year or two to print and circulate a set of tables and curves for the purpose of ready calculation of the absolute power of each and every motor considered.

For competitions, he points out that there is no real need for an even approximate determination of the horsepower; all that is required being to provide a common method of handicapping. In fact, he even expresses the opinion that if the seal of approval were placed upon any single formula for competition, a source of much valuable information would be lost in the case of hill-climbing contests, for example, where conditions vary to such a degree that the rating of the power of the machine alone, can be of but small relative value.

The report of the rating committee of the Institute of Automobile Engineers upon the subject proved to be hardly more encouraging as regards the probable acceptance of the proposed formula or indeed, an early settlement of the rating question on this or any other basis. The chief point of criticism against the S. M. M. T. report was that the tests quoted were insufficient to warrant the assumptions made in the formula, it even being shown that in some instances the results given by the tests actually appeared to go contrary to the theories upon which the formula was based. The most salient proposal of the report is that a special committee be formed to discuss the exact nature of the tests to be made in order to supply data for accurate comparison by formula.

New Rectifier for Alternating Current.

A new form of alternating current rectifier has recently been brought out, according to the Scientific American, which is wholy mechanical in its operation. It consists of a cylinder of insulating material, provided with a pair of metallic contact points. Mounted on a ring which surrounds the cylinder are two pairs of contact points and there are in addition four rectifying discs of carbon which with the cylinder are rotated by a motor. By means of a pair of condensers, sparks are made to leap between the points on the rotating cylinder and first one and then the other pair of contact points. The current flows across the gaps between the points and the rectifying discs when the resistance is broken down by the spark, and is conducted to the storage battery intermittently, but always in the same direction. The rings on which the four points are carried may be revolved about its axis, so that the condenser will discharge at any point of the wave, and thus the voltage of the rectified current may be regulated.

Correctness of Odometer Readings.

There is a common belief among motorists that the reading of the odometer attachments to speed indicators, as well as the readings of the speedometers themselves are considerably affected by variations in wheel diameter, such as may arise from altering the brand of tire, assuming or rejecting non-skids, or from variations in inflation pressures. As a matter of fact, however, such differences amount to very little where relatively short distances are considered. Thus a well known maker of speed indicating devices is responsible for the statement that such variations are responsible for inaccuracies of less than 100 feet per mile. Calculation shows that for a difference in diameter of half an inch, the error should amount to not more than 80 feet to the mile for a 34-inch tire, which substantiates the above statement.

Paying for Gasolene with Lead Slugs.

Slot machines for selling gasolene are not as popular as they were with garage proprietors in Chippewa Falls, Wis., because the machines having been yielding fuel in response to lead slugs just as willingly as for good money. Quite a local scandal and sensation has been brought about by the discovery that a well known business man has kept his car supplied all summer by feeding the slot machines with worthless slugs shaped like silver dollars, and the garage people controlling the machines threatened grave legal proceedings unless a settlement were made.

Taximeter Cabs Predominate in London.

First rank has been given to taximeter cabs in London's time honored system of calling vehicles by means of whistles. In the past it has been customary to summon taxicabs by means of three blasts on the whistle, but the machines have gained such a popularity and the whistling for them has become such a nuisance, especially in the quiet streets at night, that the Home Secretary has ruled that hereafter they shall be called by only one blast of the whistle, while two blasts will be for a horse drawn hansom and three will be for a four-wheeler.

Carborundum for Grinding in Valves.

Carborundum is recommended as a substitute for the ordinary grades of emery for use in grinding the valves of the motor. It cuts quickly, leaves no scratches, and produces a surface which in smoothness and uniformity is hard to equal in any other way, it is said.

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CHANGES IN CORBIN 1909 MODELS

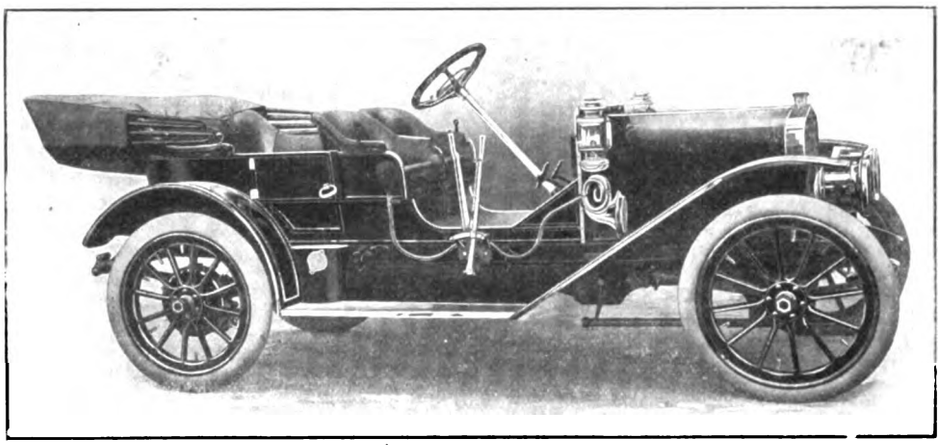
Only Minor Modifications Appear in the Line for Next Season—Various Applications of Body Design.

Specifications of the new models of the Corbin car, just announced by the Corbin Motor Vehicle Corporation, New Britain, Conn., reveal a line comprising various applications of body design in current styles to practically the same chassis construction. This is the same as has been employed during the current year in all salient particulars, but reveals differences in a number of minor points, most of these changes being rather more in the matter of dimension than in any other respect.

A brief review of these alterations shows that the motor is the same as the water-cooled type employed during 1908 except that the cam shaft gears have been given an improved housing and the oiling system also has been improved. In the matter of clutch construction the leather faced type of cone member with sub-facing relieving springs is retained. The clutch shaft and transmission shaft directly behind it are connected by means of an oldham coupling, the joint being enclosed in a dust proof casing, which serves the double purpose of protecting the internal parts from the effects of dust and dirt and also of preventing the central and floating member of the clutch from dropping out in the event of a loss of end adjustment between the two shafts. The leverage for operating the clutch is now so designed that a five-pound pull on the pedal is sufficient for declutching. The same principle applied to the re-design of the companion brake pedal permits the locking of the rear wheels with only a slight pressure upon the pedal. A new type of propeller shaft with fully enclosed joints also has been developed, the construction of the housings over the articulations being such as to protect the enclosed parts from dirt without in the least interfering with their action.

In the design of the front axle a new type of pivot bearing has been adopted, which incorporates very large balls working about a 2-inch circle. The front connecting rod of the steering system is now placed back of the axle, while a new design has also been adopted for the steering rod itself which is made from a single piece of cold drawn seamless steel tubing. In connection with the control of the vehicle, the installation of a new foot accelerator in addition to the hand lever mounted on the steering wheel, will be appreciated by the user. The braking equipment remains the same as before in principle, but the emergency brake drums are now placed inside of the foot brake drums, They are of the double-acting, contracting band type, while the emergency brakes are of the expanding pattern.

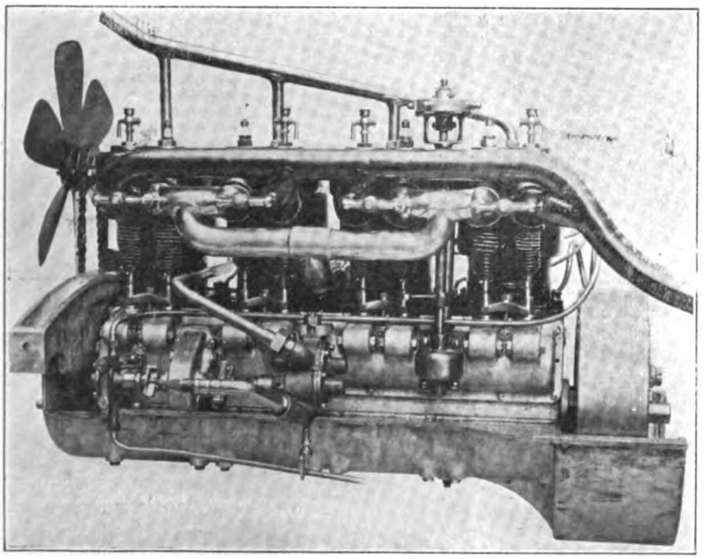
The frame has been reinforced to make it better able to withstand the stresses of heavy road useage. The fenders are similar to those used on the touring car of last year, the edges of the guards being stiffened with drip ribbons. On all models the spaces between the guards and running boards are fully enclosed by a guard fitted over the front spring eye of the rear spring. The radiator now employed affords practically the same cooling effect as the previous form. Though it has a larger area of face, the water capacity has been decreased.



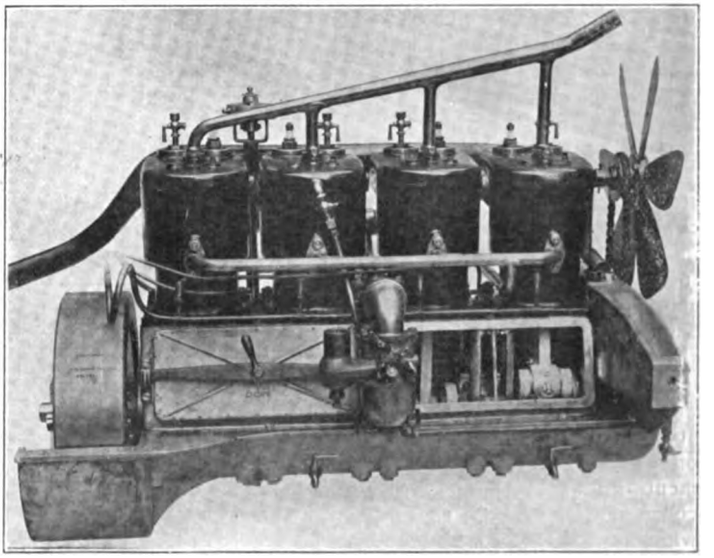
CORBIN BABY TONNEAU, MODEL O²

Body options present three different offerings in the shape of touring car, runabout and baby tonneau designs. The tonneau of the touring body is now made 5 inches wider than heretofore, affording ample room for three persons on the rear seat. The runabout, as formerly, is adaptable to the uses of two, three or four passengers, and is of the same delineation as that used during 1908. The baby tonneau is a light, racy, four passenger car having the same general equipment as the regular touring car.

The general specifications of the chassis call for a quadruple, vertical motor of 30



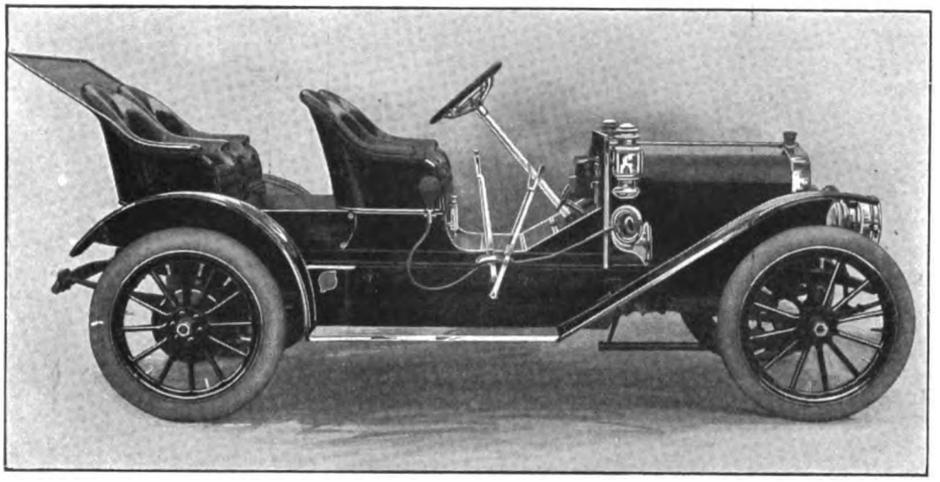
CORBIN MOTOR, LEFT SIDE



CORBIN MOTOR, RIGHT SIDE

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nominal horsepower, having a bore and stroke of 4½ by 4¼ inches. The change gear is of the selective type, affording three forward changes of speed. The rear axle is of the semi-floating type, equipped with spur differential gears. The frame is of pressed steel, channel section, with a pressed steel under-pan supporting motor and transmission. The springs are semi-elliptical, 40 by 2 inches in front and 50 by 2½ inches in the rear. The wheel base is 108 inches and the tread 56 inches.



CORBIN RUNABOUT, MODEL O²

Special points to be noted in the construction of the motor are the neat and clean arrangement of the valves and auxiliaries on the left hand side—the commutator, for instance, being located above the level of the cylinder heads in a perfectly accessible position. The interior of the crank case is readily accessible from the right side through the use of a pair of large cover plates which, instead of being bolted in place, are secured by means of a couple of yokes and tension screws, and are so arranged that the adjustment of the "big ends" may be made without exposing the entire length of the crank shaft. The cam housing, it will be observed, carries intermediate levers between the cam faces and the tappets, whereby the action of the gear is "sweetened" and silenced considerably and the danger of wear not a little reduced.

The copper tube inlet manifold and the steel exhaust connections are purposely located with a good elevation above the base in order to provide ample access to the cylinders for the removal of the valves. The spark plugs are located over the inlet valves. The carburetter, which is located on the right hand side of the motor, with intake lead passing between the two cylinder groups is provided with ample water jacketing area. It is the only auxiliary placed on the right side of the motor, the arrangement affording plenty of room for the large cover plates to the case, already noted, which are absolutely unencumbered by the surrounding mechanism.

Another noteworthy point is in the arrangement of the motor suspension. The lower section of the crank case, which forms the continuous bed for the support of engine and transmission parts, is formed at the forward end with a pair of heavily ribbed cross arms, which extend to the sides of the main frame and afford the front support for the power plant. In the rear it is shaped into a semi-housing for the fly wheel, and is extended rearwardly to join the gear case construction in a rigid connection.

Royal Makes Changes in Models.

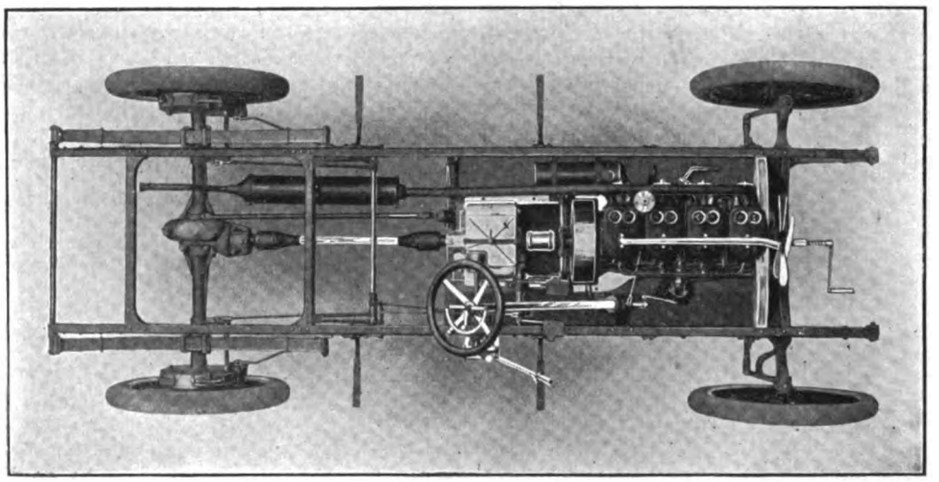
Changes over former models of the Royal are being made in the 1909 product, which the Royal Tourist Car Co., of Cleveland, O., designates as the Model "M" and which shaft. As an extra equipment a self-starting device will also be supplied.

Trade Name Restrictions in Hongkong.

Restrictions on trade names are imposed in Hongkong, and the registration of a company title will not be permitted, according to Vice-Consul-General S. J. Fuller, if it include the word "Empire," or "Imperial" in such a way as to convey the impression of government support or connection. "The title would not be allowed," he explains, "in connection with schemes for the acquisition or holding of lands, or exploration of new countries or territories, nor to companies formed for the purpose of supplying articles usually employed or dealt with by the state or by some public authority, e. g., ships of war, armaments, explosives, telegraphs, etc.; nor in the case of schemes to be carried out in India. On the other hand, no objection would be raised to such titles as the 'Imperial Tire and Rubber Company,' 'Imperial Electric Supply Company,' or 'Imperial Auto-Car Manufacturing Company,' unless there was reason to suspect that the company was not intended to carry on a legitimate business."

Maxwell-Briscoe Building an Addition.

Continued expansion of the Maxwell-Briscoe Motor Co.'s Tarrytown (N. Y.) plant has resulted in the erection of a new building, work upon which has already commenced, in which will be housed a fully equipped technical laboratory. While the purpose of the automobile plant is sufficiently exacting to require the services of a well stocked laboratory for the testing of materials of construction alone, the new department will be devoted largely to the carrying out of researches in the use of various fuels. Already the name Maxwell has been associated with numerous experiments in this direction, but the work has now progressed to a point where it is deemed expedient to provide special quarters where the investigations may be carried further.



CORBIN CHASSIS, VIEWED FROM ABOVE

the reorganized company is planning to have ready in the very near future. The motor is larger than ever before, being 5½ by 6 inches and developing 65 horsepower. A four speed selective transmission is used and the wheel base has been lengthened. Three sets of brakes are equipped, consisting of two sets applied to drums on the rear wheels and a third operating on the drive

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DEVELOPMENT OF BODY DETAILS

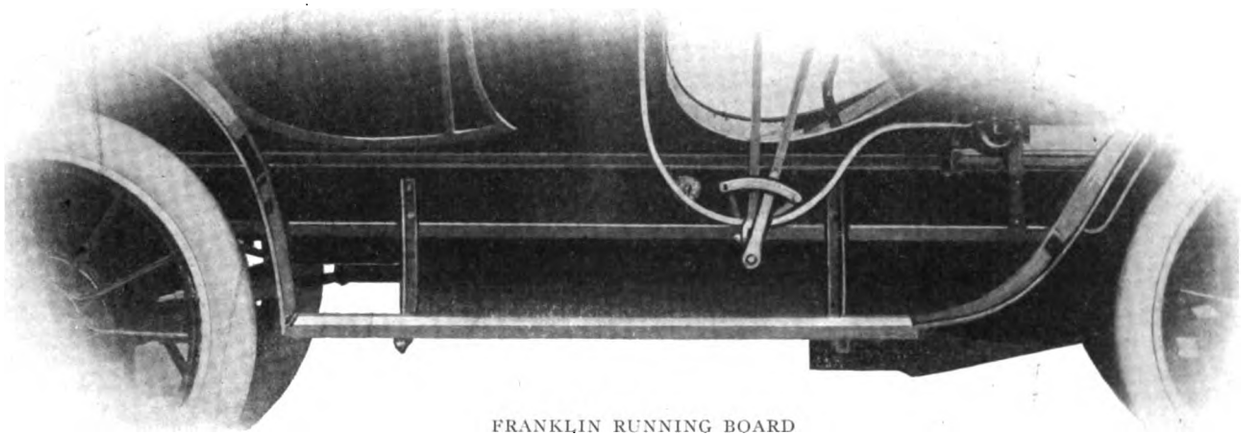
Franklin Improvements in Running Board Shields—New Idea to Facilitate Conveyance of Luggage.

Illustrative of the close attention to detail which the designer of the thoroughly up-to-date motor car is forced to exercise in order to keep abreast of the times, is the development in running board and mud guard construction which has come about within a year or two. Formerly the use of plain guards developed along the familiar lines laid down by carriage builders was considered sufficient. Now, however, the subject is studied with almost as much care and as intimate regard to the treatment of the air-currents beneath and alongside of the machine, as is done in the laying down of the molds for the construction of a ship's hull. Indeed, the methods of treatment must be much the same in the two cases, widely divergent though the actual conditions of use may be.

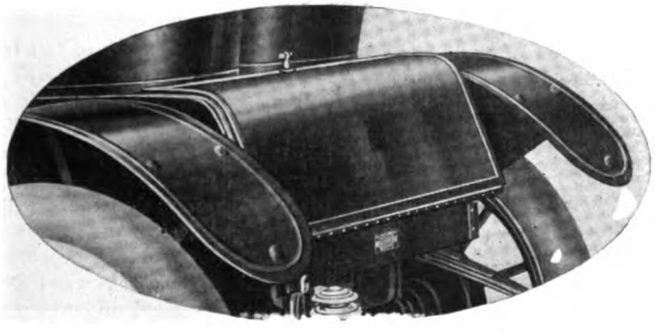
A case in point is the latest "kink" in the construction of the running board shields which are being fitted to the new Franklin models, one and all. Not content with filling in the space between the frame sills and the board with a dust excluding medium, the H. H. Franklin Mfg. Co. is going a step further in providing against the accumulation of mud and dirt in the angle between the board itself and the shield. The novel feature in its construction is that instead of being closely fastened at the board it turns inward at the base, thereby leaving a small opening. Consequently any dust or dirt which is thrown onto the board from the outside, instead of caking into place and forming an unsightly and even dangerous mass, sifts through between the shield and board and falls back into the road. As a matter of course, the shape of the lower portion of the shield is such as to prevent any objectionable matter from being thrown up and outward from beneath the car. Many otherwise satisfactory running boards have an unpleasant feature of accumulating really astonishing amounts of mud. It is to obviate this drawback that the arrangement which is here illustrated has been conceived and adopted.

Another difficulty which is presenting itself to the designer with increasing insistency is that of providing suitable accommodation for luggage. With the touring car with its more ample lines, this is readily taken care of by the adaptation of some simple form of luggage or trunk rack at the back of the body. With the runabout type of body, however, the problem is less easy to dispose of. In the 1909 model of the 42 horsepower Franklin cars, however it has been taken care readily enough by means of a partially concealed space under the rear seat, the lid of which may be opened out to form a veritable luggage rack, and which, when not in use, does not detract from the generally trim appearance of the car.

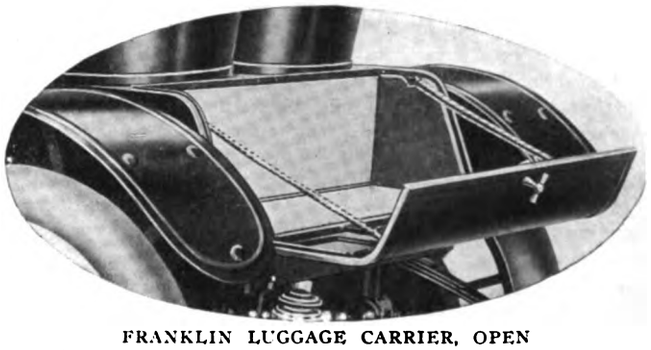
The accompanying illustrations show the simplicity of the arrangement. As will be seen from the first, there is nothing abtrusive in the small rounded box behind the seat which merely completes the regular outline of the rear portion of the body. As the second picture shows, however, the lid which opens from the rear, encloses a receptacle of sufficient size to accommodate a surprising amount of luggage, which is thus safely stowed away out of the reach of dust and mud. By opening the lid to its full distance against the chains which hold it, it is transformed into a carrying rack of sufficiently ample proportions to carry several suit cases, or even a small sized trunk, while the up-turned edge of the lid serves a useful purpose as a deflector of dust.



FRANKLIN RUNNING BOARD



FRANKLIN LUGGAGE CARRIER, CLOSED



FRANKLIN LUGGAGE CARRIER, OPEN

Big Total of One Year's Shipments.

Some idea of the volume of business done by one maker in the course of a season of activity may be gleaned from the statement issued by the H. H. Franklin Mfg. Co., that during the last "trade year" no less than 654 freight cars have been filled with automobiles and shipped from the Syracuse (N. Y.) plant. When it is remembered that this includes the period of curtailment of last fall, it may be imagined what a traditional "banner year" would hold in store for the railroads.

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DISCUSSING BRIARCLIFF PLANS

Promoters Practically Decide on Holding Another Race—Question of What is a Stock Car Puzzles.

Whether or not a stock car race is a contest in which stock cars are eligible as entrants, is a question that is worrying the Automobile Manufacturers Association, the organization that promoted the Briarcliff race in Westchester county last April. At a meeting held December 2, at the Automobile Club of America, it was practically decided to hold another Briarcliff race next spring, but the inability of the members to agree upon the method of engine measurement for the next contest prevented the association from making definite progress in its plans. The difficulty lies in the fact that several makes of high-powered stock cars now on the market have a cylinder bore larger than the limit now fixed by the new international rule (5.1 inches), and oddly enough the association expresses itself as anxious to prevent the possibility of specially built foreign racing cars being brought over here to compete as alleged "stock cars." At the same time, the makers of cars with a large bore do not want to go to the expense of constructing new models to conform to the new rule, contending that a stock car race should be exempt from rating on a cylinder dimensions basis. Manufacturers of smaller stock cars, on the other hand, are anxious to have the bore limit reduced so that they will not be handicapped in this respect. Neither the date nor location for the race have been determined as yet. Indeed, there is no certainty even that the contest will take place in Westchester county although the name Briarcliff will still be retained. The date will be later than last year.

Dingley Supplies Thrills at Bakersfield.

Bert Dingley, who will be recalled as one of the earlier Vanderbilt cup drivers, and who has been distinguishing himself at numerous western meets this season, went down to take a flyer at a tame track meet at Bakersfield, Cal., on Saturday, 29th ult., and had things pretty much his own way, chiefly through the misfortunes of others. The events on the program were scarce and Dingley won what there were, driving a 40 horsepower Chalmers-Detroit "Bluebird." He reeled off the fastest time that had ever been seen on the local half-mile track, making a lap in 0:40 flat, a mile in 1:20, and 5 miles in 6:54 in various trials.

In the 10 miles race, Frank Free, driving a Sunset, gave Dingley a hot tussle, until the third lap, when the Sunset went crashing through the fence. Free was thrown, but neither car nor driver was badly injured. Dingley kept up his hot pace and circled the 20 laps in the brisk time of 14:00½.

Another 10 miles race was started as a handicap affair, Dingley allowing Murray, a San Francisco driver, a full lap. Dingley began to gain on his opponent from the start, when suddenly Murray's Buick crushed its rear wheel in the first mile and left the race to the Chalmers-Detroit.

Los Angeles Plans a Motordrome.

If the plans of a group of western capitalists are prospered Los Angeles, Cal. will have a cement race track for the exclusive use of automobiles. The proposition to lease Ascot Park for a term of 14 years, has been under consideration for some time and on the first of the month a certified check was posted with the directors of the jockey club that formerly operated Ascot as a horse race track. This deposit is said practically to have closed the deal and the construction of the new course is about to proceed. It will be not unlike the Brooklands track in England, scientifically banked at the turns, although of considerably smaller dimensions. Several members of the Automobile Dealers Association of Southern California will be the directors of the new enterprise and all races held on the course will be under the auspices of this body.

Florida Has the Sandfest Fever Again.

Annual efforts looking toward the promotion of a sandfest on the Ormond-Daytona course are again in evidence, a late date in the latter part of March having been tentatively advanced in a cautious way as being most suitable for various reasons. The Florida East Coast Automobile Association, with headquarters at the Daytona end of the beach and ample local real estate interests at stake, is reputed to be anxious to secure the management of the proposed event in advance of its Ormond neighbor.

Wilkes-Barre Booming Its Hill Climb.

With the hope of definitely making the Wilkes-Barre (Pa.) hill climb the international hill climb of next year and ensuing years for some time to come, G. N. Lee, president of the Wilkes-Barre Automobile Club has been in New York City this week arranging the preliminary details of the contest, and incidentally courting the patronage of the Automobile Club of America for the event. It is announced that the contest will be held on May 31 next, and not May 29, as first planned.

Milwaukee Club Plans for New Home.

At a recent meeting of the Milwaukee Automobile Club, Clarke S. Drake was elected president; W. L. Hibbard, first vice-president, and F. Printz second vice-president. It was decided by the members present to begin the erection of a new club house in the near future and a committee was appointed to inspect various proposed sites with that object in view.

TO KEEP DOWN PERFECT SCORES

Worcester's Endurance Contest to be Run Under Exacting Conditions—Five Blind Trips on the Schedule.

One of the most exacting short distance endurance contests ever planned will take place on Saturday next, 12th inst., when the Worcester (Mass.) Automobile Club holds its 200 miles reliability run. Things are not to be handled in slip-shod fashion by any means and the committee in charge of the contest has inaugurated a novel feature or two in its system of determining penalizations, which are well calculated to keep down the number of "perfect score" contestants.

Besides being run under the regular "sealed bonnet" conditions, with official observers, there will be two examinations of contestants, one before and one after the run, at which times minute measurements of parts will be taken to note any change in alignment, the amount of dish in front and rear wheels, and the "set" of the springs. Each of these examinations will cover the following measurements:

Distance between felloes of front wheels and ground.

Distance between felloes of rear wheels and ground.

Distance between center of right front and right rear wheels at center of hub caps.

Distance between center of left front and left rear wheels at center of hub cap.

Vertical distance from center of right front spring to frame.

Vertical distance from center of left front spring to frame.

Vertical distance from center of left rear spring to frame.

Vertical distance from center of right rear spring to frame.

Before the final examination there will be a brake, clutch, transmission and motor test. In the clutch test the front wheels of the car will be tested against a vertical 8-inch curb, the low gear engaged and the clutch let in. Failure to spin rear wheels or climb curb will signify a bad clutch and 30 points will be docked.

In the transmission test, the cars will be driven on different forward speeds and reverse. Failure to drive on any one speed will cost 25 points. To determine whether the transmission is tight, contestants will have to stop the motor, then engage clutch and low gear and then push the car back and forth, to note whether the transmission case is loose on the frame.

The run will cover five different blind trips about Worcester, of 40 miles each. Cars are to be checked at approximately every 20 miles, with 3 minutes leeway on the prescribed schedule at controls. There will be no postponement of the contest in the event of inclement weather.

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DRASTIC JUSTICE IN CONNECTICUT

Chauffeur, Convicted of Manslaughter, Gets Prison Sentence—The Court Mercilessly Denounces Recklessness.

Not less than three nor more than four years in State's prison is the severe sentence that Judge Case in the Connecticut Superior Court imposed upon William H. Phair, a chauffeur who ran down Robert G. Merriman as the latter stepped from a trolley car in Hartford some time ago. The judge pronounced this penalty on Wednesday, December 2, the defendant having been convicted on a charge of manslaughter, partly with the intention of making an example of him. In summing up the case, the judge said:

"It seems to me that this case presents a particularly grave instance of criminal recklessness, and while I am fully impressed with the strong evidence presented here as to this man's previous excellent character, that neither condones his offense nor makes it possible for the court to overlook the public rights in imposing sentence. There is no more room on our public streets for an automobile in the hands of a drunken chauffeur than there is for a loaded rifle in the hands of a drunken soldier; one is hardly less a menace to human life than the other. But while this case is a serious one and calls for a serious penalty, it is well also to remember that an actual criminal intent is lacking. It is the man's gross recklessness that has brought him here, his gross disregard of the rights of other travelers, and his gross abuse of the responsibilities which every reasonable man should feel attends the running of an automobile on the public street, and I trust the lesson which this case suggests will lodge with profit to themselves and with benefit to the rest of the public in the minds of that obnoxious class of automobile drivers, who obey no law that runs counter to their own selfish convenience."

Hartford Forbids Hampering Motorists.

Hartford, Conn., has a new traffic ordinance possessing several good features, at least one of which would prove a fine thing for any other cities. It has to do with the crowding of automobiles by trucks and other vehicles in such a manner as to cause damage, and is aimed at the vicious practices of teamsters which are so common. A few days ago an arrest was made in Elm street, Hartford, under the recent provision and the offender fined for violating the road rules. John Kraftcon, a truckman, was driving on the right side of the road, when he suddenly swung over to the left-hand side in front of an approaching trolley car. His action was so timed that it pocketed an automobile belonging to Max Adler and driven by Samuel Gardner, between the trolley car and the truck. The chauffeur was on the proper side of the street, running in the same direction as the trolley and while he made an effort to prevent a smashup, he could not avoid swinging into a telegraph pole at the curb, breaking a rear mud guard. The truckman declared that his horse had been frightened by the trolley and as there was considerable doubt in this respect, the court fined him only $1 and costs.

Trolley Car Cuts a Cab in Two.

A growing sense of their own importance has led many taxicab drivers into the error of supposing that their career of reckless driving could go on forever unchecked. Occasionally, however, punishment is automatically meted out to them. A favorite pastime among them is that of racing with trolley car motormen to a certain post or "L" pillar and then cutting in ahead of the surface car in a manner that causes the motorman to slam on his brakes hard enough to flatten the car wheels, in order to avoid a crash—for taxicab drivers know full well the timidity of the knights of the controller and gong.

One Pat Cleary, on December 3d, however, suffered his just deserts when he tried this stunt without signaling to a motorman and since then he has been wondering how that Sixth avenue car that jammed his mount against a pillar at Forty-fourth street, New York City, could cut the cab in two so neatly. The trolley made such a clean cut job of it that the cab was divided into two ludicrously even halves. Fortunately, no one was in the vehicle at the time and the driver sustained only slight bruises.

Chicago Questions Taximeter Readings.

Suspicions as to the correctness of taximeter readings have been raised as the result of wide differences in the tariffs asked by different drivers going over the same route. Complaints have recently been pouring into the city hall at Chicago in great number, stating that there is something wrong with the instruments. One man, who uses taxicabs regularly between his office and his home, states that the legal rate is 90 cents, but that sometimes the meter will show $1.00, frequently $1.10, and occasionally $1.20. At present there is no municipal inspection of taximeters in Chicago, but the aldermen are considering putting the instruments in the same class with gas and electric meters, and therefore, subject to examination and test by the city authorities.

Scranton to Have More Cabs.

Scranton, Pa., will shortly have an abundance of taximeter cabs, as two concerns are now preparing to operate there. The Lackawanna Automobile and Taxicab Co. has been formed and will compete with the Scranton Garage and Motor Car Co., which has announced that it will introduce cabs of this type very soon.

CALIFORNIA'S MOTOR CAR CENSUS

Registration for Three Years Shows Total of 18,698 Vehicles—Aggregate Value Estimated at $37,000,000.

That there is about $37,000,000 worth of motor cars in the state of California, is evidenced by the last monthly report of Charles F. Curry, Secretary of State, in which he says that during the past three years 18,698 motor vehicles have been registered in his office. Estimating the average value of each car at $2,000, the large figure mentioned above is not far wrong, and while a number of the registered cars have been destroyed, others have been brought from other States and not registered, so that $37,000,000 is a fair estimate of the value of cars represented within the borders of the Golden Gate State.

The registration at the end of 1905 was 4,727. Taking it on the same basis, it would mean an invested interest of $9,454,000. At the end of 1906 the total registration was 8,764, with a valuation of $8,074,000, showing a decrease of $1,380,000. But this is accounted for to a great extent by the fact that the registration in 1905 took into consideration all the cars in existence at the time the law went into effect.

In 1906 many cars were destroyed by the big fire and were not replaced during the remainder of that six months. In 1907 there were 5,241 cars registered, conservatively estimated to be valued at $10,482,000. This shows a gain of $2,408,000 over 1906, being a net gain of $1,128,000 over the slump of 1905. For the 10 months of 1908 there have been 4,693 registrations, estimated to be valued at $9,386,000.

District of Columbia's Automobile Income.

In its annual report to the commissioners, the automobile board of the District of Columbia states that during the last fiscal year, $2,666 was received in fees from identification and registration tags issued to owners and operators of motor vehicles. During the year 1,050 persons were examined by the board and of this number 1,035 received permits. Since the date of the first automobile examination in the district, held August 11, 1903, 4,366 permits have been granted to motorists.

The report recommends that all persons operating motor cars, other than the owners and members of the owners' families and non-residents, be required to take out a license and pay an annual fee of $1, basing the recommendation on the ground that every State in the Union having motor vehicle laws makes a similar charge.

Dallas Gets Taximeter Cab Service.

"Grand old Texas" is to have taximeter cabs, too. Five machines have been put in service in Dallas, by C. G. Galloway.

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The Week's Patents.

897,664. Disappearing Luggage Carrier for Automobiles. Edward T. Robinson, St. Louis, Mo., assignor to St. Louis Car Company, St. Louis, Mo., a Corporation. Filed Feb. 11, 1908. Serial No. 415,357.

1. The combination with a vehicle body, of a luggage frame slidably mounted in said body, so as to be shiftable thereunder, flexible means attached to the forward and rear ends of said frame, and means carried by said body on which said flexible means is operable, substantially as set forth.

897,694. Spring Suspension. William O. Worth, Evansville, Ind. Filed Nov. 21, 1906. Serial No. 344,427.

1. A spring suspension of the class described embracing a long semi-elliptical body spring and a shorter elliptical spring having one section rigidly bolted to the same and the upper section of the elliptical spring connected directly with the axle.

897,701. Detachable Rim for Vehicle Wheel Tires. Edwin A. Baker, New York, N. Y., assignor to Rapid Removable Rim Company, New York, N. Y. Filed Jan. 25, 1907. Serial No. 354,014.

1. A wheel construction, including a tire rim, a platform, one of said members having a recess, and two clamping members in said recess, one of said members being circumferentially adjustable; and the other member being radially adjustable.

897,715. Apparatus for Indicating or Recording Speed. Leonard E. Cowey, Brondesbury, England. Filed Oct. 26, 1905. Serial No. 284,524.

1. In apparatus for indicating and recording the speed of vehicles and other machines, the combination of a record bearing member, means actuated by the speed indicating mechanism of the apparatus for producing a speed-indicating record on said record bearing member, and means whereby said record is automatically obliterated by the working of the apparatus after a predetermined interval has elapsed, for the purpose specified.

897,726. Vehicle Tire. John L. G. Dykes, Milford, Ill. Filed July 30, 1906. Serial No. 328,397. Renewed May 6, 1908. Serial No. 431,162.

1. The combination with a tire body having a longitudinally split outer periphery and radially projecting flanges on either side of said split portion, of metal clamping rings applied to the outer sides of said flanges, the outer edges of said rings constituting in part the tread surface of the tire, and clamping bolts passed through said rings and flanges.

897,811. Automatic Pneumatic Tire Inflater. Robert C. Barrie, Philadelphia, Pa. Filed June 18, 1907. Serial No. 379,673.

1. In an automatic compensative air injector for automobiles, the combination of hub clamps with co-operative bolt fastenings for stable application, a projected lub serviceable to guide and guard the piston rod, a foot piece adjustable to various tire diameters, a piston and inclosing cylinder provided with end and side valves with a flexible tube connection to the air chamber of the wheel tire, substantially as set forth.

897,841. Tire Tool. Gustave Mohme and Aaron V. Hadlock, Chicago, Ill. Filed Feb. 8, 1907. Serial No. 356,457.

1. In a device of the kind described, a bar, a pair of arms pivotally connected to said bar at opposite ends thereof, each arm being provided with a transverse recess at its end, and the face of each arm arjacent its end being in a plane at an angle to the face of the rest of the arm, a wire guide and a wire clamp near the end of each arm, and means for causing movement of the ends of said arms towards and from each other.

897,861. Variable Speed Driving Mechanism. Henry M. Norris, Cincinnati, Ohio. Filed April 13, 1908. Serial No. 426,807.

1. In a variable speed device, a first and second shaft, a driving gear loose on one end of the first shaft, a compound gear adapted to turn with and slide on the intermediate portion of the first shaft, and having a clutch member formed thereon, and a third gear loose on the other end of the first shaft and having a co-operating clutch member for said first named clutch member, a double gear fixed to the second shaft meshing with the driving gear on the first shaft and adapted to be intermeshed with one of the members of the compound gear of the first shaft, a middle gear fixed to the second shaft and adapted to be intermeshed with the other member of the compound gear on the first shaft, a third gear fixed on the end of the second shaft and intermeshed with the end gear on the first shaft, and means for shifting the said compound intermediate with its clutch, substantially as described.

897,880. Wheel Tire. Josiah S. Cushing, Norwood, Mass. Filed Feb. 8, 1906. Serial No. 300,036.

1. In a resilient wheel, a felly having vertical guiding means extending continuously therearound, a flexible tire attached to said felly having radially and inwardly extending guiding means thereon, said tire guiding means extending inwardly beyond and being at all times in sliding engagement with said felly guiding means, whereby the tire is radially guided and laterally supported, and a continuous circular band within the tire, surrounding the felly, at a distance therefrom, which transmits the weight of the load to the tread portion only of the tire, substantially as described.

897,881. Elastic Wheel. Andre Dauvergne, Lyon, France. Filed Nov. 29, 1907. Serial No. 404,337.

1. An elastic wheel comprising in combination a rigid felly, a hub independent thereof, and capable of movement relatively thereto in the plane of rotation, a series of diametric spokes having central portions in sliding engagement with said hub, cushioning means interposed between the outer ends of each spoke and the inner surface of the felly, a central drum and rigid connections between the latter and the felly substantially as described.

897,909. Friction Clutch. Daniel F. Lepley, Connellsville, Pa. Filed July 17, 1907. Serial No. 384,196.

1. In an internal friction clutch, a revoluble disc or wheel having slots in its rim, one wall of one of the slots being concaved, a friction band encircling the rim, a lever pivotally mounted in one of the slots and having a curved seating face resting against the concaved wall of the slot, means for adjusting said lever to compensate for wear of the parts, a second lever extending through a second slot in the rim and engaging the opposite end of the band, and means for operating the second lever to apply or release the clutch.

897,936. Valve Stem Case. Edward B. Sinkler, New York, N. Y. Filed Oct. 1, 1907. Serial No. 395,350.

1. The combination with an engine having a valve stem and an actuating device therefor, of a case extending between relatively stationary parts of the engine and inclosing the exposed portions of the valve stem and actuating device, and a spring engaging the valve stem to seat the valve and also engaging the case to hold it in place.

898,043. Shock Absorber for Vehicles. Chas. K. Foster, Centerville, R. I. Filed June 12, 1907. Serial No. 378,557.

A shock absorber composed of a cylinder and a piston therein, said cylinder having ends provided with inwardly extending flanges interiorly threaded and secured to the cylinder, a plate transversely curved and disposed between said flanges, said plate having right angular ends which are curved and secured to said cylinder, enlarged portions at each end of said plate, each of which is apertured, and a screw in each of said apertures, the wall of said cylinder adjacent said plate being formed with openings aligning with said openings of the plate and adapted to receive said screws therein.

898,054. Projecting Lantern. Charles M. Lungren, Bayonne, N. J., assignor to The Railway Utilities Company, a Corporation of New Jersey. Filed May 20, 1907. Serial No. 374,678.

1. A projecting lantern comprising in combination, a lantern body having a forward lens and an opening intermediate the ends of its upper portion, a ventilating hood overlying said opening, a vapor burner positioned in said opening by laterally extending lugs secured to said body, one or more of said lugs having air channels, an inspirator for commingling with vapor the air from said channels a depending burner tube, a relatively small globular mantle mounted on the lower end of said tube, and a superheating coil arranged above said mantle in the path of the rising products of combustion.

898,057. Wheel. John W. Meixell, Lewisburg, Pa. Filed Feb. 17, 1906. Serial No. 301,596.

1. In a wheel, a rim tubular in cross section and having one edge turned up to form a clamping member and provided below the same at intervals with transverse registering bolt holes, in combination with a removable ring located at the opposite side of the rim at which said turned up edge is located and forming the opposite clamping member, and a series of bolts located in the bolt holes and terminating at one end beyond the rim in angular heads engaging the ring, said bolts being of a diameter agreeing with the space within the hollow rim whereby they reinforce the outer wall of said rim, and nuts for the ends of the bolts.

898,082. Brake for Vehicles. William Wolfe, Patton, Pa. Filed Aug. 22, 1907. Serial No. 389,644.

1. A vehicle brake, comprising a drop frame pivotally connected to the vehicle body in advance of the wheels to be braked and provided with arms extending toward the wheels to be braked, brake-shoe carriers telescopically combined with the arms of said drop-frame, brake shoes secured to said carriers in advance of the wheels to be braked, mechanism operatively connected to the said brake shoe carriers, and means for operating said mechanism arranged to exert its influence from a point in advance of the wheels to be braked, whereby a manipulation of said means operates to telescope

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said brake shoe carriers, withdraw the brake shoe forwardly from engagement with the wheels and lift the drop frame, substantially as described.

898,107. Heat Dissipating Device for Gas Engines. George S. Hill, Bradford, Mass., assignor to Hill Motor Car Company, Haverhill, Mass., a Corporation of Maine. Filed July 27, 1905. Serial No. 271,449.

1. A heat dissipating device for gas engines, comprising a fan shaped pin having integral protuberances.

898,139. Internal Combustion Engine. David Roberts, Grantham, England. Filed Nov. 9, 1907. Serial No. 401,487.

1. In an internal combustion engine, the combination with the cylinder and piston, of a vaporizing chamber exterior to but directly communicating with the cylinder, and having a portion of its wall not provided with a water jacket, and other portions provided with a water jacket, said chamber having an aperture on the water jacketed side, communicating with the air inlet and exhaust passages and valves controlling said passages, whereby said aperture serves as the air inlet and the exhaust outlet, substantially as described.

898,175. Power Transmission Mechanism. Wallace E. Belt, Dodge Center, Minn. Filed July 8, 1907. Serial No. 382,752.

1. In combination with the hub of a wheel to be driven, provided with a friction surface, a drive shaft, a system of levers each provided with an eccentric surface, a friction shoe carried upon said eccentric surface, and means carried by said shaft for turning said levers and causing said shoes to impinge against said friction surface and transmit motion from said shaft and for holding said levers inoperative when the driven element rotates at a greater speed than the driving element.

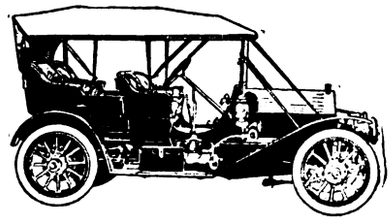
898,238. Radiator. Joseph B. Long and Frank Todd, Chicago, Ill.; said Todd assignor to said Long. Filed May 11, 1907. Serial No. 373,157.

1. A radiator having a plurality of tubes and a plurality of strips of sheet metal having transverse flutes or corrugations, a pair of said strips being arranged between each two adjacent sides of each pair in contact with each other and the flutes on the remote sides of each pair in contact with adjacent

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tubes, the summit of one of each two contacting flutes having a groove into which the summit of the other projects.

898,249. Steering Mechanism. James G. Maxwell, Washington, Pa. Filed Dec. 17, 1907. Serial No. 406,848.

1. A steering mechanism comprising the combination with the hubs of a pair of wheels, a pair of supporting plates, an axle mounted in each of the hubs and provided with an inward extension terminating in a bearing and positioned between the plates at one end, means extending through the plates and bearings for pivotally connecting the bearings, a pair of confronting segment shaped racks interposed between said plates and of a length greater than the width of the plates, a pinion arranged between and meshing with the racks, a vertical bearing for the pinion, a pair of connecting members one being between each rack and its adjacent bearing, said members positioned between said plates, an actuating pinion arranged within and engaging with one of the racks and adapted when operated to shift the first mentioned pinion and the racks whereby the bearings are revolved upon their connecting means, and means for operating the actuating pinion.

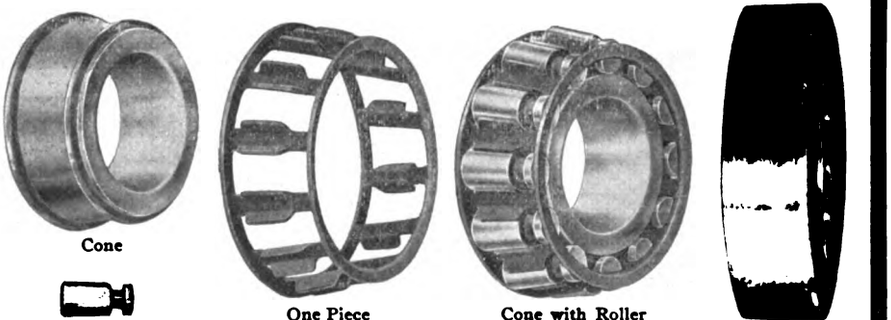
898,278. Steering Gear. Daniel W. Smith, Oyster Bay, N. Y. Filed Jan. 8, 1908. Serial No. 409,826.

1. Steering gear of the class described comprising in combination with a steering rod shaft, a gear wheel mounted fast on the shaft, an equalizing gear mounted loosely on the same shaft, a driven gear mounted on an exis at right angles to said shaft, and meshing with the fast and loose gears on said shaft, and an oscillatory arm bearing a fixed relation to the driven gear and adapted to transmit motion to the steering connections of the steering wheels.

898,280. Vehicle Wheel. Irving Snell, Little Falls, N. Y. Filed Oct. 22, 1907. Serial No. 398,556.

A vehicle wheel having a felly, a metallic band encircling the felly and rigidly secured thereto and of a width greater than said felly, a resilient band encircling said metallic band and having a plurality of cavities or openings therein, a second metallic band encircling said resilient band and connected to said first-mentioned metallic band, a second resilient band encircling the second metallic band and having a plurality of ridges on its peripheral surface, means carried by said last-mentioned metallic band for engagement with the last-mentioned resilient band and encircling the wheel.

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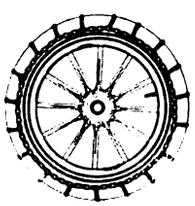
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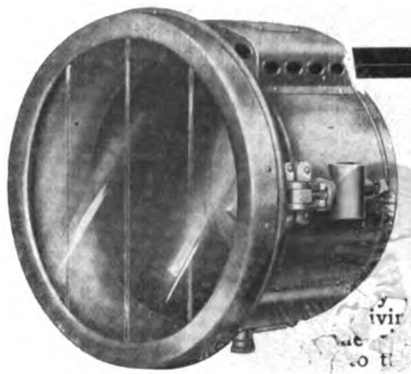
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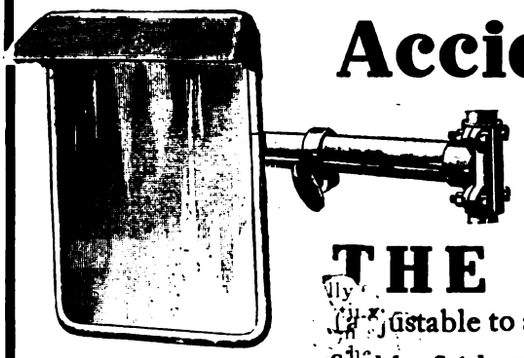
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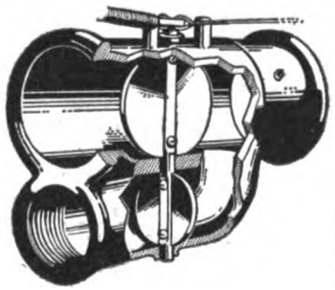
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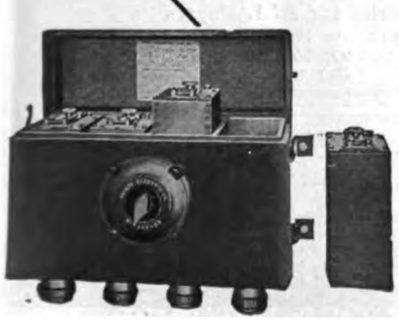
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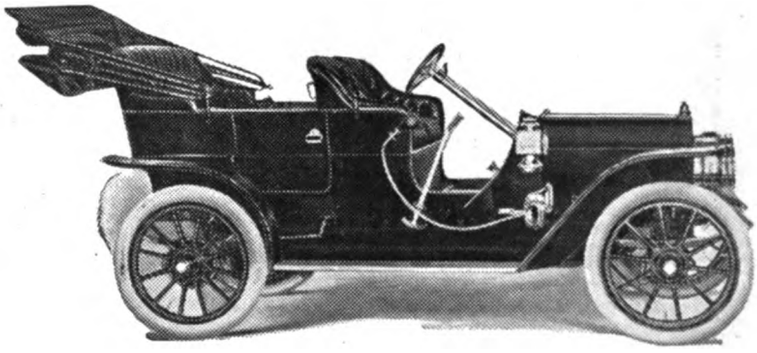
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The newest and best wrench made; all steel—great strength; instantly adjusted; easily and quickly operated; positive grip; immense time, trouble, and temper saver; best "all round tool" ever offered for sale.
"You will want one when you see it."
For circular address,
THE PERFECTION WRENCH CO.,
Box 426, PORT CHESTER, N. Y.

3 ESSENTIALS IN MOTORING
SELF CONTROL
CAR CONTROL
THERMOID
BRAKE LINING

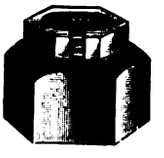
MORGAN & WRIGHT TIRES
ARE GOOD TIRES

Listen for the knocks!
The car they all knock is the one they are all afraid of
The E-M-F. "30"—sure!

You will have such perfect results that you can be on good terms with yourself every day in the year if you use SPLITDORF Ignition.

PALMER SINGER
1620-22-24 Broadway, New York
1321 Chicago, Ill. Michigan Ave.,
PALMER & SINGER MFG. CO.

Stoddard-Dayton
ONE Quality for ALL Models
ONE Price for ALL Buyers
Write for 1909 Catalog.
THE DAYTON MOTOR CAR CO.,
Dayton, O.



A Necessity On Automobiles—WHAT?
COLUMBIA LOCK NUTS
CANNOT shake loose. They add an important factor of safety and give a feeling of security. Columbia Lock Nuts are the best kind of accident insurance. Used by most makers of the best cars and by leading railroads, etc. Send us a two-cent stamp, size and thread of the bolt, and we will forward a Columbia Lock Nut for it.



COLUMBIA NUT & BOLT CO., Inc., Bridgeport, Conn.

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WHITLOCK RADIATORS
INTAKE, EXHAUST AND WATER PIPES
Whitlock Coil Pipe Co. Hartford, Conn.



How Are Your Batteries?
A CONNECTICUT VOLT AMMETER WILL TELL YOU
Guaranteed, and the price is right, send for catalogue and trade discounts.
CONNECTICUT TELEPHONE and ELECTRIC CO., Inc.
Meriden, Conn.

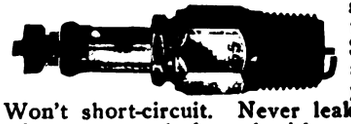
WE WILL NOT
accept your contract unless we can give you the delivery you require. We will not accept more contracts than we can fill with proper attention to each. We make Pressed Steel Frames and Automobile Stampings.
THE HYDRAULIC PRESSED STEEL CO.,
Cleveland, Ohio.

DOW TUBES
The Best Tubes Ever Manufactured.
Are the most economical. Do not deflate when punctured.
DOW TIRE COMPANY,
2000 Broadway, New York.
889 Boylston St., Boston, Mass.

Continental
READY FLATED TIRES
Universally approved by all motorists.
CONTINENTAL CAOUTCHOUC CO.,
1788-90 Broadway. New York City.
WRITE FOR PRICES OR INFORMATION

"Firestone"
SIDE-WIRE SOLID MOTOR TIRES
THE WORLD'S STANDARD
FIRESTONE TIRE & RUBBER CO., Akron, Ohio

The "Gotham" STA-RITE will end your spark plug troubles. Soot can't stick to the porcelain.



Won't short-circuit. Never leaks. Can be taken apart and cleaned with ease. Of dealers, or direct, $1.00.
THE R. E. HARDY CO., 25 W. 42d St., New York.

The PULLMAN
4-40 Roadster. Price, $3.000.
that made the run from Philadelphia to Savannah, Ga., March 5th to 18th, through mud up to the radiator, beating all previous records.
YORK MOTOR CAR CO., York, Pa.

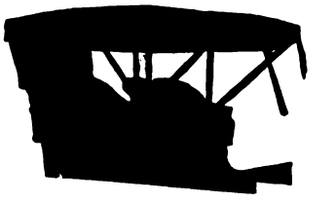


It is not possible for any chain to be better than
BALDWIN CHAINS
BALDWIN CHAIN & MFG. CO.,
Worcester, Mass.

The Acme
JUSTIFIES ITS NAME
THE ACME MOTOR CAR CO.
Reading, Pa.

MICHELIN
MICHELIN TIRE COMPANY
MILLTOWN, N. J.

SPRINGFIELD TOP (Pat. 1895)
Aluminum Bodies
SPRINGFIELD METAL BODY CO.,
306 Birnie Ave.,
Springfield, Mass.



Studebaker
Gasoline and Electric—for Pleasure and Business
Studebaker Automobile Co., South Bend, Indiana



Steel Tires
Full of Air.
Tire expense cut in two.
Cannot Blow Out, Rim Cut or Puncture.
As Flexible as Rubber
Anti-Skid.
That part of a tire with a blowout or a rim cut in it will last longer than any other part if encircled by a few sections of steel.
Thousands in use.
Kimball Tire Case Co.
172 Broadway
Council Bluffs, Iowa

THE MOTOR WORLD PUBLISHING COMPANY
154 Nassau Street, New York

Enclosed find $2.00 for which enter my subscription to
The Motor World
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STEPNEY
SPARE WHEEL

Every motorist should carry a "Stepney" and avoid all troublesome delays caused by punctures and blowouts. Write for Catalogue D.

The Only Cure for Tire Troubles

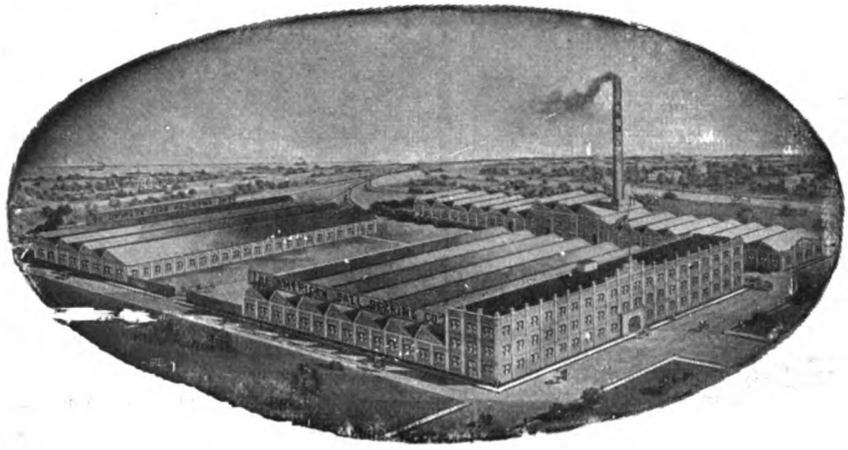
DISTRIBUTORS — AMERICAN STEPNEY SPARE WHEEL CO., 1773 Broadway, New York Ciy. AUTO SPARE WHEEL CO., 22d, Oak and Gillham Blvd., Kansas City, Mo. EXCELSIOR SUPPLY CO., 1436 Michigan Ave., Chicago, Ill.

Model B—Brush Runabout

A CAR OF SIMPLE DESIGN MADE WELL
NOT A COMPLICATED DESIGN MADE CHEAPLY

Its records and the opinions of its users speak more loudly than self praise. Agencies for 1909 are being closed rapidly. Much good territory still open.

BRUSH RUNABOUT COMPANY, Detroit, Mich.



The output of complete Front and Rear Automobile Axles of this plant exceeds the capacity of all competition combined.

THE American Ball-Bearing Co.

L. S. & M. S. Ry. & Edgewater Park

CLEVELAND, OHIO, U.S.A.



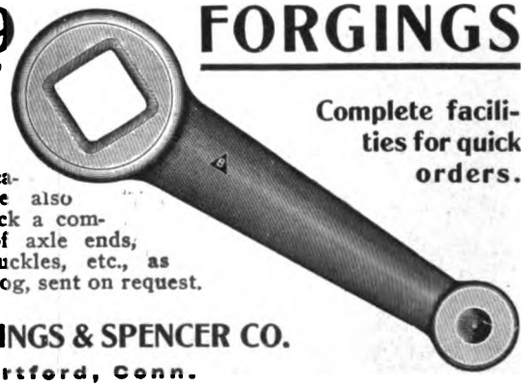
For Automobile Bodies, Dashes, Guards, Bonnets, Battery Boxes, Drip Pans, Mufflers, Etc.

STRONG—DURABLE
CALELESS—RUSTLESS
SMOOTH—PAINT ADHERES FIRMLY

A Metal That's A Time and Money Saver

THE STARK ROLLING MILL COMPANY, CANTON, OHIO

1909 FORGINGS



Complete facilities for quick orders.

Send us your specifications. We also carry in stock a complete line of axle ends, steering knuckles, etc., as per our catalog, sent on request.

THE BILLINGS & SPENCER CO.

Hartford, Conn.

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PIFFLE

Races or tours won with this or that speedometer. Isn't it ridiculous to cackle about a few hundred or a few thousand miles?

Such is not a test for a good speedometer.

The STEWART SPEEDOMETER IS GUARANTEED

for five years, 100,000 to 200,000 miles.

The Stewart & Clark Mfg. Co.

have the largest output, the most satisfactory speedometer on the market, and the largest number of satisfied customers.



Model 4

Stewart & Clark Mfg. Company

509 Diversey Boulevard, Chicago, Illinois, U. S. A.

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OPENS NEW YEAR'S EVE

Finest Decorations by S. R. BALL CO. ever offered at any Motor Car Exhibition

DEC. 31 to JAN. 7

Leading American Cars—All the Foreign Cars direct from the Paris Salon—All Accessory Makers

COMMERCIAL VEHICLES
MOTOR CYCLES
TAXICABS



9TH INTERNATIONAL
AUTOMOBILE SHOW

Management of American Motor Car Manufacturers' Association

GRAND CENTRAL PALACE

FORTY-THIRD STREET AND LEXINGTON AVENUE, NEW YORK

Admission, 50c. Tuesday, $1.00

Gasolene—Electric—Steam

How the "goodness" is put into Morgan & Wright Tires

1—By using only the best grade of pure Para rubber and finest quality of long Sea Island cotton fabric it is possible to buy.

2—By employing the most experienced help to be had, going on the principle that with materials of a high grade the quality of a completed tire is dependent upon the amount of brains put into its making.

3—By making them in the light of twenty-eight years' experience in the manufacture of rubber goods.

4—By making them in the newest and best equipped rubber plant in the world.

5—By adhering to this unvarying rule: That *every* tire that leaves the factory shall be as perfect in material and construction as money and skill can make it.

If you want your tires made that way, why not specify Morgan & Wright's on your car for next year? They cost no more than other brands.

MORGAN & WRIGHT, DETROIT

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Overland

The Most Complete Line in America

Model 30 Roadster (3-pass.), Planetary transmission,	$1,250
Model 30 Roadster (4-pass.), Planetary transmission,	1,300
Model 30 Coupe, Planetary transmission,	1,650
Model 31 Toy Tonneau (4-pass.), Planetary transmission,	1,400
Model 31 Tonneau (5-pass.), Planetary transmission,	1,400
Model 32 Toy Tonneau (4-pass.), Selective transmission,	1,500
Model 32 Tonneau (5-pass.), Selective transmission,	1,500
Model 34 Willys-Six Roadster or Tourist,	2,000

For Simplicity
For Reliability
For Appearance
For Comfort and
For Noiselessness

THE OVERLAND IS UNEXCELLED

OVERLAND AUTOMOBILE CO., INDIANAPOLIS INDIANA

THE Selden Car FOR 1909

enters upon its second year with a clean record. No "first year" car has ever earned a better reputation or made a better showing.

THE CAR OF MODERATE PRICE

Touring Car
Limousine
$2000
Roadster
Landaulet

4 cylinder, 28-30 horsepower, shaft drive, selective transmission, metal body, pressed steel frame, excellent hill climber, fine finish and style, roomy tonneau, luxurious upholstery, easy riding, smooth running, economical in up-keep, in fact, a high grade car in every particular.

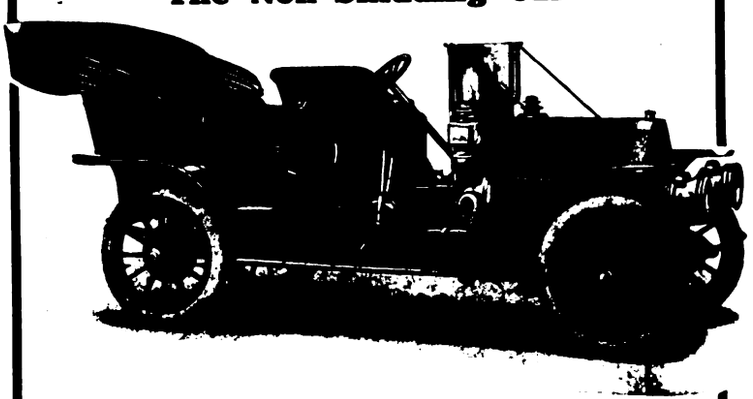
The "Silent Selden"

Agency proposition now ready. Send for catalog and specifications.

SELDEN MOTOR VEHICLE CO.
Rochester, N. Y.
Member A. L. A. M.

THE "JEWEL 40"

The Non-Skidding Car



SPECIFICATIONS

ENGINE—Rutenbur.
BORE AND STROKE—4¼x5″
IGNITION—Double—Bosch Magneto, Connecticut Coil and Exide Storage Battery.
LUBRICATION—Self contained system with oil level pump in crank case.
TRANSMISSION—Selective type, 3 speeds forward and reverse.
BEARINGS—Timken Roller.
FRONT AXLE—One piece drop forging.
REAR AXLE—Full floating type.
WHEEL BASE—120″.
WHEELS—36″.
TIRES—Goodyear, Diamond, Firestone or Hartford, 36x4″ front, 36x4½″ rear.
BODY—Seven passenger.
WEIGHT—3,000 lbs.
PRICE—$3,000.00 complete with top, Hartford Shock Absorbers, Prest-O-Lite gas tank, 9″ Rushmore Search lights, side lamps and tail lamp, double tire irons and trunk rack.

Write for catalog.

THE FOREST CITY MOTOR CAR CO., Massillon, Ohio
New York Agency, JEWELL MOTOR CAR COMPANY, 1662 Broadway.

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The Largest Automobile Supply House in America

WINTER SUGGESTIONS

We have a large line of Leather Clothing, Caps, Gloves, Wool Vests, Wool Boots, Ways Mufflers, Storm Coats, Lap Robes, Etc.

ARGYLE AUTO BOOTS

Worn over Shoes for Comfort in Cold Weather Motoring.



The ARGYLE Auto boots are designed to give the motorist's feet complete protection from the elements during winter weather motoring. They are worn over the ordinary shoes and can be pulled on or off very readily. They will keep your feet warm and dry during the longest ride in coldest weather. You cannot realize the comfort they give in frigid weather, till you have worn a pair.

Every man, woman and child who motors in cold weather needs a pair of ARGYLE Auto Boots, no matter whether the time of exposure is a half hour or a whole day.

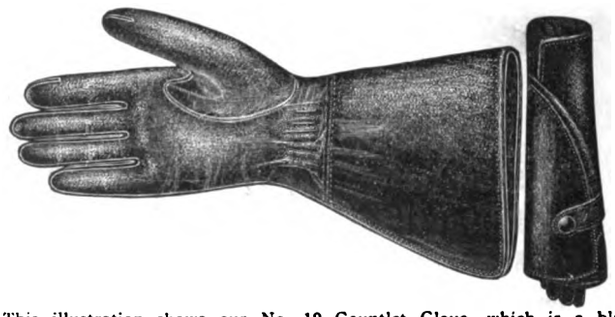
They are made of fine flexible leather, have strong leather Goodyear welted soles and are warmly lined throughout with genuine lambs-wool.

Made in all sizes, with long or short leg. Length of the long leg is 13½ inches,, and the short 10½ inches.

PRICES:

Long, per pair $9.00
Short, per pair 8.00

NO. 19 AUTOMOBILE GAUNTLET GLOBE



This illustration shows our No. 19 Gauntlet Glove, which is a black, seamless knit lined Automobile Gauntlet with extra large flexible cuff with 2 fastenings. This Gauntlet is made from the best selected imported black cape leather. It has a 7-inch Gauntlet with extra large cuff, 20 inches in circumference, which may be adjusted to smaller sizes. The cuff is lined and is guaranteed not to crack, and is stitched with genuine silk.

It will also be noted from the illustration, that the wrist is fitted with an elastic band, which will keep the Gauntlet tight, and comfortable on the wrist, and prevent it slipping down over the fingers.

The cuff is also flexible, and can be rolled into a small space, as shown in the small illustration, for carrying in the pocket. This is the finest Gauntlet Glove on the market.

Price, seamless knit lined, per pair $3.50

CATALOGUE MAILED ON REQUEST

CHAS. E. MILLER, Manufacturer, Jobber, Exporter and Importer, MAIN OFFICE: 97-99-101 READE STREET, NEW YORK

BRANCHES—54th St. and 8th Ave., New York; 202-204 Columbus Ave., Boston, Mass.; 318-320 N. Broad St., Philadelphia, Pa.; 227½-229 Jefferson Ave., Detroit; 1829 Euclid Ave., Cleveland, O.; 1392 Bedford Ave., Brooklyn, N. Y.; 824 Main St., Buffalo.

SEE OUR EXHIBIT AT BOTH NEW YORK AUTOMOBILE SHOWS.

STEVENS-DURYEA

LIGHT SIX MODEL U

It has been a source of gratification to us to be the recipients of a number of unsolicited testimonials regarding our Light Six Cars.

Because of the great pressure individual owners exerted to have us build an additional quantity of these models, we were obliged to materially increase our output for 1909. The Light Six Automobiles we will market, considerably exceed in number the volume we had originally planned to construct.

The third consecutive year of the existence of the Stevens-Duryea Light Six Model U demonstrates how the popularity and consequent wide spread demand for this car is undiminished and unabated.

"Facts are Stubborn Things"

STEVENS-DURYEA CO.

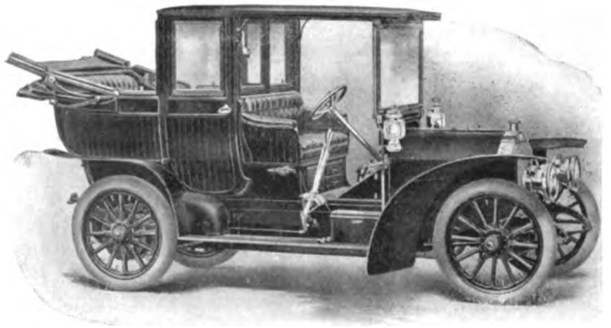
Chicopee Falls, Mass.

Member of Association of Licensed Automobile Manufacturers.

Matheson

1909 Prices Reduced $1,000

In order to sell hereafter this highest of all high-grade cars at the prices of the cheaper cars, we have **increased our working capital by $250,000** and will **double our factory output.** Send for our book of customers' letters telling of the experiences of the most prominent men of affairs in this country with their Matheson cars, covering thousands of miles of service everywhere.



	New Price.	Former Price.
50 H. P. 1909 Touring Car	$4,500	$5,500
50 H. P. 1909 Roadster	4,350	5,000
50 H. P. 1909 Runabout	4,350	5,000
50 H. P. Limousine	5,500	6,500
50 H. P. 1909 Landaulet	5,500	6,500

MATHESON AUTOMOBILE CO.

Main Sales Office, 1886-1888 Broadway, NEW YORK CITY

Dealers wanted in all open territory.

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Exclusive Motor Lamp Features of

SOLAR LAMPS

For 1909 Equipment

FEATURE 1—All Headlights are assembled with INTERIOR SCREWS—producing a perfectly smooth exterior surface.

FEATURE 2—Special short-focus mangin mirror reflectors of the highest QUALITY and EFFICIENCY—made exclusively for Solars by Bausch and Lomb.

FEATURE 3—The entire construction by tools and jigs which assure the user absolutely interchangeable parts and repairs in future, is an important feature to the purchaser.

1909 Descriptive Booklets embodying all models and prices sent on request.

Badger Brass Mfg. Co. 604 Lyman Ave. Kenosha, Wis.

The Superiority OF Standard Bearings

is due to the absolute harmony of their various parts—not one feature here and there, but a combination of all that is best in bearing design, material and construction.

Wherever used, they prove their superiority—they run better, wear better and are better in every respect.

SEND FOR NEW CATALOG

Standard Roller Bearing Co.

PHILADELPHIA, PA.

"Firestone"

NON-SKID TREAD

Composed entirely of rubber. Formed by the raised lettering "FIRESTONE NON-SKID" arranged obliquely across the tread surface.

Contains more angles, edges and points of road contact than any other non-skid.



Spaces in and between the letters cause a suction that grips the road and prevents slipping.

The wear-resisting quality of this tread is a revelation to motorists accustomed to the quick wearing down or tearing out of the ordinary non-slip devices.

FIRESTONE TIRE & RUBBER CO., AKRON OHIO

Branches and Agencies Almost Everywhere

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Ninth National Automobile Show

Madison Square Garden

January 16 to 23, 1909, New York City

Under the Auspices of the

Association of Licensed Automobile Manufacturers

Exhibiting standard Gasoline Cars licensed under the Selden patent.

LICENSED GASOLINE CARS

Apperson	Columbia	Hewitt	Packard	Royal Tourist	Stevens Duryea
Autocar	Elmore	Knox	Peerless	Sampson	Studebaker
Buick	E-M-F-	Locomobile	Pierce Arrow	Selden	Thomas
Cadillac	Franklin	Lozier	Pope Hartford	Simplex	Walter
Chalmers-Detroit	Haynes	Matheson	Pope Toledo	Stearns	Waltham
Corbin					Winton

ELECTRIC

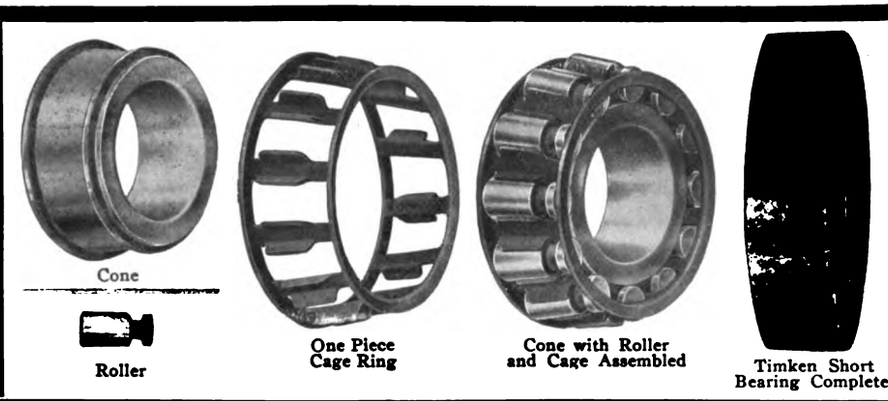
Anderson	Bailey	Champion	General Vehicle Co.	Studebaker	Woods
Babcock	Baker	Columbia	Rauch & Lang	Waverly	

STEAM

White

Complete exhibit by the Motor & Accessory Manufacturers. The only complete Motorcycle exhibit in New York, by the Motorcycle Manufacturers' Association, Commercial Vehicles, Town Cars and Taxicabs.

New Series TIMKEN Short Bearings



In offering the Automobile trade our **New Series Timken Short Bearings,** we do so with the assurance that they are made from the same carefully selected steel and subjected to the same severe tests as our standard size Bearings.

The **New Series Short Bearings** are designed for use in axles where the bearings space does not permit the use of our regular series.

These Short Bearings can be used on any axle, transmission, or other places where Annular Bearings can be used. They carry **a much greater load** than Annular Bearings of the same length, **are smaller in diameter** and in addition will take as much **end thrust** as they do **radial load.**

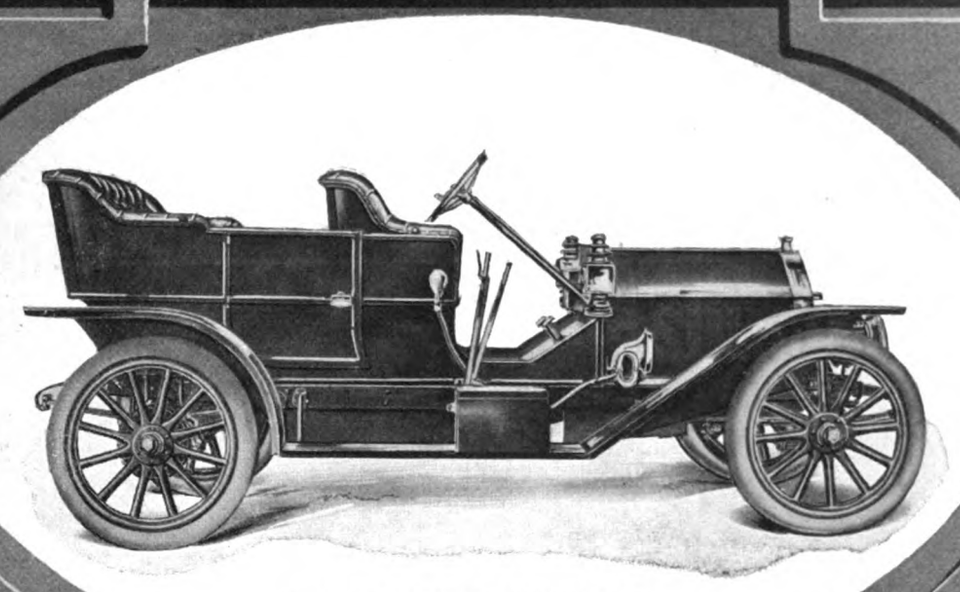
Every bar of steel entering into **Timken** Products is made to the **Timken** analysis chemically—and tested to the **Timken** test physically—which means a rejection of **45 per cent.** of every ingot before metal of suitable density and soundness for **Timken** Roller Bearings can be obtained. These new Short Bearing Rollers are made from best nickel steel.

This is one reason why **65 per cent.** of the makers of high-grade Automobiles and over **90 per cent.** of the commercial truck builders of this country use **Timken** Roller Bearings. **WRITE FOR CATALOG AND PRICES**

THE TIMKEN ROLLER BEARING AXLE CO., Main Office, CANTON, O.

Branches: 10 E. 31st St., NEW YORK 429 Wabash Ave., CHICAGO

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THE INTER-STATE TOURING CAR
Model 25, $1750.00

The Inter-State

THE INTER-STATE Automobile is built for the intelligent purchaser who wants the high quality which heretofore has been found **only** in **high-priced** cars, but who does not want to pay from twenty-five hundred to five thousand dollars.

The INTER-STATE makes it unnecessary for such purchasers to pay such prices.

It is a **permanent** car, embracing every essential factor of worth in automobile design, style, comfort, speed, endurance, dependable materials and workmanship. And it is sold at a price—$1,750 complete, including Eiseman Magneto — but little higher that the cheap good-enough-until-later cars.

There is no economy and most assuredly no automobile satisfaction in buying a car that you will want to discard the second season for a **real car.** Especially since you can buy the **real** car, the **satisfying permanent** car **this** season for just a little more money than a temporary car.

In justice to your own best interests, let us urge you not to **think** of spending your money for a "cheap" car, or even a higher-priced good car, until you have seen the INTER-STATE. We are glad to let you be the sole judge as to its worth at $1750.

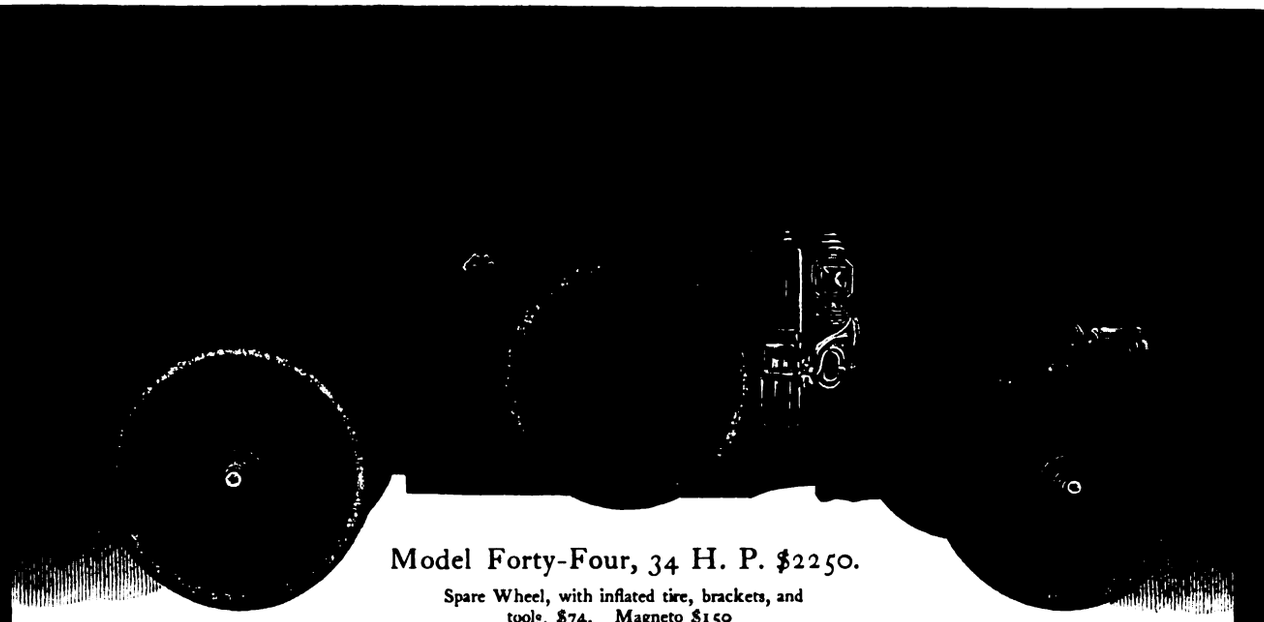
Dealers and Agents will appreciate the opportunities opened to them by the INTER-STATE. Write for our attractive proposition.

Inter-State Automobile Co., 126 Willard Street, Muncie, Ind.

AT THE SHOWS

The full line of Inter-State automobiles, including Standard Touring Car, Demi-Tonneau, Double Rumble Roadster, Single Rumble Roadster and Tourabout, will be exhibited at Grand Central Palace, New York, December 31-January 7, and at the Coliseum, Chicago, February 6-13.

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Model Forty-Four, 34 H. P. $2250.

Spare Wheel, with inflated tire, brackets, and tools, $74. Magneto $150

THE STRAIGHT-LINE-DRIVE

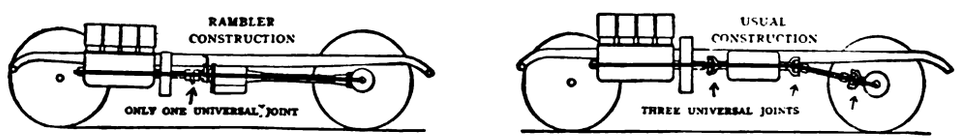
Power cannot be carried around a corner without great loss, due to friction. In the ordinary automobile much energy is wasted in transmitting the power from the engine to the rear axle through universal joints, or, in other words, around corners.

In the Rambler the driving shaft, when the load is in the car, is in direct line with the crank shaft and the angle found at one of the universal joints in most other driving systems is eliminated. The drive is thus accomplished in a direct line.

The Rambler straight-line-drive delivers the maximum power—saves energy—prevents wear—reduces cost of upkeep.

Rambler

The Car with the Offset Crank Shaft



Seven passenger Model, forty-five horse power, with offset crank shaft, $2500. Other models $1150 to $2500. Write for catalog describing in detail Rambler offset crank shaft, Spare Wheel, straight-line-drive and other exclusive features of the new Rambler models.

THE CAR OF STEADY SERVICE

Thomas B. Jeffery & Company, Main Office and Factory, Kenosha, Wis.

Branches and Distributing Agents:

Chicago, Milwaukee, Boston, New York, San Francisco. Representatives in all leading cities.

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, December 17, 1909. No. 12

ANOTHER POPE COMPANY IS BORN

Makes Ready to Take Over Business from Receivers—Creditors to Get Payment with Interest Added.

Marking the final period of reorganization, a new Pope Manufacturing Co. was incorporated on Saturday, the 12th inst., which is to take over the property and business from the receivers. While bearing the same name as the old company, the new corporation differs from the old in that the papers were taken out under the laws of Connecticut instead of New Jersey. The incorporation is preliminary to the almost immediate transfer of Pope affairs to the reorganized concern, and indicates an early payment of a final dividend to all Pope creditors with approved claims. The receivers, Albert L. Pope and George A. Yule, further promise that 6 per cent. interest will be paid to the creditors on their claims for the period that payment was delayed, in addition to the satisfaction of the full face amount.

In accordance with the reorganization plan made familiar some time ago, the new company is capitalized with $2,500,00 preferred stock and $4,000,000 common, the shares having a par value of $100 each. The incorporators included Albert L. Pope, George Pope, Charles E. Walker and Wilbur C. Walker. At the meeting which was held in Hartford, Conn., on Saturday, there was present with the four incorporators, Attorney Lewis H. Freedman, of New York, representing beside himself, Harry Bonner, August Hockscher, Frederick H. Ecker, Albert Stickney, Henry V. Poor, Arthur W. Pope and Milton Ferguson.

Directors for the new company were chosen as follows:

For one year, Harry Bonner, Frederick H. Ecker and August Heckscher; for two years, Lewis H. Freedman, Albert Stickney and A. W. Pope; for three years, Henry V. Poor, A. L. Pope and Milton Ferguson. At a meeting of these directors, to be held shortly, the president and other executive officers will be chosen.

Bank Forecloses on Rainier Notes.

Notes aggregating $53,000 and secured by $100,000 in mortgage bonds covering real estate and other property of the company, were not taken up by the Rainier Motor Car Co., of Saginaw, Mich., when payment was due, and as a consequence the Bank of Saginaw, the holder, conducted an auction of the bonds on the court house steps, on the 4th inst., to satisfy the judgment. The notes represented an original loan of $50,000 to the company on July 29, 1908, together with two subsequent notes of $1,500 each given in lieu of interest payments.

Hardy Moves to Brooklyn Factory.

The R. E. Hardy Co., which makes "Sta-Rite" plugs and accessories, has moved its factory to Brooklyn, N. Y., taking space in the Bush Terminal buildings at Thirty-seventh street and New York Harbor. Three times the former factory area is provided by the change and further expansion is arranged for if necessary. The new factory address is 201 Thirty-seventh street, Brooklyn, while the office in Manhattan continues at 25 West Forty-second street.

Trenton Rubber in the Metropolis.

New York City headquarters for the Trenton Rubber Mfg. Co., of Trenton, N. J., have been established at 1997 Broadway. The office and salesroom will carry a large stock of the factory's products for the accommodation of the Metropolitan trade, including the company's inner tubes and Thermoid brake lining.

Morgan & Wright on Broadway.

Morgan & Wright have taken a long lease on a location at 1849 Broadway, to which the New York City branch, now on Forty-seventh street, will remove as soon as alterations can be completed. The building is above Columbus Circle, and is at present occupied by the C. G. V. Import Co.

PREPARE FOR THE TARIFF HEARING

Conference of Manufacturers' Committee—Miles' Statements Challenged—To Show Wage Comparisons.

Motor car tariff matters had a threshing out at a meeting on Saturday, the 12th inst., when the special committee having in charge the presentation of the domestic makers' case before the ways and means committee of the House at Washington, gathered in the board room of the A. L. A. M. headquarters in New York to perfect their plan of campaign. As a result of the meeting the American manufacturers will rest their objection to any reduction of the automobile tariff on the fact that they are paying more than twice as much as the foreign makers for corresponding labor and that a lowered tariff either means a lowered wage scale for employes here or a greatly lessened production, thereby endorsing the sentiment of the original brief published in these columns two weeks ago.

Those attending the conference were A. L. Riker, of the Locomobile Co. of America; Benjamin Briscoe, of the Maxwell-Briscoe Motor Co.; Alfred Reeves, general manager of the American Motor Car Manufacturers' Association; E. P. Chalfant, general manager of the Association of Licensed Automobile Manufacturers; H. B. Joy and E. H. Parkhurst. They went into session at about 1 o'clock in the afternoon and did not emerge until long after dark. The members of the committee had evidently been stirred to some resentment against H. E. Miles, of the National Association of Manufacturers, by his statement before the ways and means committee recently to the effect that he had information that a considerable portion of the domestic industry is in favor of a tariff reduction on automobiles. After the meeting a telegram was sent to Miles, challenging him to produce any dispatches or other evidence which he claimed to have in support of his state-

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ment that ht had communications from makers entertaining this view.

Light was thrown on the question as to who could have supplied Miles with any such impression as he seemed to entertain, by the fact that on Monday, the 14th inst., an attorney for the Buick Automobile Co., which recently obtained much enviable notoriety by failing to pay its current obligations to the A. L. A. M., appeared before the ways and means committee in Washington and indicated that his company was agreeable to a reduction to 30 per cent., as against the present 45 per cent., intimating also that a prominent company in Lansing, Mich., in close touch with his clients, was likewise willing that there should be a reduction. The inquisitors of the committee, however, soon discovered the milk in the Buick cocoanut. They elicited the information that the attitude of Buick and the Lansing company in thus running counter to the otherwise unanimous opinion of the trade, was due to the fact that they had automobile factories in Canada, where they enjoyed a low manufacturing cost and could under a reduced tariff sell their Canadian products in the United States.

Indicating the general character of the pleading before the committee at Washington, at the hearing next Saturday, the 19th inst., Benjamin Briscoe, president of the Maxwell-Briscoe company, issued the following statement on behalf of the committee of automobile manufacturers, after its session:

"The automobile makers have no desire to ask for an unfair rate of tariff, or for any special treatment. While the figures of wages in this country and Europe indicate that 60 per cent. duty would be necessary for adequate protection in the matter of labor, they do not ask for anything more than the existing rate of 45 per cent. As automobiles have come into use since the passage of the Dingley Bill, they now come in under the classification of manufactured metals, and it is our desire to have them properly classified under the heading of automobiles and parts thereof.

"It is our belief that the tariff on automobiles should be one to protect the American workman against the low wages paid abroad. This is in accordance with the principles actuating a protective tariff, and is consistent with the doctrine of the party now in power. There can be no dispute as to the meaning of these principles and this doctrine, as set forth in the platform of the Republican party, and voiced time and again by President-elect Taft, who said 'that the Republican party is unequivocally for a revision of the tariff by a special session of Congress immediately following the inauguration of the next president.' and laid it down as 'the true principle of protection that such duties be imposed as will equal the difference between the cost of production at home and abroad.' And moreover, 'to establish maximum and minimum rates to be administered by the president under limitations fixed by the law, the maximum to be available to meet discriminations by foreign countries against American goods entering their market, and the minimum to represent the normal measure of protection at home; the aim and purpose of the Republican policy being not only to preserve, without excessive duties, that security against foreign competition to which American manufacturers, farmers and producers are entitled, but also to maintain the high standard of living of wage earners of this country, who are the most direct beneficiaries of the protective system.'"

As indicating how close the foreign markets are to American trade, Briscoe points to the statement made by the representative of the importers when he appeared before the ways and means committee, in which he stated that even a 12 per cent. reduction from the present tariff would be entirely satisfactory to the foreign makers. This statement was taken to imply that this small reduction was all that was needed to give the foreigners absolute control of the American automobile market.

Rowland the Second Typhoid Victim.

John B. Rowland, president of the Publicity Press, New York City, died at his home Friday night, the 11th inst., of typhoid pneumonia. His death, following that of A. B. Elliott on Thanksgiving Day, marked the claiming of the second victim of the disease with which five men well known in the trade were stricken following a lunch on November 4 at a prominent New York hotel, where oysters were served, and of which they all partook. Mr. Rowland was 31 years old, and was born in Washington, D. C. He attended Georgetown University, at which time he was conspicuous in rowing. His commercial career was chiefly spent in building up an advertising agency business, a field in which he met considerable success. Although he had been married several years, he had no children.

The three surviving victims of the fever, including T. J. Wetzel, L. A. Hopkins and Herbert Lytle, are reported to be improving rapidly. It is thought that they will all soon be restored to good health.

Sues Craig-Toledo Stockholders.

Stockholders in the bankrupt Craig-Toledo Motor Co., Toledo, O., are being sued by Joseph W. Lane, the trustee in bankruptcy, for approximately $30,000, to pay the debts of the concern in full. The action has been begun in the common pleas court, against 23 defendants. The trustee alleges that the debts of the company aggregated more than $45,000, while the proceeds from the assets amounted to only $16,000 or less. He asks that the court ascertain the solvent stockholders and the amount of unpaid stock subscriptions due from each, in order that they may be assessed enough to enable him to clear the company's indebtedness to the creditors. The company was organized with a capitalization of $100,000, and Lane alleges that $51,000 in stock was issued to John Swindeman for the assets of the Maumee Motor Car Works, later estimated as not worth more than $1,500.

Plan Jobbing Business in Pueblo.

Tempted by the prospects of a jobbing business in the Southwest, a new wholesale house is opening in Pueblo, Col., to be known as the Pueblo Automobile Goods Co., and located at 214 Pope block, on Fourth street. The concern is capitalized at $25,000. W. L. Anderson, of the Anderson Coal Co., is president; L. H. Walker, vice-president; F. H. Bullen, president of the Pueblo Bridge Co., treasurer, and Ralph Cruzen, secretary and manager.

Organize to Make Self-Starters.

Grand Rapids, Mich., is shortly to have a factory devoted to the manufacture of a self starting device for automobiles invented and patented a year ago by J. Watson Fitzgerald. The concern will be known as the Starter Mfg. Co., and is capitalized at $40,000. The owners of the company include W. W. Annabel, president, and J. Watson Fitzgerald, secretary-treasurer, holding $15,000 in stock each, with L. J. Clark, vice-president, holding $10,000.

To Make Tire Cements in Toledo.

All of the cement machinery, trade marks and trade names of the bankrupt National Cement & Rubber Co., of Toledo, O., having been bought by the Sterling Cycle Sundry Co., of the same city, the latter concern will engage in the manufacture of tire cements on a large scale. Emile Haberstock, general manager of the Sterling company, was formerly superintendent of the National business.

Will Blossom as the Sunflower.

The St. Joe Motor Car Co., of Elkhart, Ind., is to blossom out as the Sunflower Motor Car Co., after it moves to Hutchinson, Kan. It will raise its capital from $50,000 to $100,000, and residents of Hutchinson will be permitted to buy stock. Charles S. Conover, of Kansas City, is president; O. G. Sellers, of Elkhart, Ind., vice-president; and W. F. Feckler, of St. Paul, secretary and treasurer.

Lindsley to be Reorganized.

Plans to reorganize the insolvent J. V. Lindsley Auto Co., of Dowagiac, Mich., are on foot. It is proposed to ask for a receiver to straighten out the affairs of the old company, after which it will be reorganized with $50,000 capital and will take a location in Seymour, Ind.

Mossberg Takes Control of Auto-Cle.

The Frank Mossberg Co., of Attleboro, Mass., will in the future manufacture the Auto-Cle automobile wrench. This well known device has in the past been made by the Quincy, Manchester, Sargent Co., but hereafter the Mossberg factory controls it.

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The Week's Incorporations.

Somerset, Pa.—Somerset Automobile Co., under Pennsylvania laws, with $10,000 capital. Corporators—J. S. Picking, Jr., et al.

Philadelphia, Pa.—M. T. D. Motor Parts Co., under Pennsylvania laws, with $25,000 capital; to manufacture and deal in motor vehicles.

Yonkers, N. Y.—Butler Electric Clutch Co., under New York laws, with $50,000 capital. Corporators—W. W. Butler, M. E. Thew, and C. Alexander.

Jersey City, N. J.—Rubber Substitute Co., under New Jersey laws, with $10,000 capital. Corporators—Robert Ferrier, Thomas R. Armstrong and Thomas H. Rose.

Chicago, Ill.—Randolph Motor Car Co., under Illinois laws, with $300,000 capital; to deal in automobiles. Corporators—E. C. Gage, E. W. Burgstresser, and S. Hytowitz.

Muncie, Ind.—Auto Parts Mfg. Co., under Indiana laws, with $15,000 capital. Corporators—Francis M. Boyer, John P. Kendel, A. Boyer, Arthur W. Taylor, Jr., and M. Kandel.

Jersey City, N. J.—Crude Rubber Regenerating Co., under New Jersey laws, with $50,000 capital. Corporators—Charles I. Taylor, Frank H. Parcella and Thomas H. Beardsley.

Cleveland, O.—General Auto Carriage Co., The, under Ohio laws, with $10,000 capital. Corporators—W. E. Crittenden, Charles F. Laughlin, F. A. Bishop, C. D. Stone and J. Sievwright.

New York City, N. Y.—Club Automobile Co., under New York laws, with $25,000 capital; to manufacture and rent cabs and automobiles. Corporators—T. Hopkins, E. L. Mooney and J. J. Robinson.

Buffalo, N. Y.—Grabowsky Power Wagon Company of Buffalo, under New York laws, with $25,000 capital; to manufacture automobiles and power wagons. Corporators—J. D. McDonald, J. F. Valley, and J. Moore, of Buffalo.

New York City, N. Y.—Self-Loading Wagon Co., under New York laws, with $25,000 capital; to manufacture motors, cars and power wagons. Corporators—M. Kotraschek and A. M. Bremer, New York City; D. W. Leonard, Paterson, N. J.

Rambler Show at New York Branch.

During the period of the New York automobile shows Thomas B. Jeffery & Co. will conduct a Rambler show of their own at their spacious New York branch recently established at 38-40 West Sixty-second streets. All Rambler dealers and friends will be entertained at the branch, and such conveniences provided as will make them feel at home. All of the 1909 Rambler models will be on exhibition and demonstration, and certain of the new features will be displayed in an attractive and convincing way. The Rambler spare wheel, which carries a fully inflated tire and can be substituteed for a regular wheel in three minutes, will also be shown.

Give Luncheon to the Garden Staff.

A luncheon to the staff of the Madison Square Garden was given by the management of the Association of Licensed Automobile Manufacturers, on the 15th inst., at the Hotel Breslin, New York, with the object of promoting a united spirit in making the coming Licensed automobile show at the Garden a complete success. The Garden delegation, headed by James C. Young, the secretary, and C. M. Schroeder, the business manager, included about 18 of the chiefs of various departments, while the Licensed contingent numbered about 14, headed by General Manager E. P. Chalfant, who presided.

Buffalo to Have Only One Show.

Buffalo's show situation promises to have a peaceful solution through the holding of but one show next spring. The annual election of the Buffalo Automobile Trade Association, just held, resulted in a victory for those favoring the one show plan as against the ticket whose platform advocated a separate exhibition from that given by the local automobile club. W. C. Jaynes headed the successful ticket as president.

Johnson Enjoins a City Purchase.

On the ground that the city did not issue a general call for bids, the Johnson Service Co., of Milwaukee, Wis., has obtained an injunction against the municipality restraining it from buying the car selected for the police department. The machine chosen was offered at $4,000, but the complaining company urges that more bids should have been invited.

Convention for Maxwell Dealers.

Maxwell dealers attending the Grand Central Palace show in New York will gather in annual convention on Tuesday, January 5, at the Hotel Manhattan. The new sales organization under which they are operating will be discussed.

Chase Reorganizes and Expands.

The Chase Motor Vehicle Co., of Syracuse, N. Y., has been reorganized and expanded. The plant in South West street is being remodeled and enlarged, while the working force is being increased to 500 men.

Midland Makes Capital Increase.

Increase in the capitalization of the Midland Motor Car Co., of East Moline, Ill., has been effected. The raise is from $100,000, at which the company incorporated last January, to $150,000.

Jeffery Branch in Cleveland.

Thomas B. Jeffery & Co. intend opening a branch in Cleveland, O. A choice of a location will be made in a few days.

In the Retail World.

Frank Z. Ames plans an automobile agency in Ottawa, Ill. He has leased the Ward building on Main street for the purpose.

W. S. Birnie, of Rome, N. Y., has built a new garage. In addition to carrying supplies, he will do machine shop and repair work as well.

H. M. Covey, of Portland, Ore., is in new quarters in the Wemme building, Seventh and Couch streets. Two floors accommodate his agency, repair and garage business.

The Deere & Webber Co., of Minneapolis, Minn., large dealers in agricultural implements, have added automobiles to their lines. They will handle the Velie, built in Moline, Ill.

A northern New Jersey branch of the Oldsmobile Co., of New York, has been opened in Newark, N. J. The formal opening took place at 88 Washington street this week.

The Central Pennsylvania Automobile Co., handling the Franklin at Harrisburg, Pa., has taken new quarters at Fourth and Chestnut streets. The building is 50 by 210 feet.

The Cameron Motor Co., of New York City, has taken a lease of the building at 231 West Fifty-fourth street. It will be made the Metropolitan headquarters for Cameron cars.

Charles Wentz and P. Miller, the latter a local theatrical manager, have opened an automobile agency in Dayton, O. It is temporarily located on Hannah lane, handling Jackson and Maxwell cars.

E. J. Wall, who until recently acted in the capacity of traffic manager for the Pope Mfg. Co., has joined the sales department of the Boston branch of Thomas B. Jeffery & Co. He will assist Manager C. P. Rockwell.

Rene A. Brassey, agent for the Thomas in Los Angeles, Cal., moves from Seventh and Olive streets to new quarters this month. The building prepared for him is at 846 South Olive street, and has all modern garage conveniences.

Racine Requires More Men and Space.

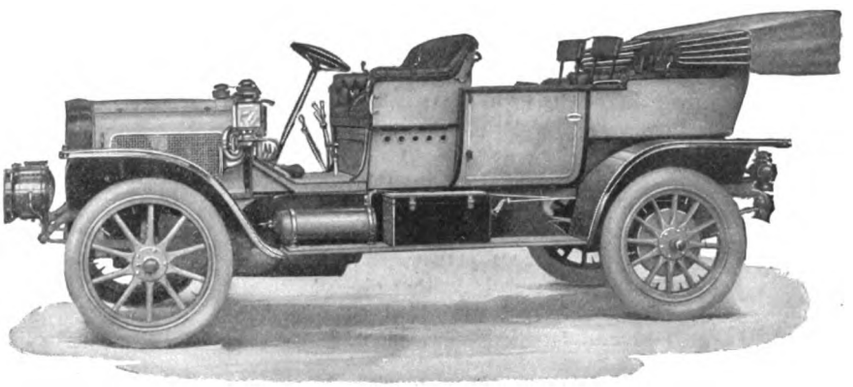
Increased business in the building of touring car, limousine and taximeter cab bodies, together with tops, dashes and other fittings, has led the Racine Mfg. Co., of Racine, Wis., to enlarge its factory. Two large, four story buildings have been prepared for occupancy and foundations for a third one are now being laid, while extensive purchases have been made of surrounding land, looking to future additions. A large number of expert body builders will be added to the force.

Worcester Will Try Taximeter Cabs.

John S. Harrington, of Worcester, Mass., believes that he can institute a successful taximete cab service there. He will install three as an experiment.

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THE
MODEL "M" WHITE STEAMER
Is The Most Luxurious Car On The Market



The luxury of the White Steamer is unequalled by any other machine. There is no car, however expensive, which has better upholstery, better springs or better finish. Owing to the compactness of the mechanism, the body is much more commodious than in any car of similar wheelbase, (122 inches). Few other makes have such a liberal tire equipment (36x4 on the front wheels and 36x5 on the rear wheels.)

The luxury of any car, however, depends largely upon its riding qualities and here the White is "in a class by itself." It is the only car where starting and changes of speed can be effected without jerks or jolts. It is the only car which runs noiselessly under all conditions. It is the only car which is free from vibration, because it is the only car where the power is applied evenly and continuously, and not spasmodically.

Just as our Model "M," priced at $4,000, is the most desirable of the higher-priced cars, so our Model "O," at $2,000 predominates among moderate priced machines.

Write for descriptive matter.

THE WHITE COMPANY
CLEVELAND, OHIO

NEW YORK CITY, Broadway at 62d St.
BOSTON, 320 Newbury St.
PHILADELPHIA, 629-33 N. Broad St.
PITTSBURG, 138-48 Beatty St.
CLEVELAND, 407 Rockwell Ave.
CHICAGO, 240 Michigan Ave.
SAN FRANCISCO, Market St. at Van Ness Ave.
ATLANTA, 120-122 Marietta St.

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NEW YORK, DECEMBER 17, 1908.

The New York Show Numbers of the Motor World will bear dates of December 31st, January 7th, 14th, and 21st, respectively. The first two will interestingly and comprehensively forecast and describe the exhibition of American Motor Car Manufacturers Association, and the other two do similar duty for the show of the Licensed Association of Automobile Manufacturers. As usual, the Motor World's reports of both shows will deal with goods actually exhibited and will not comprise mere trade puffs or extracts from catalogs written weeks before the doors of the exhibition halls are opened.

The Multiple Jet Idea.

That peculiar compromise, the multiple jet carburetter, apears to have "come to stay," in common with all the more approved forms of mechanism now recognized as permanent features of the average car. Though still found to only a limited extent, its use is still adhered to by so many makers of good repute and of successful practice in other respects, that it seems bound to continue to hold the position it has assumed, if not to grow more popular as time goes on. That it is not more prevalent at the present time is evidence of how near the single jet arrangement can be brought to yielding the desired results. That that type never yet has been absolutely satisfactory, however, also is evidenced by the continual shifting about of designs by even the best established manufacturers.

The conditions so familiar and puzzling to the designer are these: that the carburetter must yield a uniform quality of gas at all times, regardless of any conditions affecting the motor; that in order to do so, its action must be unaffected by the position of the throttle, little if any affected by weather or temperature conditions, and unaffected by minute variations in the density or fluidity of the fuel.

Thus far, the conditions are relatively easy to fulfil. The difficulties of carburetter design hinge about the facts that the suctions of the various cylinders are intermittent, that the cylinders are located at different distances from the mixing chamber, and that the gas requirements vary with both the speed of the crank shaft and the load which is being carried.

Because the engine may be running fast under only a very slight load or no load at all, or very slow under no load or a very heavy load, it is very difficult to standardize the service conditions of the carburetter in such a way that the intermediate points may be met with proper regulation under all possible circumstances. For any single set of coincident requirements, absolutely satisfactory results may be obtained with the ordinary type of plain jet and venturi mixing tube. Outside a limited range on either side of that point, whatever it may be, the compensation now possible must be more or less of a compromise. On this account it is particularly difficult to obtain good results at very low engine speeds with the ordinary carburetter when working on nearly a closed throttle, and also on this account, the introduction of the secondary and auxiliary jet has been deemed expedient.

Tinkering with the Tariff.

It was not the tariff that so quickly built up the automobile industry to its present size in this country. It was the popular fascination of the automobile itself. But the tariff undoubtedly assisted and protected the establishment of American makers by shielding them from the competition of foreign manufacturers enjoying a very much lower cost of labor. Important as this protection has been in the past, it is even more vitally important now, because of the change in the European product to a greater similarity to the American types, resulting in a competition based less on engineering ability and commercial cleverness in discerning the desires of buyers than on beating down the scale of wages to the minimum.

In placing the tariff issue squarely on the basis of comparative wages at home and abroad, the automobile manufacturers have acted with wisdom. The comparison is an absolute and convincing answer to proposals for a reduction.

No complaint can be made of lack of competition among the domestic makers. Every benefit that competition can bring to the public is observable in the industry at the present time, with the one exception that the element of cheap European labor is partially held in check by the import duty. Adequately to meet the difference which this European labor presents in manufacturing cost, the duty should be raised considerably from its present figure of 45 per cent. But the domestic makers do not ask for such an increase, being willing that the tariff should remain as it is, with some corrections in the manner of classification.

The competition among the American manufacturers themselves is bringing the cost of motor cars down to the minimum under which they may be produced while paying the liberal American wage scale. Nothing could be further from the truth than that the automobile business in this country is in the hands of a trust or trusts. There are probably not more than two makers in the United States who have anything like a reciprocal agreement on production or prices, and who are not fighting their battle for existence absolutely alone and against the most lively kind of competition. To have to turn and face cheap European labor as well, is more than enough to occasion dismay.

If public welfare demands that the purchasers of automobiles be supplied with their machines at the low price commensurate with the scale of wages paid to labor in Europe, then it were a sad mistake to have given the domestic manufacturers the tariff encouragement to build their factories and train their men. The lowering of the price to the motor car user would not seem to be quite enough to compensate for reductions in domestic pay rolls and production.

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Popular impression to the contrary, notwithstanding, the profits of the automobile manufacturers as a whole have been exceedingly small, considering the hazards of the new business, the capital invested, and the energy and enterprise expended. In fact, if the total amount lost in experiments and "dead work" by American manufacturers, including the vast army who have failed and gone out of business, could be arrayed against all the true net profits, it is more than doubtful whether the latter would even equal the former.

While the automobile industry is already very large, yet when compared with other lines of vehicle manufacture it is small, and the possibilities of future expansion are enormous. It is still an "infant industry" in the sense of tariff discussion. If it is to be protected so that it may thrive and grow, there is occasion for rejoicing, but if it is to be exposed to the malady of pauper labor it might best die young. Fortunately, however, an inquiry into tariff conditions does not necessarily mean a reduction in the tariff.

Winter and the Motor Clubs.

In almost every automobile club there are fellows who through inclination or compulsion assume the arduous burden of stimulating the interest and keeping "something doing" with a view to making the organization a success and swelling the membership roll. Heretofore the winter months have loomed up with no more attractive possibilities than "smokers" or discussions on automobile legislation to draw the members together, but latterly there has appeared almost an embarrassment of riches in the things available for attractive winter programs. In fact, winter now seems to offer a season quite equal or superior to summer for the purpose of making an automobile club useful and entertaining to its members.

While comparatively a small proportion of the membership of the clubs can attend the big races like the Vanderbilt and the Grand Prize, when they actually occur, yet they can during the winter months arrange to see these affairs run over for their benefit in the comfort of their own club assembly rooms. The enterprising moving picture concerns have "canned" all the big automobile races, both here and abroad, and "canned" races, if properly served, are not half bad.

With a magic touch the spectator is transported from one place on the course to another, always just in time to see the most exciting incidents and the biggest accidents. Furthermore, after having seen the cars get away from the starting line and having been wafted around to the various points on the circuit where the best views could be obtained, he is returned to his position in front of the grandstand just in time to watch the finish. Had he actually attended the race in person, in all probability he would at that time have been compelled to remain at practically one point, and would have been "shooed" away from the line at the start and finish with a bayonet.

Two or more of the big races can be combined for the one evening. To fill the program to overflowing, the moving picture people themselves have devised automobile race films enacting a thrilling melodrama, which if not convincing is entertaining.

In almost the same class come the illustrated talks describing around-the-world trips, picturesque runs and the like. Some of these have been found much more interesting than they even promised to be. The presence of the car which figured in the adventure shown in the pictures in some cases adds to the effect.

There is a growing willingness on the part of manufacturers to lend good talkers who can hold an audience of motorists in their spell in explaining the construction and merits of particular features of design or construction. Also there are other subjects, like autogenous welding and similar wonders, which lend themselves to platform work and demonstrations. The commercial interests backing some of these things are very glad to have them exploited, and supply all the talent and accessories necessary to make an evening successful. Exhibitions of famous racing or touring trophies can sometimes be arranged, as minor attractions between times.

Where road building has received any attention from a club, there are possibilities in the illustrated expositions on highway construction methods, which experts from governmental sources are glad to give, since it presents an opportunity for them to interest the public in their work. In some instances the chief of police or the mayor may be invited to address the automobilists, and no matter how roundly he intends to score them, he is pretty sure to feel better disposed toward them than before he met them in the pleasant surroundings of the club.

The awarding of prizes for competitions that the club itself may have promoted, such as season mileage or repair cost contests, may properly be put off until some night during the winter, when the award will serve as a good reason for requiring the presence of the members. Local dealers now get their sample cars sufficiently early to exhibit them during the winter, and a series of club room shows, giving each dealer a chance to display and talk about his car, is possible.

Little complaint, therefore, can be made that the clubs having their foundation in motoring must look upon winter as a season for hibernating or for lessening activity. Whether a club be deadly serious or lightly frivolous in its general character and purpose, it can, under the newer order of things, find meat to its liking and on which it will thrive. All that is necessary is a bit of enterprise on the part of those whose duty it is to arrange for the "doings." The present tendency suggests the possibility that before long some shrewd enthusiast will organize a bureau or agency for supplying clubs with the best talent in the classes indicated, to make still easier the task of keeping up club interest in the winter.

COMING EVENTS

December 31-January 7, New York City—American Motor Car Manufacturers' Association's annual show in Grand Central Palace.

January 1, 1909, Los Angeles, Cal.—Automobile Dealers Association's 24 hours race, Ascot Park.

January 1-2—Quaker City Motor Club's two days endurance run, Philadelphia to Wilkes-Barre, Pa., and return.

January 16-23, New York City—Association of Licensed Automobile Manufacturers' annual show, Madison Square Garden.

January 21-31, Los Angeles, Cal.—Automobile Dealers Association's show.

January 27-February 3, Philadelphia, Pa.—Automobile Trade Association's eighth annual show, Second Regiment armory.

February 6-15. Chicago. Ill.—National Association of Automobile Manufacturers' Show, Coliseum and First Regiment Armory.

February 15, Detroit, Mich.—Detroit Automobile Dealers Association's show, Wayne Pavilion.

February 15-20, St. Louis, Mo.—Automobile Manufacturers and Dealers Association's annual show.

March 6-13, Boston, Mass.—Boston Automobile Dealers Association's (Inc.) seventh annual show, Mechanics Building.

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RELIABILITY IN A STRENUOUS TEST

Rough Roads and Severe Weather Mark the Worcester Run—Eight Apparently Perfect Scores Made.

As is usually the case with reliability contests in which a technical committee is called upon to decide the scores of the various contestants by a process of minute hair-splitting examination, the final decision regarding the winners of the Worcester Automobile Club's 210 miles run has been delayed. Up to yesterday (Wednesday) the number of actual perfect scores was not yet announced. Eight cars, however, survived the preliminary ordeal and the stresses of the contest itself.

Starting out on the morning of Saturday, the 12th, in a dreary, dull rainfall which turned into a snowstorm and threatened to become a blizzard, fourteen contestants began the contest at 6 a. m. When the competition finished in pitchy darkness that night, the eight successful drivers reported that their scores were to external appearances, perfect. This, of course, did not necessarily mean that all of these would be adjudged absolutely free from penalties at the technical examination. In fact, the chances were that in most cases, the cars which had been put through such a hard, straining test, would have their scores materially chipped. Not only did the technical committee have to investigate the condition of the motors and mechanism, but also to measure various parts of the external portion of the cars, to ascertain if they were at all out of alignment. Various relative distances between wheels, springs and frame were taken and had to be compared with the same set of measurements made in an examination made previous to the start of the run. The contest, to be sure, was a most exacting one, and before many weeks, the exact results will be made known.

The octette who pulled through the entire distance without repairs or adjustments calling for obvious penalizations, were the following:

Ray McNamara, Premier; A. M. Lloyd, American; H. M. Cobe, Lozier; C. S. Carris, Franklin; B. E. Robinson, Rambler; H. E. Wilson, Lozier; A. E. Dennison, Knox; H. J. Murch, Cadillac.

The others, who either dropped out, or were fined to a greater or lesser degree, were:

E. B. Belcher, Berkshire; J. Oswald, Studebaker; George Stowe, White; William Bourque, Knox; E. P. Blake, Jackson; E. W. Williams, Rambler.

The contest was held over five different routes of approximately 42 miles each, beginning and ending at Worcester. Thus as the entire contest radiated from Worcester, local persons who were interested in the affair were enabled to get the returns and news of the run at the close of each lap. The five courses were laid out so as to include the worst roads around Worcester and the contest committee made all arrangements possible to make the run a strenuous one. As a whole, the cars performed remarkably well and the drivers did good work and clever driving, the breakdowns and penalizations that occurred being due to the snow and slippery road conditions, rather than to mechanical defects in the cars.

Of the six who met with trouble on the run, William Bourque, driving the Vanderbilt Cup Knox car, was the first to withdraw. On the second lap, while trying to avoid the American Gadabout which was skidding down hill on slippery pavement, Bourque ran his mount into a ditch, smashing a mudguard and stalling his motor. On the next round, his hoo-doo continued to follow him and after breaking his valve gear, he withdrew.

E. P. Blake, at the wheel of a Jackson, was the next to come to grief. He was passing Holden, on his way to Princeton, when on a turn in an ice-covered stretch, his car began to slew "around, around, around." After making three complete revolutions, it crashed into a woodpile and upset, throwing the passengers out into the snow. None was hurt to any extent, but a broken axle ended the car's usefulness. At Quinapoxet, E. W. Williams had the misfortune to go out with rear axle trouble, and at North Brookfield, George Stowe, driving the White entry, the only steamer in the contest, broke a piston rod and began to slide down hill backwards. Several other drivers had to scurry out of the car's way to avoid being hit.

One of the hard luck stories of the day was that of J. Oswald, the Studebaker pilot, who suffered a penalization because his gasolene supply gave out and made him late at a control. The Berkshire car was another to meet with trouble on one of the hills. When it failed to get sufficient traction to carry it to the summit of one of the steep grades on the last run, its passengers got out and pushed and this spoiled the car's otherwise perfect score.

Among those who were more fortunate in not meeting with breakdowns on the road, were some of the veteran drivers. Ray McNamara, who was the "pathfinder" of the Glidden tour, carried the Premier through in good shape; C. S. Carris, who has piloted the Franklin to victory in so many competitions, sent the little air-cooled car over the ground to the queen's taste, while Al. Dennison, in the second Knox entry, had better luck than his team-mate, Bourque. Harry M. Cobe, who has distinguished himself in 24 hours races, came very near getting arrested when he started out to beat the rest of the field to the controls. He drove as though he were in a race and only let up in his grandstand play when warned by the Worcester chief of police to stop. Wilson, who handled the second Lozier, was another among the leaders. A. M. Lloyd, in the American "Gadabout"—that car with the new name, and Birney Robinson, in the Rambler, pulled through without difficulty, while Harry Muren, in the little Cadillac, kept up with the high-priced cars, as far as



VIEW IN REAR OF CITY HALL, WORCESTER



STARTING FROM THE WORCESTER COMMON

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H. J. MURCH, CADILLAC

while Harry Murch, in the little Cadillac, kept up with the high priced cars, as far as good going was concerned.

Some of the drivers lost their way shortly after the start, which was made in the dark at 6 a. m. They had climbed Dead Horse hill without any trouble and had passed through Spencer, when several failed to follow the confetti and took the beaten path toward Oakham. These went three or four miles out of their way before they discovered the mistake. All managed to make up time, however, and reached the 8 o'clock control at Worcester on schedule time.

The second flyer of the contest went over a route through Holden to Hubbardston and back, and the third, or last run of the forenoon, was through Princeton, Sterling and Boylston, a distance of 37½ miles, with 1 hour 45 minutes allotted to cover it. A rest of an hour was given at noon for luncheon and the contestants then set out through Trowbridgeville, Oxford, Webster, Douglas, Wilkinsonville and Millbury. This was the hardest trip of the day and for a while it was feared that the cars would not reach the control on time, but most of them succeeded in doing so. The last lap was the longest of any, 46½ miles. It took the cars out through Paxton, Coldbrook Springs, Oakham and back via North Brookfield, Spencer and Leicester, 1 hour and 15 minutes being the time allowed. By this time several of the drivers were commencing to feel the effects of the extreme cold and were glad when the contest was over that they might get a chance to thaw out.

It was originally intended that the technical examination should be made immediately after the cars checked in for the last time, but it was deemed advisable at the last minute, to wait until daylight. Upon the unanimous consent of all contestants, the clutch, brake and transmission tests, which were to have been made at the close, were eliminated. Distinguished talent was arrayed for the examination of the cars in Charles M. Allen, D. L. Gallup, and J. C. Harvey—all from the Worcester Polytechnic Institute.



C. S. CARRIS, FRANKLIN



B. E. ROBINSON, RAMBLER

Chattanooga Man Agitating for a Race.

Having heard such glowing tales of the success of the Grand Prize race at Savannah, Randolph M. Rose, a citizen of Chattanooga, Tenn., is highly enthusiastic about holding an automobile race in his own city and expects to promote one. He is confident that a much better course can be built around Chattanooga and believes that a big road contest can be gotten up that will equal, if not eclipse Savannah in importance. While a race of these dimensions would be quite an undertaking, there are numerous citizens of Chattanooga who join Rose in his enthusiasm.

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TAME CIRCUS AT TANFORAN PARK

Seyfried Makes Oldfield-Christie-Soules Troupe "Look Like Thirty Cents"—But Barney Wins Sweepstakes.

A crowd estimated at 10,000 persons swarmed to Tanforan Park, San Francisco, Cal., on Sunday, 6th inst., to see an automobile race meet in which sensations and thrills were expected in abundance and was compelled to witness one of the tamest, milk-and-water style of automobile meets ever held in the country. The affair was held under the auspices of the Automobile Dealers Association and proved to be a futile attempt composed chiefly of circus acts and "exhibition" events, the element of competition lacking throughout. There were few entries to begin with and for this reason, half of the proposed program was omitted. Of the crowds that packed the grandstand and paddock at the start, fully half went away early, disgusted with the meet and the management.

Apparently the trackfest was held for the benefit of that trio, Oldfield, Christie and Soules, whose performances were to constitute the features of the day. When E. A. Moross, manager of this outfit went to San Francisco some days before the race to arrange his entries, he wanted to have a sweepstakes event gotten up for a $2,000 purse and have the event open only to the hippodrome company mentioned above. This would guarantee good sport, he assured the promoters, for there would be the keenest competition between Oldfield, Christie and Soules to gain that $2,000. No outside entries would be needed to make the race a crackerjack. But some of the local dealers could not see things this way. Some of them had doubtless been studying the adventures of the "Noble Three" during the past few weeks, and the San Franciscans who have a few speedy cars of their own, refused to let Moross have his way. After a couple of dealers who desired to enter cars in this event told the "Noble Three" that they were circus performers, Oldfield agreed to let C. A. Hawkins enter a White steamer, and Frank Free a Comet.

While it was the misfortune of the White entry to catch fire in the sweepstakes, Oldfield may have wished that the car had burned up altogether, for it caused him to "sing small," when, with Gus Seyfried at the wheel, it covered a mile in 59 seconds flat, while the best that Oldfield could do was 1:03. Seyfried's time was the fastest ever made on that track, and beat the former record of Oldfield considerably.

The opening event, scheduled as a five miles contest for cars costing $2,000 and under, saw only one starter, a White steamer. The second event, for the $4,000 class, was also a case of "all White"; two cars of that make being entered, and a single Buick the only other competitor. Don Whalley drove the winning steamer 3 miles in 3:24, while Seyfried in the other White was second.

Then came four not over exciting exhibition events, during which Seyfried made his 0:59 mark. The best Free and Soules could do was 1:05, and the annoyed Oldfield, 1:03, as before stated. The Christie car, with G. H. Hughes at the wheel, cracked a cylinder and could make no showing in the contest.

In the sweepstakes, Oldfield hesitated about meeting Seyfried in a preliminary heat, so he made Moross stack him and his six-cylinder car up against Free in the little Comet, and, of course, Oldfield took the heat. When Soules and Seyfried went at their trial, Seyfried's pilot light went wrong and flames caused him to drop out. That left the final 5 miles heat to Soules and Oldfield, with the usual result. Soules, as a matter of course, let the star win by a good safe margin in 5:21.

What promised to be a good brush between J. Seeley in a Peerless and a Packard car, fell flat, when the latter withdrew in the third mile. The only semblance of excitement was furnished in the final 5 miles handicap. Moross was the handicapper and some of the contestants did not like his system, Hawkins withdrawing his White and claiming that he did not receive a fair start. Two Comets, driven respectively by Earl Cooper (45 sec.) and Frank Free (10 sec.); Frank Murray in a Buick (60 sec.), and a Stearns, fought the race out, Cooper winning in 6:20, with Free second. Then what was left of the crowd trailed homeward, sighing for the days of old when horses used to gallop around that dusty track, in real contests.

The summaries:

Three miles, stock cars costing $4,000 or less (stripped)—Won by Don Whalley, White steamer; second, Gus Seyfried, White; third, Frank Murray. Time, 3:24.

Exhibition mile by Frank Free, Comet Time, 1:05.

Exhibition mile by Charles Soules, Stearns. Time, 1:05.

Exhibition mile by Gus Seyfried, White Flyer. Time, 0:59.

Exhibition mile by Barney Oldfield, 6 cylinder Stearns. Time, 1:03.

"Sweepstakes" event—First heat, 3 miles, won by Oldfield; second, Frank Free, Comet. Time, 3:05⅘.

Second heat, 5 miles—Won by Charles Soules; Seyfried, White Flyer, did not finish. Time, 5:26.

Final heat, 5 miles—Won by Oldfield; second, Soules. Time, 5:21.

Three miles, fully equipped touring cars—Won by G. H. Seeley, Peerless. George Hoff, Packard, did not finish.

Five miles, free-for-all handicap—Won by E. P. Cooper, Comet (45 sec.); second, Frank Free, Comet (10 sec.); third, Frank Murphy (60 sec.); fourth, Charles Soules (scratch). Time, 6:20.

MAY BOYCOTT THE GRAND PRIX

Reported Agreement of Prominent Foreign Makers Not to Enter the Contest—Surmises Concerning the Reason.

Though the Paris Salon is proving practically barren of sensations in the mechanical sense, it has brought forth one announcement which is sufficient in itself to cause the promoters and patrons of the great foreign racing events to catch their breaths in dismay. Directly after the opening of the Salon it was announced that no less than eleven manufacturers of prominence had signed an agreement boycotting the Grand Prix race of 1909. Of these, seven are French, two German and two Italian. While no cause has as yet been assigned for this alleged action, it is suggested that with the restrictions already decided upon for the forthcoming contest, that is to say, a reduction of the bore limit to 130 millimeters, the feeling is that the results of entering would not justify the expense, or, in other words, that without the possibility of using huge engines, the foreign builders hesitate about trying their strength in a competition with the manufacturers of the world at large, the results of which would be so universally studied.

The names connected with the announcement were those of the Panhard, Renault, Peugeot, Lorraine-De Dietrich, Bayard-Clement, Brasier and Darracq makers of France; Mercedes and Benz, of Germany; and Itala and Fiat, of Italy. While in some quarters it was stated that all of these firms had agreed to withhold their support of the 1909 Grand Prix, it was affirmed elsewhere that only five of the above named had actually signed the agreement. Furthermore, as some of those connected with the firms in question were active in framing the new racing rules, and as the typical European fickleness has before given rise to such announcements as that some of these firms were not going to exhibit at the Salon, which afterward were ignored completely, the seriousness of the situation is regarded as being somewhat tempered. It is, however, another instance of the wavering condition of the European industry at the present time.

New Year's Run for Ford Owners.

Following the custom of two previous winters, the Chicago branch of the Ford company will hold a New Year's Day run over the Chicago-Elgin-Aurora course. While this run has been for Ford owners exclusively in the past, this year members of the Chicago Automobile Club will be invited to join in the outing regardless of what make of cars they drive. At 10 p. m. on December 31, a dinner of the entrants will take place at the C. A. C. club house and promptly on the stroke of twelve, the motors will be cranked and the cars will start westward on their first run for the year 1909.

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BEAUDETTE BAGS MOST HONORS

He Makes Fastest Time at Los Angeles Hill Climb and Captures Three Events—Dingley Twice a Winner.

Preceding a cloud of angry steam, T. J. Beaudette mounted in a Stanley car, shot up the mile course with its 18 per cent. grade at Riverside, Cal., on Saturday, 5th inst., and made the fastest time at the annual hill climb of the Los Angeles Automobile Dealers Association. He covered the distance in 1:12, which was better than any of the gasolene machines could do, Bert Dingley being the nearest competitor with a Chalmers-Detroit in 1:20. Everybody expected Beaudette, who had the only steam car, to win and the real contest was between the other drivers. Owing to a scarcity of entries, and particularly those of high-powered cars, a considerable portion of the program was omitted. This was due largely to the fact that the contest was postponed from Thanksgiving Day, the originally scheduled date and interest in the event was somewhat lacking. Two thousand or more spectators turned out to watch the sport and had an opportunity to see one or two thrills at the turn about the middle of the course alarmingly known as "Death Dip."

In the gasolene class, Bert Dingley, with the Chalmers-Detroit, and Frank Siefert at the wheel of a Stoddard-Dayton, were the favorites, and the interest of the spectators centered chiefly in this pair. When they got ready to fight things out in the $2,000-$3,000 class, Siefert tore up the hill at a hot pace and when the timers announced 1:22⅗, which was better than the earlier performance of the steamer, the Stoddard-Dayton rooters went wild with joy. This exuberance of spirits, however, was short-lived, for Dingley got his motor firing and plunged up the elevation to the tune of 1:20⅕, taking a long, dangerous chance in not throttling down ot the turn. Then the crowd applauded Dingley. In this event, C. A. Cowan was third with his Rambler in 1:38.

Dingley and Siefert went at it again in the free-for-all roadster event, Dingley winning for the second time in 1:20⅗, slightly slower than his first trial. Siefert got second place in 1:22⅖, one-fifth of a second better than his first attempt. Cowan got third place, with L. B. Harvey fourth.

Of the lighter gasolene cars, the best showing was made by George Kussman with a 22 horsepower Tourist in the $1,500 and $2,000 events, both of which were won by Beaudette with his steamer. In the former, Kussman's time was 1:48⅗ against the steamer's 1:24⅕, and in the latter the Tourist covered the distance in 1:42⅖, as opposed to Burdette's 1:12—the fastest of the day. L. B. Harvey was third in this with a Rambler in 1:50.

William Foberth captured the $2,500-$3,000 touring car event, in which each contestant had to carry a load of five passengers. He made the ascent in the good time of 1:25, Beaudette's Stanley steamer breaking down and failing to finish. The latter, however, made off with the event confined to the fastest cars in each of the other events, Siefert scoring second with the Stoddard-Dayton, and Dingley third, with the Chalmers.

The summaries:

Touring cars, $1,000 to $1,500, four passengers—Won by T. F. Beaudette, Stanley steamer; time 1:24⅕; second, George Kussman, Tourist, 1:48⅗.

Roadsters, $1,000 to $2,000, two passengers—Won by T. F. Beaudette, Stanley steamer, 1:12; second, Kussman, Tourist, 1:42⅖; third, L. B. Harvey, Rambler, 1:22⅗.

Roadsters, $2,000 to $3,000—Won by Bert Dingley, Chalmers-Detroit, 1:20⅕; second, Frank Siefert, Stoddard-Dayton, 1:22⅗; third, C. A. Cowan, Rambler, 1:38.

Roadsters, free-for-all—Won by Dingley, 1:20⅗; second, Siefert, 1:22⅖; third, Cowan, Rambler, 1:33; fourth Harvey, Rambler, 1:46⅖.

One mile exhibition, by T. F. Beaudette, Stanley steamer. Time, 1:18⅖.

Touring cars, $2,500 to $3,000, five passengers—Won by William Foberth, 1:25.

Special event for fastest cars in preceding events—Won by Beaudette, 1:18; second, Siefert, 1:22⅖; third, Dingley, 1:24⅕.

Los Angeles Cards a 24 Hours Race.

Following the consummation of the deal to turn Ascot Park, Los Angeles, Cal., into a motor racing track exclusively, comes the announcement that provided the course can be put into proper condition by the latter part of this month, a 24 hours race will be the opening event of the new autodrome, starting New Year's eve. The contest will be held under the auspices of the Automobile Dealers Association, the organization that expects to have direct charge of all future speed contests at this course. It is planned to make a cement track of the old horse track ultimately, but for the New Year's Day affair, merely the turns at each end will be banked with concrete to permit high speed.

Providence Talks of a Motordrome.

Plans are under way to build another cement motordrome. Narragansett Park, Providence, R. I., will shortly be transformed from a horse track, into a banked course for the exclusive use of automobiles, if the arrangements of the corporation which now owns the track do not fall through. Frederick E. Perkins, president, and Albert H. Moore, secretary, want to spend $50,000 on the venture and bank the turns to a height of 25 feet, believing that if such a course could be made safe for speed contests, the enterprise would prove a paying one. The fact that horse racing is practically barred in Rhode Island by law, has led the park owners to favor the idea.

PRESENTATION OF THE GRAND PRIZE

The Golden Trophy Formally Handed Over and Accepted—Mayor Tiedeman, of Savannah, Assists in Ceremonies.

More than two hundred members and guests of the Automobile Club of America waited patiently for several hours on Tuesday evening last, for the arrival of Judge E. H. Gary, president of the club, who was to present the grand prize to the representative of the Fiat Automobile Co., whose car, driven by Louis Wagner, won the Grand Prize race at Savannah on Thanksgiving Day. But the Judge failed to appear and Robert Lee Morrell, chairman of the contest committee did the honors. In beginning his presentation speech, Mr. Morrell was modest and did not want to mount the platform, but the guests insisted upon it, that they might get a good view of him, and after making a few remarks about the race, praising the people of Savannah and those connected with the southern club who helped make the affair a grand success and likewise praising E. R. Hollander, of the Fiat Company, the speaker presented the trophy. Mr. Hollander, who accepted it in behalf of the company he represented, expressed his thanks amid loud applause.

Among the guests were Mayor Tiedeman, of Savannah; Frank C. Battey, president of the Savannah Automobile Club; Harvey Granger, W. B. Stillwell and William Lattimore, who made the trip from Georgia especially for the occasion, all of whom made addresses. Stereopticon views and moving pictures of the race were shown.

Planning a New York to Seattle Race.

Officials of the Alaska-Yukon-Pacific exposition, to be held at Seattle, Wash., next year, have commenced to agitate a transcontinental race for next summer. Application has been made to Robert Guggenheim, of New York, to use his efforts as a director of the Automobile Club of America, to stir interest in a race from New York to Seattle. Guggenheim, who was interested in the Elkwood Park meet July 4th last, is said to have expressed his willingness to comply with the request, and has announced that he will enter an American car should such a contest materialize. He has even gone as far as to say that the race will be promoted by Thomas Francis Moore,—who disclaims all knowledge of it—and that Wm. K. Vanderbilt, Jr., will act as official starter.

Motoring Grows Popular in Monterey.

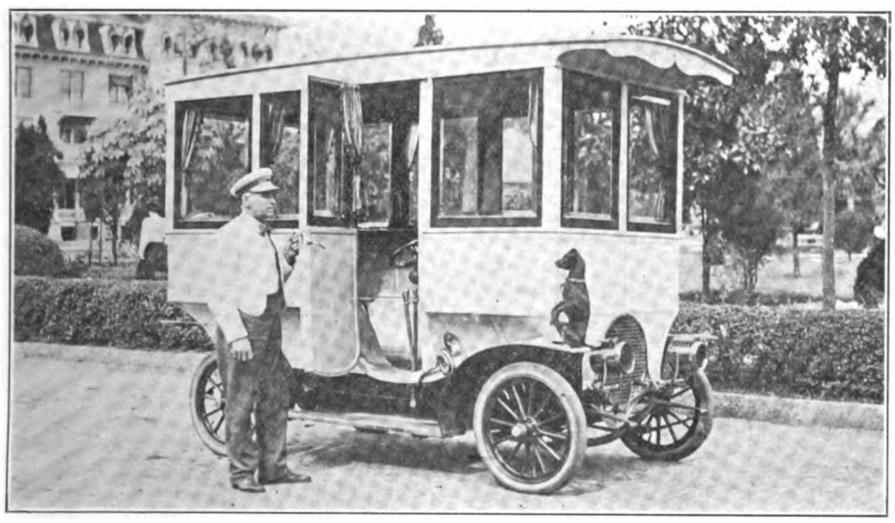
With gasolene selling at $4.20 for a five-gallon can in their city, the residents of Monterey, Mexico, would hardly be expected to be enthusiastic in taking up motoring, but despite this drawback the number of owners is constantly increasing.

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HIS CAR A HOME AND WORKSHOP

Razor Man Lives, Toils and Travels on "The Sharp Edge"—That is What He Calls His Novel Vehicle.

Combination three-in-one folding bed, bath-tub and piano contraptions have been placed on the market by house furnishing manufacturers occasionally during the last decade, but one of the most interesting "combination" outfits ever built is that of N. H. La Grand, of Jacksonville, Fla., who has a modern adaptation of the house car principle that is about equivalent to a residence and office building on wheels. Working on the theory that it is "cheaper to move than pay rent," La Grand has made of his car a place of business and temporary abode, and he explains that within a few seconds he can change it successively into a working car, a dining car, a sleeping and a touring car.



RAZOR MAN AND HIS HOME, "THE SHARP EDGE"

Taking a Franklin chassis, La Grand built upon it a car body suited to his purposes, doing the work himself and spending upon it half of his time each day for 15 months. Completed, the vehicle weighs only 2,300 pounds, and the cost has been $3,664.98. A general idea of the car's appearance is given by the accompanying illustration, showing the man and his novel home.

In constructing this vehicle, La Grand did not confine himself to conventional design in the least. As will be noticed, the body is made to run the full length of the chassis, while it also overhangs to the full width of the tread. It carries large convenient lockers and a refrigerator and the interior decoration with its maple and mahogany finish has something of the effect of a Pullman sleeper. The windows are of beveled plate glass, the curtains of green silk. It is fitted with electric lights throughout and is a most up-to-date piece of craftsmanship. The designer, who is in the razor business, calls his car "The Sharp Edge," which he thinks is a most appropriate title.

Motor Car Delivery for Detroit Suburbs.

Two Wyandotte (Mich.) men have embarked upon an enterprise to run a suburban motor car service between Detroit and towns as for north as Trenton, the idea being to cater to the trade of merchants along the line. When the plan gets into smooth running order, it is the intention of the promoters to have three fast motor car deliveries daily, carrying goods from the concern's depot in Detroit direct to the door of retail business men. The advantageous feature of the line will be that dealers in the various towns can get rush orders delivered with great promptness, by telephoning for same to Detroit. One car has already been ordered and the company will probably start the business in operation about January 1.

Automobile Doubles Stage Line Traffic.

In view of the fact that Rhodes Bros., of Paoli, Ky., believe an automobile can do twice the work of several horses, they have made application to the authorities to change the schedule of their stage line betwen Paoli and New Albany,, Ky., so that a round trip can be made daily between the two places, instead of the present single trip. They intend to discontinue the use of horses and instal a motor car and also to establish another motor line between New Albany and Corydon, a distance of 20 miles, making two trips a day.

Taxi Service Profitable in Boston.

The Taxi Service Co., of Boston, Mass., is so pleased with the prospects of the taximeter cab business in the Hub that it has increased its capitalization. The increase is from $120,000 to $350,000, and precedes the issuance of $40,000 additional common stock and $190,000 preferred.

ANOTHER CLAIM TO PIONEERSHIP

Boston Bobs up with Elijah Ware's Steam Automobile, Produced in 1861—Its Construction and Achievements.

One more has been added to the already large family of those who claim to be the original inventors of the motor car. Inventors of this sort are about as numerous as the many surviving members of the "original Florodora sextette." It has just been recalled that Elijah Ware, of Boston, Mass., a well known railroad construction engineer in his time, invented a steam automobile as early as 1861 and ran it on the streets of Boston.

According to persons who recall it, the car ran remarkably well for such an early attempt and the fact that at one time Elijah used to race his invention against race horses on the old plank road near Bayonne, N. J., where he lived for a while, is evidence that he must have been able to cover some little distance at creditable speed. It was while he was in charge of the temporary repair shop for steam shovels in Boston, during the filling-in of the Back Bay, that Ware decided he wanted a horseless carriage and constructed a clumsy four-wheeled affair, with a vertical boiler and oscillating engine of small horsepower. The car was steered with a wheel and steering post, and the ordinary carriage shoes acting on the solid tires answered the purpose of brakes. The car ultimately was sold for $300 to a clergyman who lived in Prince Edward Island, who is said to have become quite an automobile enthusiast.

Schools for Military Motor Car Drivers.

Schools for motor car drivers recently have been organized by the Spanish military authorities in connection with several regiments, with the object of developing a corps of skilled operators who are members of the military. The schools are said to be well equipped in the way of machine tools and other facilities necessary to the performance of extended repairs and are conducted under the auspices of the Central Electrical School. A corps of motor volunteers also has been organized by the Spanish Royal Automobile Club.

Newark Club Planning a Metallic Garage.

The New Jersey Automobile and Motor Club is considering the plan of building a metal garage in Newark, N. J., in place of the half-completed frame one, upon which work was stopped recently. The original scheme of constructing a wooden garage was carried forward enthusiastically until the Bureau of Combustibles and Fire Risks announced that it would not permit the storage of automobiles in such a building in a congested part of the city. That put a stop to the proceedings.

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PROBLEMS OF AUTOMOBILE REPAIR

How They Trouble the Carriage Maker Who Undertakes the Work—One of Them Specifies the Difficulties.

That it is practically impossible to forecast the amount of expenditure which will incident to the upkeep of a commercial car, that it cannot even be run along strictly "business lines," is the deduction which an exponent of the carriage trade makes on the basis of current practice. That these unhappy conditions are likely to be ameliorated in process of time, he does not acknowledge in his treatment of the problem of motor car repairing as presented to the carriage builder. Another of the drawbacks of the automobile business in its present stages which he touches upon with some little melancholy is the commission evil. In this connection, he points out that the "regular 'auto' repairers allow this amount (5 to 10 per cent.)" by adding it to the owner's bill, and so long as the owners are willing to stand for the imposition, he fails to see why the carriage men should hesitate to fall in line. Discussing the matter further, he says:

"Since the advent of the automobile for pleasure driving and business purposes, also since the introduction of the commercial truck into the every-day business sphere for transportation, many very unsatisfactory features have been connected with the various repairs of cars and trucks. The diversity of the work and the different problems which present themselves almost on every job to be repaired has been one of the most difficult problems to solve in the repair departments of the various carriage and wagon shops.

"That they cannot be run on strictly business lines, and that their real cost of repair cannot be calculated in advance, as is done with other well tried work, is an insurmountable drawback to the carriage and wagon builders and their customers. In the first place the automobile user will not and cannot wait as long as demanded by the repairer. On the other hand, the carriage and wagon builders having been connected with new work and its repair, and their long association with this business where the carriage or wagon is left in the shop as a matter of course as long as needed, for a thorough repair, has malfitted them for automobile work which must be done quickly, and for which the regular automobile repairer is better fitted to do such work, because he is taking advantage of minor details, which saves time and money, and which the carriage and wagon builder has not yet acquired.

"Beyond question the repair of horseless carriages and truck work, also the repair of the machines, is of the most importance to the carriage and wagon builders. It is a real question of merit to pay considerable attention to this part of the business as a source of revenue. It is of a profitable nature, and when operated and managed on business principles in connection with the wants and the necessary condition of the present times, repairing the horseless carriages, wagons and trucks as an adjunct to the other departments, if managed properly, is profitable. The other question, "how much is in it?" for the chauffeur when running up to the carriage repair shop can be best solved by adding a certain percentage to the repair item, which, of course, the owner must pay as long as he allows his chauffeur to exact a certain percentage on the cost of repair to go in his pocket. This one question has been a source of dissatisfaction, and many carriage and wagon builders will not stoop to such practices, and have lost a great deal of repair work which would have been theirs had they allowed 5 or 10 per cent. of its cost to the chauffeur to keep in good relation with him. The regular automobile repairers allow this amount, and as they do the work in almost half the time that the carriage and wagon builders require, the excuse is the short time it can be done, is one of the best possible reasons why the repairers are doing the work, and all are busy, while the carriage and wagon builders are waiting for something else to turn up in their shops since the introduction of the horseless vehicles.

"The repairers, who are generally agents of several automobile manufacturers, of course take considerable pains to hold the patronage of all automobile owners who come along, or who have their machines stored at their garages. It is a matter of business on the part of the repairer and garage owner who has one or several good machines which he handles, sells and repairs, to keep in close touch with the owners. By this means the owners of the automobile, being one of the ones he sells, and with which the mechanics in the repair shops are thoroughly familiar, are well fitted for the repair of the machines, which puts the carriage and wagon builders greatly to a disadvantage unles they hire a competent mechanic to do this work; but the carriage and wagon builders again have the advantage over the repairer by doing the repair body work, painting and trimming far more thoroughly and of a far more satisfactory nature than the repairer can. He has not the facilities nor, generally speaking, the experienced mechanics, which the carriage and wagon builders have and need to do the new work.

"The result of this is, if the repair work is handled with sufficient tact and business enterprise, all these shortcomings above related to can be bridged over satisfactorily. The repair work in automobile bodies has been extensive and of almost infinite variety. The bodies have been lengthened, cut in half, and another seat added, replaced with any variety of tops with which the carriage mechanic is thoroughly familiar."

AUTOMOBILES SAVE FOR FARMERS

Colorado Agriculturist Shows by Figures Their Economical Value—More Efficient and Cheaper than Horses.

What economy results from keeping an automobile instead of a team of horses on a country estate is given in a demonstration by figures prepared by T. H. Proske, whose home is near Denver, Col. Some time ago he decided that as a substitute for the family carriage, used chiefly between farm and city, he would thoroughly test the motor car. The test he made a matter of bookkeeping. Buying his automobile, he made a record of its upkeep for about 18 months. This record, with the original cost of the vehicle, is as follows:

One set of tires	$130.00
Less credit for old one taken in exchange	35.00
	$95.00
One overhauling and varnishing	35.00
Average cost of gasoline, oil and batteries per month, $12—18 months	216.00
Original cost of motor car	3,040.00
Total	$3,386.00

This is based on a daily average travel of 35 miles, running with his 28 horsepower Franklin. Later he decided to buy a 42 horsepower machine of the same make. He finally sold the original car at the end of the 18 months for $2,250, thus bringing the net cost down to $1,136, or a little more than 5 cents for every mile traveled.

Satisfied that the original cost of horses and carriages to do the same amount of travel would exceed the original cost of the automobile, Proske figures the upkeep for horses and coachman as follows:

Feed for two horses, per month $35—18 months	$630.00
Coachman, boarding himself, per months, $75—18 months	1,350.00
Total	$1,980.00

"This," he remarks, "is not making any allowance for repairs to carriages or depreciation or possible death of horses. It will be seen from this that even if there was no sickness or death of horses and no depreciation in equipment I am still $844 ahead on the deal." This result is reached by deducting from the $1,980, which maintenance of a carriage would cost, the $1,136 which the automobile actually cost for 18 months. Incidentally the second experiment developed the fact that the upkeep cost of the second and larger car exceeded that of the first by not more than 10 per cent.

Another Ajax Girl Appears.

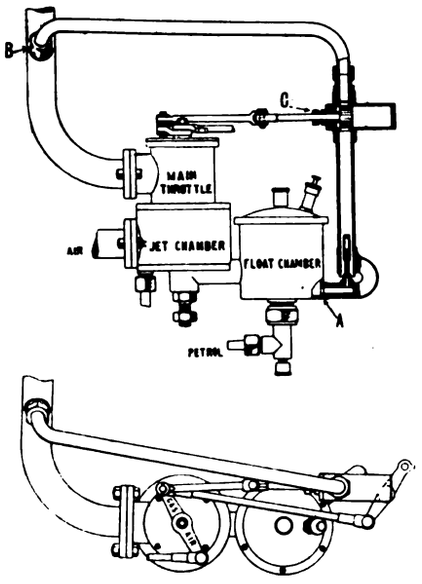
Another "Ajax" girl has made her debut, quite as beautiful as her predecessors. She is fathered by the Ajax-Grieb Rubber Co., of New York, and is a herald of the 1909 season for Ajax tires.

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NEW DEPARTURE IN CARBURETTERS

"Pilotjet" Affords the Advantages of Multiple Jet Type—The Device Attachable to Any Existing Design.

So much difficulty has been found in securing a method of carburetter regulation which shall permit of equally good results regardless of whether the motor is running slow or fast under load, or slow or fast without load, that many designers have had recourse to the simple expedient of duplication, so to speak, or in other words, to the adoption of the multiple jet type of carburetter, in which the several distinct-



ive conditions of service are catered to independently. So great have been the benefits derived in this way that a firm of British manufacturers, Messrs. W. H. Bailey & Co., Ltd., Albion Works, Salford, have devised a system for modifying the ordinary type of single jet carburetter by the addition of a secondary jet and mixer system which under suitable throttle control may be brought into action to supplement the work of the main jet at times when its natural characteristics fail to yield the desired service to the motor.

As will be noted from the accompanying plan and elevation outlines of the device, it is simple, readily attached, and in no way different in principle from the ordinary simple types of single jet carburetter. The arrangement is known as the "Pilotjet," and may be fitted to many present types of carburetter by simply tapping the intake manifold for one connection and the float chamber for another, the mechanism of control being even more readily attached. The resulting contrivance is a complete dual carburetter with the smaller of the two jets intended to serve only for slow and light load running.

In the accompanying illustration it is shown attached to a carburetter of the Longuemere type. The connection made at A, with the float chamber, serves as the fuel supply to a small jet located at the base of a small, straight, mixing tube, with a fixed air inlet. This tube leads directly to the main intake manifold connection, at B, and obviously serves to by-pass that leader when the main throttle is closed. When running under full throttle opening, however, the by-pass arrangement is cut out to afford the benefit of full suction to the main jet. To permit this, and also to allow for uniform gradations of speed and power from the idle-running to the full load, full speed, conditions, a piston throttle, C, is provided in the by-pass tube itself, and is interconnected with the main system of throttle control by the simple leverage and linkage shown. Additional permanent regulation also is permitted the auxiliary throttle so that when the main throttle is closed, it will stand at a point which will just permit the engine to turn over smoothly without gagging or missing explosions.

The design of the arrangement has been so carefully carried out that it is claimed the engine may be jumped directly from the slow, idle condition to full speed without staggering or missing, while the ordinary conditions of road running are in no way affected by the additional mechanism. The most commendable feature of the system, it would appear, is that it is available to the owner of a car equipped with a faulty carburetter, who does not care to go to the expense and risk of trying various new carburetters supposed to remedy the difficulties and who yet is desirous of bettering the ordinary performance of the motor.

Long Road Trip to Test Tires.

In order to make various tire tests on a long road trip, which would not be possible in or about a factory, and equipped with instruments for studying the temperatures created in tires at various speeds ranging from 25 to 60 miles per hour, as well as other technical points, Joseph M. Gilbert and James Patterson of the Continental Caoutchouc Co., started on a trip from New York City to Buffalo and return, on Saturday, December 12, in a specially equipped car fitted with their tires.

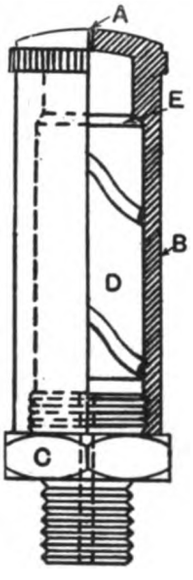
In addition to heat data, an effort will be made to ascertain the expansion of tires under service over a route of 1,000 miles, and also to determine the amount of air lost from tires through road contact. It is a well known fact that while a tire may look all right to the eye under certain circumstances, it may be shy some 25 pounds of air pressure, owing to the loss of vitality of the air. The trip will doubtless afford ample opportunity for the study of technical weaknesses of tires by the investigators.

That the 1909 Franklin engine is capable of delivering at the rear wheels 93 per cent. of its developed power, is claimed by its makers. This has been demonstrated by a series of tests made at the Syracuse factory.

JET WITH A ROTARY PLUNGER

Peculiar Adaptation of the Whirling Spray Idea to the Atomization of Fuel—Construction of the Appliance.

Unlimited schemes have been advanced for the improvement of the ordinary type of carburetter, as well as for the development of types depending on principles which are wholly or partially new. In this connection, no little stress has been laid on the performance of the common form of plain jet, which, it is fully admitted, does not always yield the direct and readily responsive



flow which is required. Another failing of the plain jet is that if large enough to furnish a full delivery to the motor when full load and speed conditions obtain, it tends when subjected to conditions of lower speed and lighter load, to yield a spasmodic or "lumpy" flow of fuel. To remedy this, a recent British invention has been introduced which follows the analogy of the mixing wheel or vaporizer which has been applied more than once to mixing chamber construction.

The detailed construction of the device is made plain by the picture in which A-C represents the body portion of the jet; E, a recess in its upper portion, and D, the rotry plunger, which, it may be observed, is capable of a slight longitudinal, as well as rotary motion. The jet opening to the mixing chamber is at A, in the center.

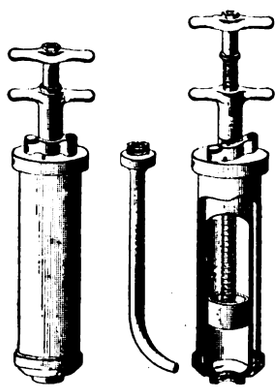
It is claimed by the makers, who are Messrs. S. de Beer, that several rather unexpected attributes are developed by the use of the jet. Not simply is the flow of fuel so well regulated that smooth running qualities otherwise undeveloped may be secured, but that the power and rate of acceleration is considerably improved, while the amount of fuel consumed per horsepower output at the fly wheel also is noticeably reduced.

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NOVELTY IN GREASE GUN DESIGN

The "Tuckahoe" Distinguished by a Cylinder within a Cylinder—Charging Requires Only Three Motions.

However effective it may be in other respects, and however well made and nicely polished, the average grease gun is a dirty thing to handle, because it is practically impossible to fill it without soiling the hands. That this operation also is sometimes accompanied by the mixing of small amounts of grit with the lubricant is an even more valid objection. In the new "Tuckahoe" grease gun both of these objections are eliminated by the adaptation of



a principle suggestive of that of the familiar "students lamp." In other words, there are two concentric cylinders, the outer of which serves merely as a retaining shell which may be kept clean at all times, and which never is inserted in the grease pot. The inner cylinder, in which the piston slides, is removable from the body of the device, and may then be plunged bodily into the grease.

When this is done it is completely filled at a single operation, and may be at once replaced in the outer cylinder, when the device is ready for use. The outer and inner parts, the former carrying the nozzle and the latter the working cylinder, are secured together by a screw attachment which is released by giving the handles a third of a turn. The plunger stem is threaded and engages a nut latch at the top thereby providing ample power for discharging even a very stiff compound through the nozzle. By releasing the latch, the plunger may be moved freely in the cylinder, this being useful in filling the receptacle, or in handling oils. As the gun is designed for use with either oil or grease, two separate nozzles of different size are provided. The device has just been put on the market by the Rubly Mfg. Co., Tuckahoe, N. Y.

Safeguarding Car in Hill Stops.

Cautious drivers who are forced to stop their cars on a sloping or hilly bit of road will do well to leave them standing with the front wheels slightly "cramped" so that should the machine be started with no guiding hand at the wheel, its course would be checked almost at once by the curbing or gutter. Although the ordinary forms of emergency brake are adequate to hold the machine under all ordinary circumstances there is considerable danger of their being released suddenly and even without outside interference when the teeth of the ratchet are worn, while there always is the peril of the inquisitive bystander who is overwhelmed with a desire to pull a lever or two in that meddlesome spirit which afflicts so many people in the streets.

New Series of Timken Bearings.

One of the possible objections to the use of tapered roller bearings in the past has been the overall length of bearing space necessary to get in the required size of roller. This feature has now been eliminated in a new series of short bearings which is being marketed by the Timken Roller Bearing Axle Co., Canton, Ohio., which are exactly the same in principle and detail of construction as the former types, except in such features as affect the total length, which alone have been modified to suit the requirement. Consequently these new bearings are adapted to parts which heretofore could not be adapted to their use.

Besides containing all the improvements which are embodied in the other latest types of Timken bearing they are made from the best grade of steel, carbonized and heat treated, and finally ground to size with a tollerance of only 0.0005 inch, on the mid-point diameter. The fundamental characteristic of ribs on the cone, of course, is retained. The space required for the new bearing is only 1 1-32 inch in the smallest sizes, and but 1 9-16 inch in the largest. This decrease in length, coupled with the use of a relatively small diameter of cup, greatly enlarges the possible application of the bearing. As in the larger sizes, the rollers are retained by the new type of pressed steel, one-piece cage, which is advantageous in reducing the number of parts in the bearing, as well as in affording better opportunities in the way of lubrication.

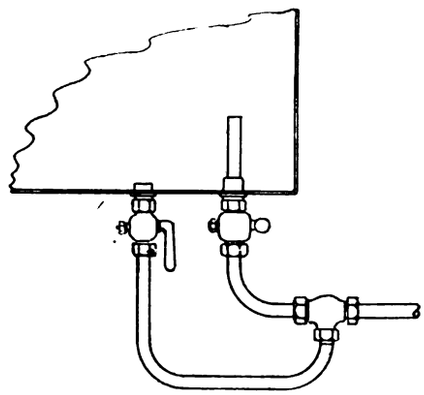
Keeping Emergency Brake in Shape.

Particular care should be taken on cars which have seen considerable use, to make sure that the teeth on the ratchet of the emergency brake are not worn dangerously low. Where this is the case, there is great likelihood that the lever will "jump" when the motor is started, sometimes greatly endangering the machine. Whatever wear occurs is most apt to be on the outer teeth which are engaged when the lever is in the full "on" position, and as this is the most critical section of the segment it should be reshaped to its original profile just as soon as the ends of the teeth begin to show any signs of turning over or wearing down.

SUBSTITUTE FOR AUXILIARY TANK

Utilizing Lower Portion of Fuel Receptacle for Extra Storage—An Ingenious Method of Piping Employed.

Force of circumstances, when the fuel supply has become suddenly and unexpectedly exhausted has caused many a motorist to bemoan his fate; and to prevent such periods of despair and the long tramps over lonely roads while the car is left in a ditch, which so often follow, a number of manufacturers have taken to fitting their cars with one or another of the several systems of compartment tanks which give ample warning when the supply begins to run



short. That these contrivances are more complicated and extensive than the circumstances really demand, is proved by the accompanying sketch of an ingenious method of piping, which is adaptable to any fuel tank, and which involves in addition to the introduction of one extra T-fitting in the pipe line and a short additional length of piping, one additional opening in the tank.

The suggestion, which is made by a foreign correspondent, is in a word, merely that of utilizing a very small part of the lower portion of the tank as an extra fuel storage space, drawing the main supply through an outlet which is raised by three or four inches above the bottom under ordinary circumstances. Thus, the reduction of the supply to a point where the main feed pipe no longer affords fuel to the motor is signalized at once and unmistakably, while the additional fuel remaining may be utilized by merely opening the secondary outlet and closing the main one. The system is applicable to gravity or pressure systems.

Descriptive Name for Raybestos.

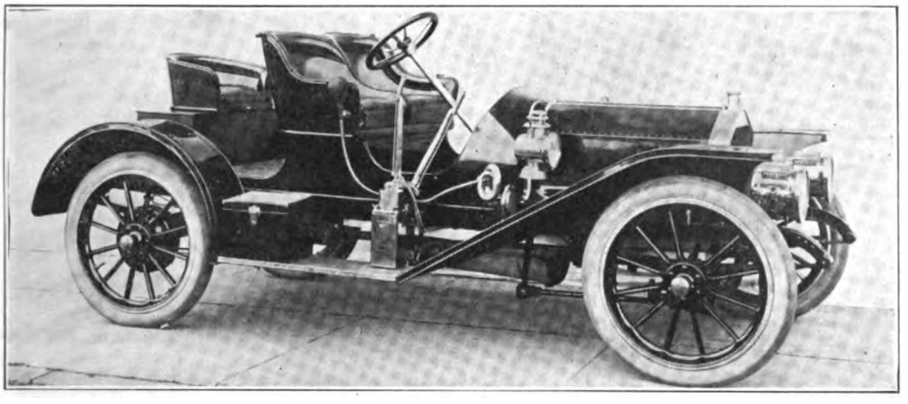
"Raybestos,' the asbestos-copper wire fabric which is being used so extensively by motor car makers just at present in lining the working faces of brakes, is to have a new and explanatory sub-title. Hereafter, as the Royal Equipment Co., its makers announce, it will be known as "Raybestos Friction Facing."

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TWO NEW PULLMANS FOR 1909

Line for the Coming Season Offers Wide Range of Choice in Design and Power —Specifications of New Models.

With two new models and two others brought up to date from their 1908 standing, the York Motor Car Co., Inc., York, Pa., is well fortified for the business of 1909. The models include in the way of chassis and horsepower, the Model "L," 20 horsepower, runabout; Model "K," 30 horsepower five-passenger light touring car; Model "6-30," high speed runabout; the Model "4-40," gentleman's roadster, and the Model "M," which is a 40 horsepower, seven-passenger touring car. Of these, the newcomers are the Model "K," and the Model "M." With these distinct models as a basis, however, a range of option in body construction is offered which makes possible to the purchaser choice from a line of practically ten different models, included among which is a neat little taximeter cab, mounted on a 20 horsepower chassis and possessing a number of qualifications all its own.



YORK PULLMAN MODEL "L," 4 CYL. 20 H. P. ROADSTER

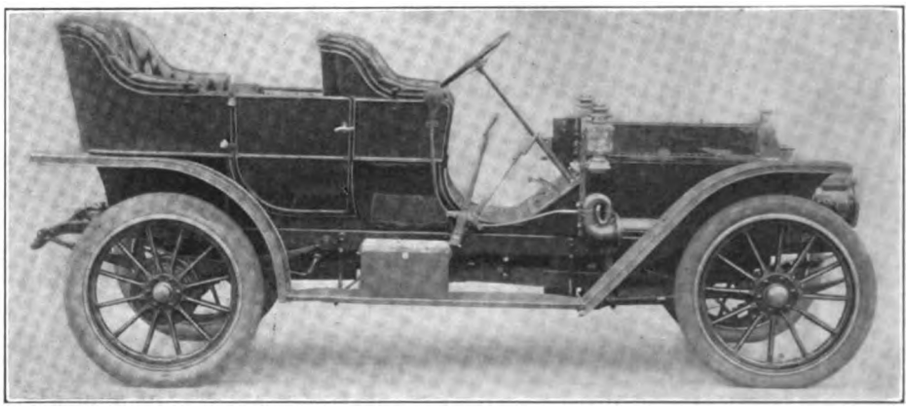
Model "K," is propelled by a vertical motor, four-cylinder, like all the Pullman motors with a single exception, and also in common with several of the other motors of its family of "squared" dimensions. The cylinders measure 4½ by 4½ inches. The cylinders are cast independently with heads and water jackets integral, and the valves, which are interchangeable, are located on opposite sides. Ignition is by jump spark with Bosch, high tension magneto, distributor, single coil and switch. Lubrication is by a system of integral distribution, newly developed, and so devised as to permit of regulation by valve adjustment to a positive oil level properly indicated. The speed range of the motor is from 150 to 1,800 revolutions per minute.

The master clutch is of the plain cone type, leather-faced and fitted with cork inserts. The change gear system is of the selective type affording three forward speeds. The gear shafts are mounted entirely on imported annular ball bearings, and the gearbox is of oil-tight construction, and designed to be packed with grease by way of providing for lubrication. The final drive is through a propeller shaft to the lixe axle which embodies a pressed steel housing, nickel steel shafts and gears, and the V-type of torsion rod. The front axle is of I-beam section, drop forged. Timken holler axle bearings are employed. The frame is of pressed steel with a substantial subframe carrying the entire power plant. The spring suspension is by semi-elliptic members at both ends of the chassis, the front ones being 40 inches long and those in the rear, 50. Both sets are 2 inches wide. The overall dimensions are: tires, 34 by 3½ inches; wheel base, 106 inches; tread, 56 inches; clearance, 10 inches, and weight somewhere in the neighborhood of 2,250 pounds.

In the second of the newcomers less difference from the current product of the company will be noticed. In fact, with a few comparatively slight changes, the car is much the same as already is produced. Of these alterations it may be noted that the wheel and tire sizes have been changed from the 1908 specifications to insure maximum comfort for general touring and now are 36 by 4 by 4½ inches. The frame and suspension construction is much the same in principle as is used on the Model "K," just described, except that the rear mounting of the chassis is reinforced by a semi-elliptic cross member shackled to the forward ends of the side springs. The gearset affords four forward speeds, instead of three, as in the former instance, and the direct drive connection is on the third instead of the fourth speed, the latter thus being "geared up" for sigh speed work under the occasionally excellent conditions found in ordinary touring. The drive and rear axle construction of this model is followed out in the same line as that of Model "K," including the floating system of mounting and the Timken bearings for the wheels.

The motor also is of regular Pullman design, having individually cast cylinders, of 5 by 5½ inches dimensions, and rated to develop 40 horsepower at 900 revolutions. As will be observed from the accompanying illustration of the chassis, the cylinder construction here perpetuates an original and rather peculiar system which has been employed on former models of these cars, in which the cylinders are cast with large core openings on the sides facing fore and aft of the chassis, the openings being flanged liberally and extended far enough so that the faces of adjoining cylinders may be bolted together—the effect thus secured being essentially that of the block casting, without the latter's drawback of high initial expense and high cost of replacement. The method secures for the cylinders a degree of rigidity which cannot be expected except in a battery of block cast cylinders, or those which are heavily braced together.

The Bosch ignition system is employed on this model, as is also the new oiling system. The clutch is leather faced, conical and fitted with cork inserts. The braking equipment is mounted entirely on the rear wheels, and is of the double, expanding-contracting type.



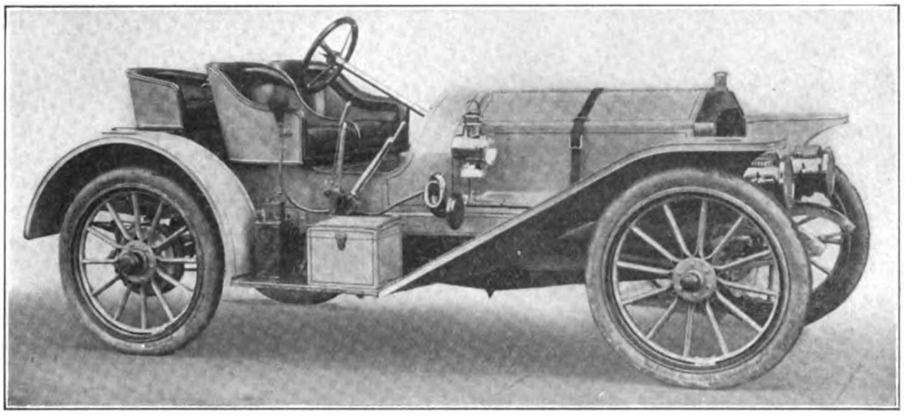
YORK PULLMAN 4 CYL. 30 H. P. MODEL "K"

To meet the demand for a high-powered runabout, the "4-40" model is continued over from the current line. In general its specifications are the same as for the Model "M," the chief difference between the two hinging about the construction of the body, and whatever minor alterations in the arrangement of the control mechanism may be involved.

The smallest car in the line, formerly known by its 20 horsepower rating, now is

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dignified by the letter "L," but otherwise remains practically unchanged either in status or mechanical formation. The slight process of alteration it has undergone has involved the adoption of the new oiling system, and the placing of the water pump alongside the magneto, where it is driven from the same shaft which actuates the ignition device. This model has 32-inch wheels all around, three speed, selective change gear, annular ball bearings for the entire transmission, shaft drive, 102-inch wheel base, 10½ inches clearance, and



YORK PULLMAN 6 CYLINDER, 30 H. P. LIGHT SPEED CAR

weighs somewhere about 1,750 pounds. It is put out in both runabout and "toy tonneau" forms.

The final member of the regularly catalogued line is the Model "6-30" light roadster, which is continued over into 1909, but under the inducement of a reduced price. Its motor is rated at 30 horsepower when turning at 1,000 revolutions per minute, though its speed range is said to run from 200 to 2,000 revolutions. The cylinder dimensions are 3⅛ by 3⅛ inches, and it has the opposite, interchangeable valve arrangement.

The taxicab specifications call for the 3¼ by 3¼ inch engine, mounted in the usual pressed steel frame with sub-frame transmission and engine mounting, slung on 40 by 48 inch semi-elliptical springs, front and rear, both sets being 2 inches in width; running on 32-inch wheels, shod with 4-inch tires and having 102 inches wheel base and 56 inches tread. The clearance of the vehicle is 10 inches, and the weight complete something like 2,250 pounds. The chassis throughout has the improvements which are newly embodied in the other models of the line, including the new method of oiling the engine and the use of the Bosch magneto and coil. The brakes, however, are applied to the transmission shaft and the rear wheels, respectively, the latter being of the expanding type and actuated by the foot pedal for service use. The emergency lever applies the transmission brake.

The body design is of the landaulet order, with folding top but without the hood extension over the driver's seat. The latter extends the full width of the vehicle and may be used for the accommodation of an extra passenger. The rear seat is placed well back of the rear axle which, as the radiator is brought flush with the forward axle, and the driver's seat located with an eye to ample foot room, gives a luxurious air to the vehicle which is frequently lacking in machines designed for commercial passenger service alone. The interior accommodations provide for four passengers and are designed with due regard to bodily comfort quite as much as to complete the styles of the vehicle. The vehicle is finished in dark blue, with upholstery also in blue.

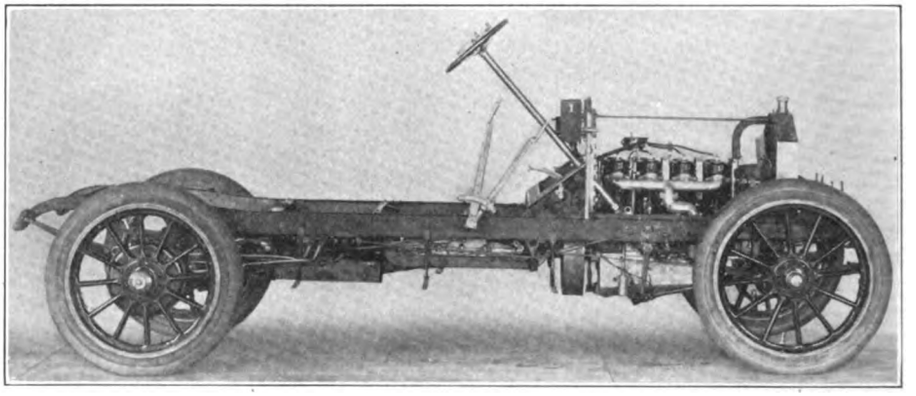
Advantages of the Thermo-Syphon.

"Even before the automobile became a factor in everyday life, when the intricacies of clutches and differentials were but indefinitely understood, engineers had largely solved the important problem of keeping the temperature of cylinders within working limits. Water cooling, that is by circulating water through specially designed chambers or "water jackets," has finally become the generally accepted type, but here designers disagree as to the best method of circulation," remarks J. D. Maxwell, of the Maxwell-Briscoe Motor Co.

"In 1901 and 1902, I made a series of experiments on both the pump and the gravity system, often referred to as the Thermo-Syphon system. As a result of these experiments, the thermo-syphon system has been a feature of Maxwell cars since 1904. Yet this system is not new; its earliest manifestation was the drawing up of water into the clouds by the sun.

"The advantages of the thermo-syphon system are several—the circulation is directly proportional to the heat developed and is independent of motor speed. In this respect, it differs materially from pump circulation, where the cooling effect is directly proportional to the speed of the engine. Secondly, unfailing reliability, since all mechanical devices such as the pump, gears and other connections, are eliminated. And lastly, the cooling effect is continued after the motor is stopped, until the cylinders and the jacketing water are of the same temperature.

"There seems to be a general impression that for equal horsepower, the thermo-syphon system is heavier than the pump system. In fact, this question was agitated last year in both the news and trade papers and at that time, the Maxwell-Briscoe Motor Co. submitted figures, showing that the amount of water carried in each case was pracically the same.



CHASSIS OF YORK PULLMAN 4 CYLINDER, 40 H. P. MODEL "M"

Internal Combustion Engineers Organize.

A new addition to the roster of engineering societies is the Internal Combustion Engineers Association, which has just been formed in Chicago, and which aspires to become a national, or even an international body. At present it has membership representation in the States of Ohio, Indiana, Illinois, Iowa, Wisconsin, Missouri and California. The association aims to advance in the broadest possible manner, the interests of internal combustion engineers, although it is neither a fraternal organization nor a union. In addition to assisting its members to obtain the most fitting positions and enable gas engine manufacturers to get more reliable and efficient service from their equipment, it will endeavor to develop greater uniformity of detail in design, material and workmanship among the various factories. The officers of the association are: President, H. R. Linn; vice-president, I. J. Bent; treasurer, I. J. Babcock, and secretary, Walter A. Sittig, all of Chicago.

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FEATURES OF THE PARIS SALON

What It Revealed of the Trend in Foreign Design—New Things Seen in the Show of Accessories.

In the words of an American visitor, the Paris Salon which closed its doors on Sunday last, "was a pretty poor exhibition as a show of automobiles." Shorn of its former glory, it limped to a rather humble termination on Sunday last, after a period of strenuous effort to assume the important aspect of other Salons. It suffered first, from the fact that it had been subdivided, the commercial vehicle and flying machine exhibits which have graced it in former years, and which have served to expand it into the greatest exhibition of its kind known to the world, now being grouped by themselves in a separate exhibition to open next week. It suffered second from the ticklish state in which the European and particularly the French section of the industry now finds itself. Notwithstanding, a very brave face was put upon matters by all the car manufacturers and the usual atmosphere of gaiety pervaded the Grand Palais. In nearly every case the individual decorations on the stands were the same or nearly the same as were used last year. Happily for the general effect, some of them were so elaborate and costly as to be well worth seeing several times, and they served to bring up the effect of the ensemble.

In the matter of attendance, the early days revealed the usual crowd of sightseers, the Salon still maintaining its former prestige as a social function pre-eminent. Though the exterior of the show was subdued and reduced to the decoration of the single exhibition hall, though even the lottery which hitherto has been one of the big features of the show was suppressed and no more voiturettes "given away," the crowds continued to surge about the stands and present all the appearance of real business activity. An outlet for the press was furnished by the vacant spaces left by the several unoccupied stands which had been assigned to firms which later sunk under financial difficulties.

A general impression of the show, following the line of the forecasts published a couple of weeks ago revealed some little disappointment in the case of the cars exhibited, but an even more surprising improvement in the displays of accessories which, in variety, quantity and ingenuity outrivaled anything which has yet been seen. Small cars were in abundance, innovations scarce, and among even the more progressive manufacturers, significant changes a rarity. As for trend, it was observable that firms which continue to adhere to the policy of building large and expensive cars are inclining even more than formerly to the use of the sextuple motor, and that in many instances this principle is now carried down to cars of moderate power. Indeed a census of the show revealed a total of no less than 96 cars of this type as against 57 a year ago and only 23 in 1906. The light four-cylinder models, however, predominated. Of freak designs —once so prominent and diverting a feature of the Salon—there were practically none among the exhibits of cars. In the accessory section, however, this phase of the exhibition was renewed in the displays of motors designed for air-ship use, many of which are now produced by long-time automobile makers.

In the finer points of design about which such sharp controversies used to wage, there is now little diversity. Those makers who have settled upon systems which are more or less unusual, continue to adhere to them. Questions of the relative advantages of cone and multiple disc clutches, shaft and chain drives, thermo-syphon and pump systems of circulating the cooling water, high and low tension ignition, selective and progressive methods of actuating the change gear, and pressed steel and armored wood frames are no longer discussed to any great extent on the floor of the show. At the same time it is observable that certain of these questions have been settled by the makers themselves, not by the universal adoption of a single system, but by the use of different ones on different models.

Thus, with the idea that low tension ignition gives better service in the hands of skilled drivers than when placed under the control of the private owner or the novice, several of the makers, among them the producers of the Brasier, Berliet, Mercedes and Lorraine-De Dietrich cars, are now fitting that system on their larger powered machines, while for the medium and low powered models they use the high tension system with its advantage of greater simplicity.

Simplification of dashboards, so noticeable in this country a year ago has now taken hold in France to a more evident degree. The newer Panhard cars, for instance, instead of the coil lubricator and other accessories which formerly adorned them, now have clean dashboards with only the switch and sight-feed glass of the lubricator in sight. The coil has been placed under the bonnet and the lubricator also is located on the front side of the dash. In the case of the Berliet cars, the abandonment of the pressure system of feeding the fuel has permitted the elimination of the several adjuncts to that arrangement, while even the two sight-feed glasses on the rear axle and transmission lubricator lines, have been relegated to a place of concealment under the bonnet. The Renault cars now have the sight feeds of the lubricator let into a special and very neat form of panel on the dash, and are enclosed under a glass plate which is flush with the face of the dash. The lubricator is lodged in front of the dash, and the filling cap is placed directly beind that of the radiator, which continues to occupy its former position straddling the front of the dash. Oddly enough, on this stand is to be seen the only survivor of the numerous self-starting devices which cropped up so plentifully a year ago.

Several makers other than Renault are coming to like the placing of the radiator on the dash, the Berliet cars now having a top and bottom tank so mounted, while several smaller firms have copied the same idea. On the new C. G. V. cars the gilled tube radiator is not carried clear across the dash, but is cut away to admit the placing of the fan directly within its enclosure.

Among improvements in engine construction several instances in which the valves had been suitably encased were noted, as with the Bollée, and Delahaye, the latter also adding a casing for the gas intake and exhaust and the water inlet connections. In general, however, changes in this quarter were scarce and not remarkably significant. Practically the only strikingly novel exhibit was that of the Europeanized, American Silent Knight engine, which was shown on two different stands by concessionaries of the Daimler company, one of them exhibiting a gasolene-electric chassis which mounted it. The Panhard firm, which also had been expected to display this motor as a feature, failed to produce it on any of its models.

A brief scanning of the exhibits with regard to transmission construction, revealed a noticeable disappearance except in rare instances of the expanding ring clutch, which is regarded as having numerous shortcomings; and a continuance of the struggle between the cone and disc types, with many changes of dimensions in the latter to indicate that practice in its design is even yet very unsettled. Change gears are no longer remarkable as an attraction to the seeker after novelty, and but one of the many "mixed" systems which have been shown in former years, is now in a flourishing condition. Live axle constructions continue to multiply on cars of all types except those of the highest power.

The international character of the show has dwindled in keeping with its shrinkage in other respects. While the usual number of other European makers were in evidence, England contributed but a single exhibit, while America had but two. Of these, that of the Ford Motor Co. figured most noticeably.

Inventors Invited to a Competition.

In an effort to secure an effective appliance for preventing any splashing from their vehicles upon their patrons and other pedestrians, the Companie Générale des Omnibus, of Paris, is organizing a competition for contrivances of this nature. Among the specifications on the entry blanks are that competitors shall state the price at which the devices may be had, and also the amount of royalty which would be demanded in the event of the company's deciding to manufacture them on their own account.

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YOUNG HOODLUMS AROUSE PROTEST

Buffalo Police Department Requested to Stop Boyish Attacks on Motorists—Their Outlawry a Menace.

Because a solicitous mother pointed a gun at a representative of the firm when he undertook to remonstrate because her offspring had snowballed him while driving a car, the E. R. Thomas Motor Co. has filed a protest with the Buffalo (N. Y.) police department, pointing to the rapid growth among the youth of the surrounding territory of amusing itself by throwing things at passing motorists. This is the second time the Thomas company has resorted to this measure, a former attempt to secure protection from the police having proved of no avail.

"Some time ago," says the letter, "an out-of-town customer was riding in one of our cars when a boy threw a hard snowball which hit our customer in the eye, breaking his glasses and a part of the lens entered the eyeball and nearly caused the loss of sight.

"A few days ago the writer was struck in the eye by a snowball thrown by a boy. The pain was very intense and for a time there was serious danger of losing the sight of the eye.

"The writer succeeded in catching the boy as he was entering his home and intended to explain to the mother what the boy had done so that she might make an effort to stop his habit, but instead of making any effort to chastise the boy she rushed to the window with a revolver and threatened to shoot the writer, which she probably would have done if the boy himself had not had presence of mind enough to stop her threatened action by explaining the deed.

"It seems impossible to get the parents to make any effort to stop the practice so that we have nothing left but to appeal to your department. We trust you will appreciate the extreme seriousness of this rapidly growing habit and the extent to which it exists to-day, and sincerely hope that you will find some means of stopping it."

Chicago May Offer More Trophies.

At the annual meeting of the Chicago Motor Club on Tuesday, 8th inst., besides re-electing F. C. Donald president, the idea of adding two more trophies for the annual A. A. A. tour was agitated. The club is anxious to hold, under its own rules, in connection with the tour, a gasolene consumption contest and a non-repair competition. Some weeks ago, Col Studebaker offered a $5,000 cup for a no-repair test in this tour and if he sees fit to award this trophy under the Chicago club's formulated rules, that will prove highly satisfactory; otherwise, the club wants to put up its own trophy.

As one of the C. M. C.'s aims is to promote economy among drivers, it is willing to put up a cup to be contested for under its own gasolene consumption formula by Glidden tour entrants, and believes that such a contest would please manufacturers.

In the election, in which there were three tickets, Donald's rival candidate, Thomas Hay, backed out at the last moment and gave the winner a clean sweep, the third ticket also including Donald's name. The slate for the coming year is as follows: President, F. C. Donald; first vice-president, Charles P. Root; second vice-president, David Beecroft; secretary-treasurer, F. H. Trego; directors, F. E. Edwards, Paul Picard, Louis Geyler, J. V. Lawrence, H. P. Branstetter.

Women to Hold Reliability Test.

On December 20 and 30, if all goes as is proposed, there will be a road contest from New York to Philadelphia and return that will have at least one novel feature. It will be the first run of the Women's Motoring Club of New York and women drivers only will be eligible as contestants. Entry blanks have been issued by W. J. Morgan, who is to manage the affair and who believes that he can make the run a success. The cars will start at 9 a. m., Tuesday, December 29, from Columbus Circle and make a stop along the route in New Jersey, for luncheon. Upon arriving at the Quaker City the local women's motoring organization that bears that pretty name, La Manigata Klaubo, will receive the contestants at the Walton.

While the rules require that women must drive the entire distance, male mechanics will be permitted, to attend to the heavy work of cranking and changing tires. While no official observers will be appointed in the usual manner, all passengers of each contesting car will be required to sign each day's card and jointly report repairs and adjustments, thereby being placed upon their honor. All types of automobiles will be eligible.

Harrisburg Announces Four Days Contest.

Having conducted a few very successful reliability contests in the past, the Motor Club of Harrisburg, Pa., announces a four days reliability run for the first week in May, 1909. As it is generally understood that next year's Glidden tour will start from Chicago and proceed westward, the Harrisburg Club will aim to make its contest the chief eastern reliability tour of 1909. The Harrisburg body is now planning to ask the co-operation of several of the larger eastern clubs, which will be requested to appoint a number of the officials of the contest. The rules will provide for a schedule well up to the legal limit, with observers on all cars; also a technical examination at the finish. One of the proposed features will be an actual tire record giving a practical contest for tire manufacturers.

RIDICULE KILLS A BRIGHT IDEA

Card System for Identification of Motorists Looks Good to St. Louis Police Chief—But the Public Kicks.

Some time ago a bright idea originated in the heads of certain members of the Automobile Club of St. Louis for a novel card system that was calculated to do away with much of the annoyance occasioned when members were arrested for speeding. The arrangement was for drivers to carry cards issued by the local club and countersigned by the chief of police. If placed under arrest by a policeman, all that would be necessary for them to do, would be to display the passport, giving the cop the number and then the motorist might proceed upon his way in perfect peace. He would merely have to appear in court the next day to answer the charge.

Chief of Police Creecy considered this plan a good one at first, but he changed his mind later when citizens of St. Louis who were not members of the club set up a howl and as a result, the card system will not materialize. As soon as the idea was made known, the newspapers and comic supplement editors took it up and made it the butt of numerous jokes, some suggesting that the chief extend the system to benefit those who could not afford the luxuries of automobiles, such as recognized professionals among the porch-climbers, highwaymen, confidence men and lady shop-lifters, to save them the annoyance and embarrassment of being arrested at inconvenient moments.

In reply to the objections of those who were not members of the automobile club, the Chief declared that he intended no discrimination regarding non-members, but that the idea would have held good for any motor car owners who cared to make application to him for cards. Inasmuch as the people seemed to have the idea that the club was being favored, however, he decided not to inaugurate the plan.

Thespians Abandon Trains for Automobiles.

While it is the usual custom for theatrical companies to use the railroads as a means of transportation from place to place, or more often to walk, up-to-date methods are now being employed by a number of Broadway favorites. Walter Hale, who owns a 40 horsepower Studebaker car is so disgusted with the disagreeable features of train travel that he has practically abandoned that style of transportation and with a few of the leading members of "The Wolf" company, uses his car almost exclusively. The railroad is graciously permitted to carry the trunks, scenery and the minor members of the cast, but Hale no longer has to worry about time table schedules.

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JAIL SENTENCE FOR JOY RIDER

Court Regrets that He Cannot Make the Term a Year—Maximum Fine Added to Thirty Days' Imprisonment.

"It's almost a pity you weren't killed. Thirty days and $250 fine is the heaviest sentence we can give you, I regret to say. I wish I could give you a year," declared Justice Wyatt in the Court of Special Sessions, New York City, one day last week, when Felix Droit, a French chauffeur, was being tried for speeding. This penalty is the heaviest ever imposed upon a driver in that court for breaking the speed laws, and if Droit is unable to pay the fine, he will be confined in jail 250 days in lieu thereof.

According to the testimony of Policeman Rickert of the motorcycle squad, Droit was speeding up Broadway at a rate of 40 miles an hour on the morning of August 28 last, at about 5 o'clock. At Fifty-second street, Rickert gave chase and Droit swung into Fifty-first street and up Seventh avenue and then amused himself by zig-zagging in and out of various streets on the West side between Thirty-fourth and Fifty-seventh streets, with the motorcycle cop in pursuit. It was not until the driver hit an "L" pillar at Fifty-first street and Third avenue that the chase ended. Rickert declared that Droit turned corners in the most dangerous fashion and added: "Half the time he was on the sidewalk. He ran two blocks on the sidewalk on Thirty-fourth street. I fired five shots at his tire during the chase, but I couldn't hit it. It was the most daredevil driving I ever saw. Even when he hit the pillar and his left rear wheel came off it didn't stop him. He stuck to the machine and it slid a whole block, it was going at such speed."

After hearing other witnesses, who testified that on the date of the chase, the owner of the car, H. P. Wilson, was in California and that the chauffeur was "joy-riding," the court decided to make an example of him and held that the fact the speeding was done at an hour when there was little traffic in the streets, did not alter the case any.

Following the decision, District Attorney Jerome said he would endeavor to have Droit's chauffeur's license revoked and if he finds that the law as it now stands, does not provide for such revocation, he will try to have a bill passed in the Legislature that will enable the District Atorney's office to revoke licenses after a third offense.

New York Leads in Road Building.

According to the statement issued on December 12, by State Engineer Frederick Skene, of New York, 820 miles of good roads have been constructed in New York State during the current year. This is considably more than was accomplished in 1907, when only 311 miles were built. Skene also points with pride to the fact that while Massachusetts and New Jersey formerly were leaders in good roads work, New York State is now far in advance of these in highway improvement.

"There are at present approximately 500 miles under contract," he states, "and over 1,000 miles awaiting contract. Of the $50,000,000 State money voted by the people for this work, $11,000,000 has been appropriated.

"If the roads completed during the last season were placed end to end they would reach from New York City to Buffalo, via Albany and Rochester, and from Buffalo to New York City, via Elmira and Binghamton."

Owners Who Drive Must be Licensed.

Because many New Jersey automobile owners who employ chauffeurs to drive their cars, are careless about obtaining licenses for themselves to cover the infrequent occasions when they care to drive their own machines, the State commissioner of motor vehicles has issued a warning to this class of motorists. The department expects to keep close watch on owners who are careless about the matter of their own driving licenses. In a word, a man owning a high-powered car, which ordinarily is driven by a chauffeur, has got to pay $28 or more annually instead of $14, if he himself cares to take the wheel occasionally.

Virginia Motorists Want to be Taxed.

Virginia motorists are making an effort to get the State to tax each automobile owner within its borders the sum of $10, instead of not taxing them at all, as is now the case. The motorists want to be taxed so that good roads can be built, over which they may drive in comfort. It is estimated that there are now about 500 cars owned in the State and that a taxation at the rate proposed would raise an annual fund of $5,000, which is used to augment the State's small appropriation for good roads, would be of considerable benefit. Several of the automobile associations in Virginia hope to introduce a bill in the legislature.

Maxwell-Briscoe Owners Getting Together.

Clubs composed exclusively of the owners of certain makes of car are finding a useful purpose in amalgamating the common interests of the members, who are bound together by ties altogether different from those which exist in the more ordinary form of motoring organization. The latest association of this type to be conceived, is the Mexwell-Briscoe Motor Club, which is now in process of formation. An annual tour of two or three weeks' duration is to be one of its allurements to prospective members.

Three Cities Ready for Taximeter Cabs.

Denver, St. Louis and New Orleans are all promised taximeter cabs in the near future. In each case the tentative date for the installation is about the first of the year.

LAW SAID TO INJURE BUSINESS

New Jersey Automobile Trade Association Alleges a Boycott of the State—Demand for More Liberal Legislation.

Claiming to feel the resentment of motor car owners and manufacturers at New Jersey's automobile law, in a decline of business and a withdrawal of orders by individuals and companies outside of the State, the New Jersey Automobile Trade Association appointed a committee, on the 10th inst., to take steps for a modification or repeal of the law. The resolutions accompanying the appointment of the committee recited that many automobilists are avoiding New Jersey altogether, thus lessening the revenue of the residents, and that the fifty or more lines of trade within the State which are more or less directly concerned in the automobile industry are "seriously menaced owing to the arbitrary laws enacted and now in force" relating to the motor car traffic.

At the meeting a number of letters were read, wherein the New Jersey recipients were told that they need not expect further business from the writers until the State's attitude toward automobiles was changed for the better. Instances were given where visiting motorists were fined for coming within the State without a license, yet who, because of holiday regulations, were not able to obtain licenses to proceed after paying their fines. Altogether the law came in for a severe scoring, and the trade interests of the State purpose to see that it is remedied.

Long Island Club Elects Officers.

At the Long Island Automobile Club's election, held on Wednesday, 2d inst., at the club house, Frank G. Webb was chosen president, William Schlimpf proving victorious for vice-president, and C. C. Cluff for treasurer, while Herbert Andrews is to be the new secretary. When the election started two tickets were in the field. Three new members were chosen to act on the board of governors: Alfred Weimarth, Charles Jerome Edwards, and Dr. A. C. Howe. Announcement was made of the annual club dinner to be held Thursday evening, December 10. The secretary's report showed a gain of 50 members during the past year.

Chicago Club Auxiliary Issues Bonds.

A 6 per cent. bond issue to the amount of $25,000, has been underwritten by the Western Trust and Savings Bank for the Chicago Automobile Club Auxiliary Association. The bonds are due August 1, 1913, and the property consists of the leasehold and improvements of the southeast corner of Jackson Boulevard and Plymouth Place, together with other real estate.

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WHEN THE TARIFF WALL HELPED

How Importers Clambered Over It to Paths of Opulence—Typical Transactions Before Tribulation Began.

Efforts on the part of the importers of foreign made cars to gain the advantages of a tariff reduction serve to call attention to the comparative straits in which they now find themselves by contrast with the former palmy days when they were in no way surrounded with any of their present difficulties either in securing a market for the product they represented, or in exploiting it at almost any price they cared to name. Indeed, the days are not long past when the "tariff wall," now become so onerous, was welcomed as an excuse for raising the price of the European product, and was accepted by the opulent purchaser almost as a matter of course, and without protest. In reminiscent mood, a man who has long been familiar with the operations which have characterized the foreign market in New York City, recently gave an instance or two as typical of some of the methods which were so profitably carried on a few years ago, when the most palatial and exclusive establishments along upper Broadway were those conducted by the importers.

"It was not enough to add item after item to the cost in those days," he said, "until the sum which the buyer paid for a car of pretentious appearance soared way up into the thousands beyond its legitimate value, but occasionally the dealer resorted to the most brazen trickery in his zeal for swapping the foreign made automobile for the American-made dollar. Here is a case in point which came to my knowledge a while ago, and which concerned an importing company then well known, if not notorious for the lavish display of its establishment and the huge prices asked and received for the famous car which it handled.

"One of the 'gilded youths' of the town took it into his head to buy one of those particular cars, and was accordingly mulcted to the tune of $16,000 or thereabouts for the car and its complete equipment. A few days later, becoming hard pressed for money, he was forced to dispose of his new possession, and approached the manager of the same concern with a proposition to stand the car on the floor in the hope that the company could secure a buyer for it. The offer was accepted with the usual assurances that only the most nominal figures were allowed for "second-hand" cars, and that the company would require a liberal commission in return for its efforts at disposing of the undesirable property when it had plenty of newer and therefore better cars of its own to offer the purchaser. Needless to say, the terms were readily agreed to and the car was polished up and put in the show room.

"Not many days afterward there appeared at the office a wealthy creamery operator from Pennsylvania who wanted a fast car to take him daily between his office in Philadelphia and his country home. He wanted a 90 horsepower car, he said—one that would go '60 miles an hour.' He was advised by the suave manager that they had no 90 horsepower cars just then, but they had a 60 horsepower car which ought to just about satisfy his requirement. Accordingly, the storage car was taken out, and he was given a speedy demonstration over the road to the City of Brotherly Love at a rate which fairly took his breath away, and actually made him beg the driver to save his life by slowing down. The car having thus proved satisfactory, a sale was agreed upon, and this second purchaser was taxed the full $16,000 for the car and its original equipment before he became possessor of it.

"The young New Yorker who had owned the car for a brief space of time, but not long enough to mar its finish, was then approached with the glad tidings that the assiduous management had at length succeeded in disposing of his machine, and at a very gratifying figure, too. By great good fortune the car had been sold for no less than $9,500, which, deducting the firm's commission of $1,000 for the transaction, would net the happy near-bankrupt exactly $8,500. He was even congratulated on his 'luck' in getting so much for the car, and I daresay the congratulations were sincere, for I don't know why they gave him as much as they did.

"But there were two sides to the importers' story then, as there are now," he continued. "In one instance, this same company gave a long series of most promising demonstrations to a young man of apparently wealthy circumstances, who for a period of not days, but weeks, ordered the demonstrator to meet him at the Waldorf Hotel late in the afternoon each day, and thereupon went for long rides with his charming lady friends, and had very gay times indeed. He was pleased with the car, he announced at length, but still questioned it in one or two respects. Finally, some question having been raised as to whether he actually lived at the Waldorf, a salesman hopped on the car one night, and pointedly offered to 'take him home.' This failing to bring about the desired result, a quiet investigation was commenced, when it was learned with some alarm that the supposedly good 'prospect' actually resided in a very limited uptown flat under the tender solicitude of his mother, that he had hardly enough money to pay for his elaborate motoring apparel, and that he was in the habit of meeting his Waldorf appointments by riding downtown on a trolley car.

"You will see from this that the importers were forced to exercise self-protective and retaliatory measures sometimes. Though you can judge for yourself whether they managed to keep themselves afloat," he concluded.

LIGHT ON ENGLAND'S PATENT LAW

How Far It Binds Foreign Inventors to British Manufacture—Assemblage of Machines Apparently Sufficient.

Doubt and anxiety as to the interpretations under which the new patent act in the United Kingdom will be administered, has led numerous American manufacturers to address inquiries to the American consuls stationed in Great Britain, particularly as to the extent to which the provision for manufacture in the United Kingdom is binding. In this connection Consul J. N. McCunn, at Glasgow, replies to a New York inquirer as follows:

"With regard to the clause 'to an adequate extent,' I am informed that it would appear to be perfectly in order, in the meantime, to manufacture the parts of a machine in the United States and have them assembled in the United Kingdom. The ground on which this view is taken is that each part of the machine, taken separately, is not a patented article, the patent merely applying to the machine as a whole. No test case has yet been taken in the British courts, and I am informed that the above is the generally accepted reading of the law until such a test case is brought.

"A company has recently been started in Glasgow," he concludes, "having for its object the safeguarding of the property of foreign patentees selling in the British Isles, and one of their pamphlets, which gives excerpts from the patent act, is forwarded and may be obtained from the Bureau of Manufactures."

Growth of the Industry in Germany.

It is difficult to appreciate the rate of growth of the automobile industry, so rapid has been its expansion during the past few years, and so absorbing have been the details of technical improvement which have attracted attention almost to the exclusion of all consideration of its business development. Its rate of increase the world over, however, is aptly reflected in the case of Germany where the dozen automobile factories of 1901 had been increased to 24 in 1906, while the value of the total product had increased nearly ten-fold in the five years. The German official statistics are quoted by American Consul William Thomas Ree, of Bremen:

"In 1901 there existed in Germany 12 automobile factories employing 1,589 persons, while in 1906 this number had increased to 34 factories with 10,347 employes. In 1901 $431,873 in wages were paid by the factories, or $272 per workman, while in 1906 $3,171,012 were paid for wages, or $307 per workman. The total value of production shows nearly a tenfold increase in the five years. It amounted in 1901 to about $1,340,000, and in 1906 to $12,200,000."

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The Week's Patents.

898,317. Explosive Engine. Varnum F. Carpenter, Cleveland, Ohio. Filed Dec. 21, 1907. Serial No. 407,527.

1. An engine having an explosion chamber and a piston therein, a duct for the charge leading to said chamber, a rotatable valve in said duct, means to rotate said valve and open and close the same at alternate strokes of the piston and means to retire said valve from said duct and leave the duct unobstructed, whereby a two-cycle engine is obtained.

898,361. Carburetter. Frank H. Heitger, Indianapolis, Ind., assignor to Speed Changing Pulley Company, Indianapolis, Ind., a Corporation of Indiana. Filed March 31, 1906. Serial No. 309,195.

1. In a device of the class described, a mixing chamber having an air inlet opening at the bottom and an outlet at the top, in combination with a liquid reservoir adjacent to said chamber and having a duct extending beneath the opening in the latter, a nozzle rising into said chamber from said duct, an air valve concentric with said nozzle for regulating the admission of air at the inlet opening, and a vapor tube within said chamber and forming a guide for said valve, substantially as described.

898,402. Elastic Vehicle Tire. William Brameld, Paterson, N. J., assignor of one-tenth to James T. Jordan, Paterson, N. J. Filed Aug. 14, 1907. Serial No. 388,449.

1. An elastic unitary tire member having cells arranged in lines radiating, in the cross section of the member, from substantially a common center, each cell extending short of the exterior surface of said member but having its radial dimension equal to the major portion of the corresponding dimension of said member, substantially as described.

898,427. Igniter for Explosion Engines. Henri Benoist, Paris, France. Filed Sept. 24, 1907. Serial No. 394,334.

1. In a device of the character described, the combination with a main supporting member, of an insulated stem extending therethrough, an auxiliary supporting member designed to be telescopically, removably secured to the main supporting member and terminating in an electrode, an insulating member contained within said auxiliary supporting member and a pin passing through said insulating member and terminating in an electrode, said pin being designed to contact with said stem to conduct current to the said electrodes.

898,436. Vehicle Wheel. Herbert Clifford, New London, Conn., assignor to Ralph Clifford, Monson, Mass. Filed April 20, 1907. Serial No. 369,353.

1. A vehicle wheel comprising a hub, spokes and felly, and a rim formed from convolute springs and ends of which are bent inward beyond said felly to which the ends of the springs are secured, substantially as described.

898,438. Engine Starter. Clyde J. Coleman, Rockaway, N. J., assignor to Conrad Hubert, New York, N. Y. Filed Aug. 13, 1904. Serial No. 220,648.

An engine starter comprising power applying means engageable with the engine, a pressure applying chamber, the power applying means being actuatable by pressure in the chamber to move it in one direction to start the engine, means opposed to such movement and operative to return the power applying means to starting position when the pressure in the chamber is relieved, pressure storage means, and a pressure and exhaust valve controlling the communication from the storage means to the chamber, and also controlling an exhaust from the chamber.

898,483. Spout for Cans. Charles F. Kellom, Philadelphia, Pa. Filed March 16, 1907. Serial No. 362,661. Renewed June 20, 1908. Serial No. 439,599.

1. In a can, a nozzle and a spout pivotally and invertibly supported adjacent said nozzle and adapted to be brought concentric with relation to and to coact with said nozzle, said spout having means embracing said nozzle whereby the contents of the can may be poured therefrom without leaking or spilling.

898,494. Carburetter. Louis P. Mooers, Cleveland, Ohio. Filed June 30, 1905. Serial No. 267,679.

1. In an explosive engine a plurality of independent sets of carburetting means, one of the carburetting factors being the same in each set, other carburetting factors being different in each set, a mixing chamber, an engine throttle and means operating simultaneously with the closing movement of the throttle to cut off that carburetting set having the least carburetting effect for a given volumetric rate of flow of the mixture therefrom.

898,495. Carburetter. Louis P. Mooers, Cleveland, Ohio. Filed June 30, 1905. Serial No. 267,680.

1. In an explosion engine, a plurality of independent sets of carburetting means having different permanent carburetting factors, an engine throttle, and means operating simultaneously with the throttle for throwing any individual one of said carburetting sets out of operation, and bringing a second set having a different permanent factor into action.

898,497. Automobile Tire. William Muller, Philadelphia, Pa. Filed Sept. 27, 1907. Serial No. 394,782.

In an automobile wheel, a split rim formed with opposing and inwardly curved jaws, one jaw being integral with the wheel spoke and the other jaw being removably secured to said wheel spoke, a spring chamber recessed in said split rim and formed partly in the integral and partly in the removable jaw thereof, a tire having an enlarged tread and base and a narrowed neck, a tire sheath secured to and inclosing the neck and base of said tire, a plunger secured to said tire sheath and slidably mounted in said spring chamber, a spring coiled in said spring chamber, and a tension bolt mounted in the end of said spring chamber, whereby the tension of said spring may be regulated, substantially as described.

898,567. Gasolene Filter. John Ellis, Lynn, Mass. Filed April 28, 1906. Serial No. 314,141.

1. A gasolene filter and separator comprising in its construction a casing provided with a passageway extending longitudinally therethrough and having an inlet and an outlet orifice, said casing provided with a filter chamber adjacent to said inlet orifice, there being a precipitation chamber located beneath said passageway between said filter and said orifice.

898,608. Vehicle Wheel. Christian Seewald, Williamsport, Pa. Filed April 22, 1907. Serial No. 369,540.

1. A vehicle wheel having a hub, spring spokes with their inner ends secured to said hub, a rim to which the outer ends of said spokes are fastened, discs at the end of the hub bearing respectively against the opposite sides of the spokes near their outer ends for transmitting driving stress to said spokes near their outer ends.

898,665. Lens. Geo. A. Macbeth, Pittsburg, Pa., assignor to C. T. Ham Manufacturing Company, Rochester, N. Y., a Corporation of New York. Filed May 21, 1908. Serial No. 434,076.

1. A lens comprising a concave convex ringed refracting portion and an integral surrounding plain annulus of greatest thickness at its inner edge and tapering therefrom to the outer edge.

898,678. Casing and Cylinder Construction for Gas Engines and the Like. Charles R. Piggins, Racine, Wis., assignor of one-half to Frederick Piggins, Racine, Wis. Filed Feb. 26, 1908. Serial No. 417,837.

1. A gas engine casing, comprising a base having a cylinder seat, a water conduit and a gas conduit within the base each having an opening leading to the top of the base, an engine cylinder mounted on the cylinder seat of the base and provided with a water passage and a gas passage within its walls adapted to register with the openings of the water conduit and the gas conduit respectively, a water jacket communicating with the water passage, and an intake valve chamber communicating with the gas passage.

898,714. Anchoring and Tension Device for Tire Protectors. Samuel C. Wolfe, Angola, Ind. Filed Nov. 14, 1907. Serial No. 402,121.

1. In a tire protector of the class described, the combination of a tire receiving sleeve having free edge portions, means for securing said sleeve to a wheel and comprising rigid split rings detachably applied to the free edge portions of the sleeve, means for adjusting the connection between the ends of the split rings, and tension devices connected with the split rings, each consisting of a housing, windlass shafts mounted in said housing, flexible members connected with the windlass shafts and with the split rings, and means whereby the flexible members may be wound on the shafts for the purpose specified.

898,798. Shock Absorber for Automobiles. Irving Stanley, New York, N. Y., assignor to Merritt S. Middleton, Brooklyn, N. Y. Filed Aug. 8, 1907. Serial No. 387,584.

In a shock absorber, an integral casting comprising a hollow casing and an attaching plate having bolt holes, whereby the structure may be rigidly attached to the car, a cylinder closed at one end and threaded into the casing, a piston in the cylinder provided with an unobstructed passageway of permanent and uniform capacity, whereby the material in the cylinder may pass from one side to the other of the piston, a rock shaft journaled in the casing, two cranks on the rock shaft, one within and the other without the casing, means connecting the crank within the casing with the piston and other means connecting the other crank with an appropriate part of the car.

898,807. Valve Mechanism for Engines. William L. Wayrynen, Dolph, S. D. Filed June 25, 1907. Serial No. 380,762.

1. In an engine, a cylinder having an inlet valve, a valve stem carried thereby and extending to the exterior of the cylinder, a casing inclosing the outer end of said valve stem and having an opening in the side

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thereof, a lever pivoted to said casing and having a portion thereof adapted to enter said opening to engage with said valve stem, an exhaust valve, a valve stem therefor, and engaging with said lever to intermittently move it into and out of engagement with said inlet valve stem, and means adapted to engage with said lever to cause the latter to lock the inlet valve in its closed position when the engine exceeds a predetermined speed.

898,832. Elastic Tire for Wheels. Felix J. Chary, Paris, France. Filed Jan. 13, 1906. Serial No. 295,920.

In a tire for vehicle wheels, the combination, with the rim, of a plurality of frames of parallelogrammic form secured in said rim independently of each other, each frame having a groove at its under part on all sides, and inwardly projecting tongues intermediately of the length of all of the sides, and tread blocks secured within said frames by means of base flanges which extend beneath said tongues and into said grooves, the grooves or spaces between adjacent blocks extending obliquely of the tread surface.

898,850. Pneumatic Tire. William Drury, Swansea, Wales, England. Filed April 14, 1905. Serial No. 255,520½.

1. In a pneumatic tire, the combination of an inner strain cover divided longitudinally upon its outer part, an outer tread cover divided longitudinally upon its inner part, interlocking means intermediate between said covers, such means acting to interlock the parts under inflation, said interlocking means comprising longitudinally extending recesses and interlocking projections.

898,903. Rotary Gasolene Engine. Chas. W. Lindsay, Anthon, Iowa. Filed Aug. 23, 1905. Serial No. 275,448.

1. In an engine, the combination of a pair of sections each comprising a cylinder and half a crank chamber, bolts for connecting the sections together, bearings formed on the sections and lying in the plane of division thereof, a crank shaft mounted in the bearings and having a bore extending short of the inner end thereof and provided with a plurality of transverse passages leading out of the bore, sleeves in one of the shaft bearings leading out of the bore, sleeves in one of the shaft bearings and arranged in spaced relation to form a chamber into which the said passages discharge, pistons in the cylinders, connections between the pistons and crank shaft, a valve chamber on each cylinder, an inlet valve in each chamber, an exhaust valve in each chamber, stems on the exhaust valves extending parallel with the cylinders and disposed on opposite sides of the crank shaft, bearings on the cylinders for the valve stems, secondary shafts disposed parallel with the crank shaft, bearings on the cylinders for the inner ends of the secondary shafts, oppositely disposed bearings on one of the crank shaft bearings for the secondary shafts, a pinion on the crank shaft, and gear wheels on the secondary shafts meshing with the pinion.

898,907. Tire for Vehicle Wheels. Tod J. Mell, Youngstown, Ohio, assignor to The Republic Rubber Company, Youngstown, Ohio, a Corporation of Ohio. Filed May 25, 1908. Serial No. 434,915.

1. A tire for vehicle wheels provided with outwardly projecting circumferentially arranged elongated studs each having inwardly diverging walls, a flat outer surface, and a relatively large base, substantially as described.

898,920. Carburetter. George S. Pierson, Kalamazoo, Mich. Filed Oct. 7, 1907. Serial No. 396,228.

1. In a carburetter; the combination of a fuel reservoir; means for maintaining the fuel in said reservoir substantially at a constant level; a main air passage; a chamber or well opening upwardly into said air passage and depending into said reservoir; a fuel opening in the bottom of said well communicating with said reservoir; an air tube hanging in said well, said tube supplying air to the bottom of said well independently of said main air passage, said tube being adjustable to vary the space between its lower end and the bottom of said well for the purpose of regulating the discharge of mixed air and fuel through said space and upwardly through said well.

899,055. Speedometer. Joseph W. Jones, New York, N. Y. Filed Nov. 5, 1907. Serial No. 400,787.

1. In a speedometer, the combination with a shaft adapted to be driven by the mechanism or vehicle the speed of which is to be measured, of a device movable longitudinally on said shaft, means for imparting movement to said device proportionately to the speed of the shaft, means operated by said longitudinally movable device for indicating the extent of its longitudinal movement and thereby the speed at which said mechanism or vehicle is being operated, and means intermediate the said longitudinally movable device and the said indicating means adapted to adjustably operatively connect the same together; said indicating means comprising a shaft bearing an index or pointer; and said intermediate means comprising a slotted disc fast on said index shaft, a pin operatively connected with said disc in the slot thereof and also operatively connected with the said longitudinally movable device on the driven shaft, and means adapted to move said pin in said slot toward or away from the index shaft.

899,056. Non-Skidding Device for Wheels of Vehicles. Henry H. Kenshole, Ilford, England. Filed Jan. 8, 1907. Serial No. 351,384.

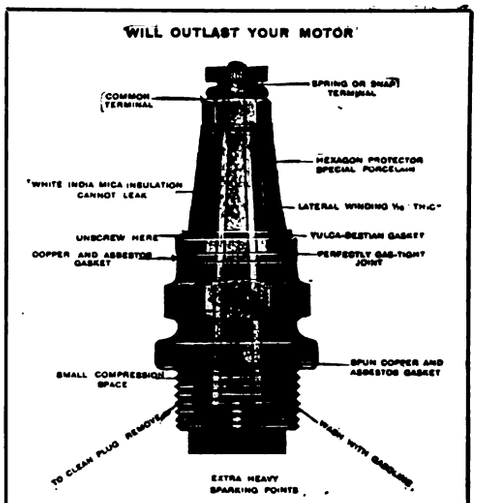
1. A non-skidding device for wheels of vehicles comprising a dummy wheel mounted alongside the vehicle wheel, means allowing of lateral motion of said vehicle wheel upon its axle, a rising and falling bearing carrying said dummy wheel, and automatic operating and connecting means between said bearing and said vehicle wheel to raise and lower said dummy wheel.

899,061. Vehicle Tire. Robert M. Merriman, Youngstown, Ohio. Filed March 13, 1907. Serial No. 362,167.

The herein described reinforcing cable for rubber tires, the said cable consisting of a plurality of metal and textile strands, the metal strands being twisted together and the textile strands being twisted and interwoven so as to completely cover the metal strands, the cable being saturated with a rubber cement which penetrates the textile strands so that when the cable is embedded and vulcanized in the tire the reinforcement and tire are practically inseparable from each other.

899,109. Carburetter. Frank H. Heitger, Indianapolis, Ind., assignor to Speed Changing Pulley Company, Indianapolis, Ind., a Corporation of Indiana. Filed May 16, 1906. Serial No. 317,162.

1. In a device of the class described, a reservoir containing a central vapor tube



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opening through its bottom and extending above its top, in combination with a suitable nozzle communicating with the reservoir and located in the lower part of said tube, a suitable cover or top for said reservoir through which said tube extends, a mixing chamber having an opening in its bottom and arranged above the top of the reservoir, said mixing chamber having a suitable outlet, and an automatic air admission valve arranged about the upper end of said vapor tube for closing the inlet opening in said mixing chamber, substantially as described.

899,126. Spare Tire Holder. Leo P. McKinney, Boston, Mass., assignor of one-half to John L. Snow, Boston, Mass. Filed Dec. 31, 1907. Serial No. 408,768.

1. A spare tire holder provided with a head having a tire engaging portion presenting a broad tire engaging surface, and means for securing the tire against said surface comprising a strap passing directly and completely around both the tire and said tire engaging portion.

899,139. Cushion Tire. John G. Smith, Wahoo, Neb. Filed March 18, 1907. Serial No. 352,898.

1. A cushion tire comprising a rim having a series of radially movable spring cushioned tread elements arranged thereabout in openings therein, and each comprising an outer approximately U shaped member with an inner reinforcing member secured thereto, and a plurality of spring pressed plungers secured at one end to each of said tread elements and operable at their other ends in said rim.

899,283. Power Transmission Device. Stead A. Asquith, Waterloo, Iowa. Filed July 27, 1907. Serial No. 385,855.

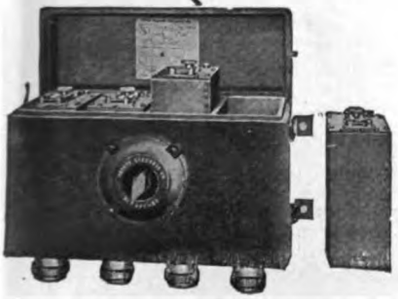
1. A device of the character described, comprising in combination, a rotatable driving shaft, a friction wheel mounted thereon, a rotatable driven shaft, a main friction disc slidably but non-rotatably mounted thereon, side friction disc rotatably mounted with their inner faces in juxtaposition to the circumferential bearing edges of both said friction wheel and main friction disc, and means for causing said side friction discs to bear equally upon the edges of said friction wheel and main friction disc.

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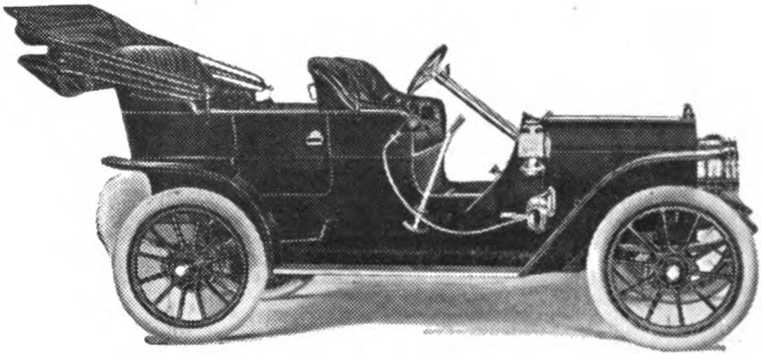
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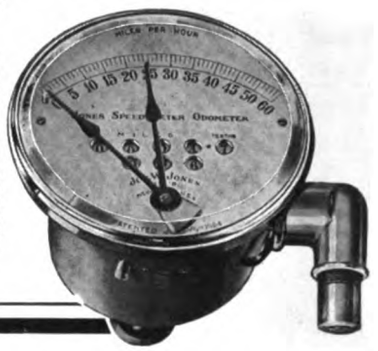
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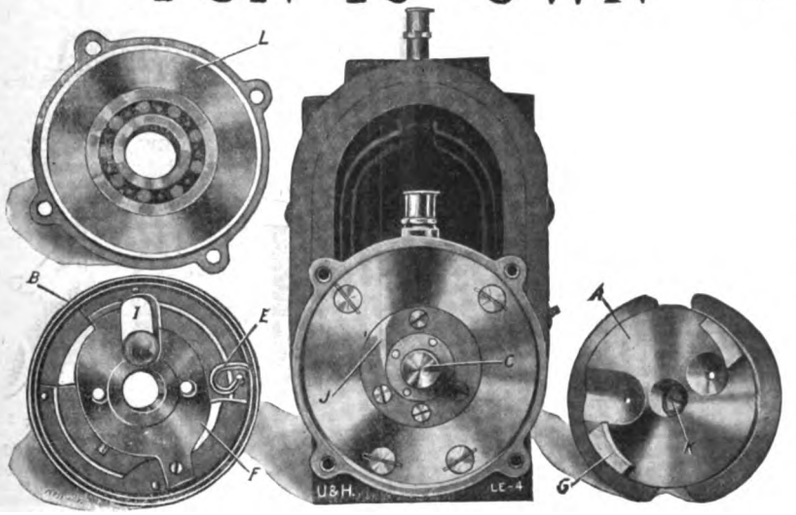
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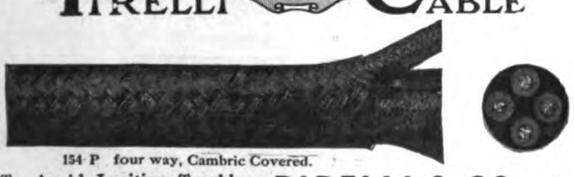
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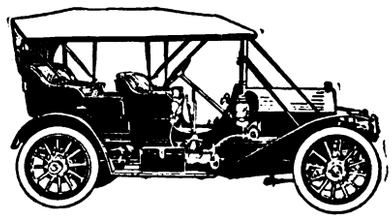
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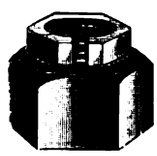
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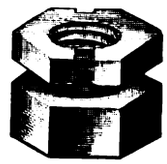
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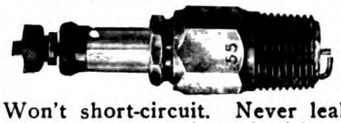
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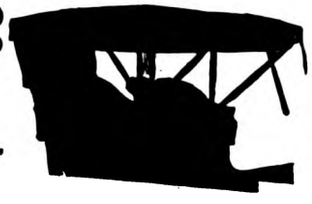
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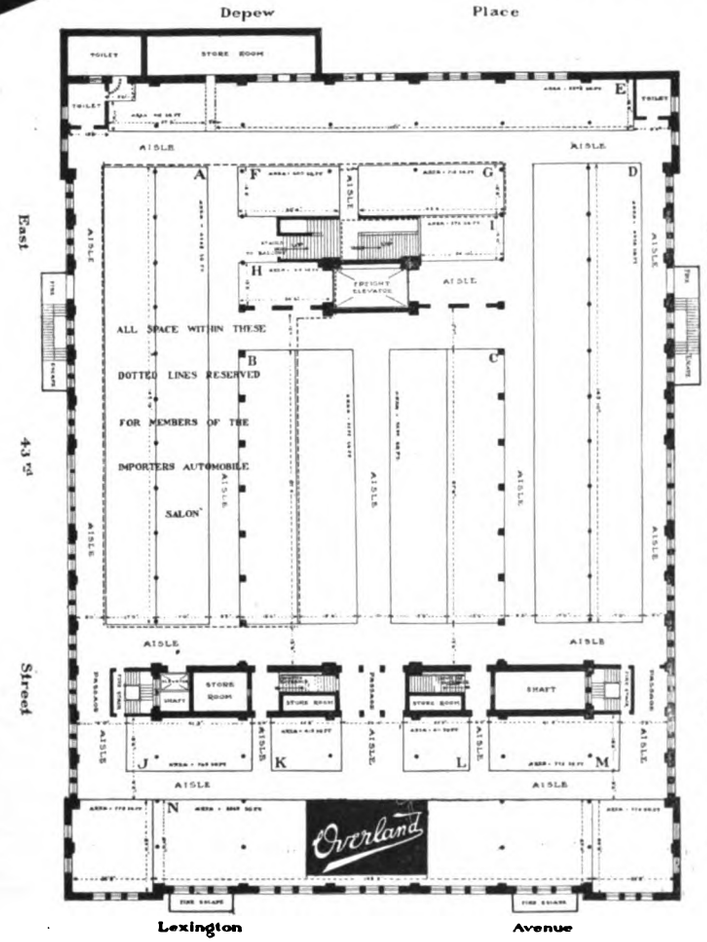
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Madison Square Garden

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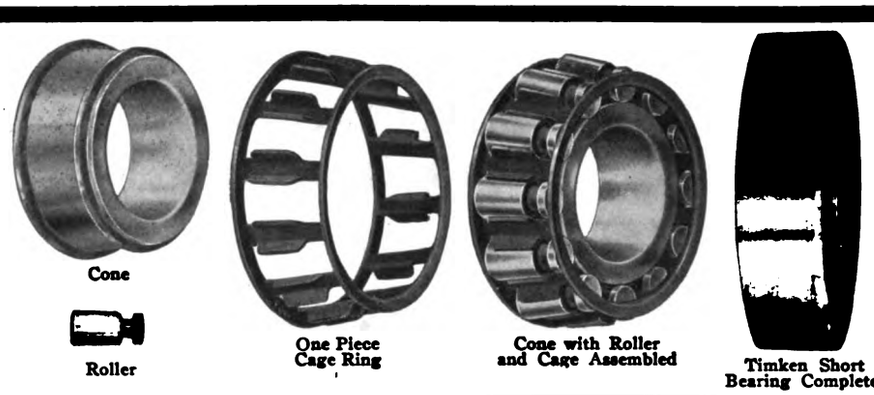
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The **New Series Short Bearings** are designed for use in axles where the bearings space does not permit the use of our regular series.

These Short Bearings can be used on any axle, transmission, or other places where Annular Bearings can be used. They carry **a much greater load** than Annular Bearings of the same length, **are smaller in diameter** and in addition will take as much **end thrust** as they do **radial load.**

Every bar of steel entering into **Timken** Products is made to the **Timken** analysis chemically—and tested to the **Timken** test physically—which means a rejection of **45 per cent.** of every ingot before metal of suitable density and soundness for **Timken** Roller Bearings can be obtained. These new Short Bearing Rollers are made from best nickel steel.

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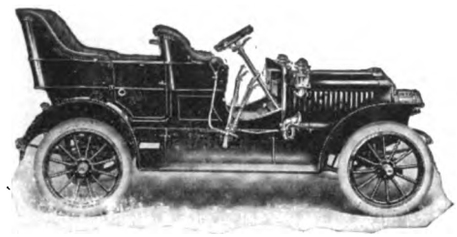
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The Car with the 5 Bearing Crank Shaft

Model D. A. 30 H. P. $1,750. One of the five Maxwell models.

You see them everywhere these Maxwells—the car with the brass band across the radiator.

What has caused this success, for surely 12,000 Maxwells running from Maine to California is indisputable proof of popularity. This season brings its quota of new makes—yet to be tried—but the Maxwell stands proved—stands squarely on its reputation of making good. Three factories representing one million and a half dollars worth of equipment will this year make 9,000 Maxwells.

NO OTHER CAR THAN THE MAXWELL COMBINES ALL THESE FEATURES IN A SINGLE DESIGN.

Thermo Syphon Cooling. No pump.
Unit Construction.
Three-Point Suspension.
Multiple Disc Clutch.
Shaft Drive.
Indestructible Metal Bodies.

These were originated in the Maxwell and have been an integral part of its construction since 1904.

I want to get in personal touch with you to recommend one of the five models which fits your case.

A postal will bring our catalogue. Send for it to-day —NOW.

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President.

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Composed entirely of rubber. Formed by the raised lettering "FIRESTONE NON-SKID" arranged obliquely across the tread surface.

Contains more angles, edges and points of road contact than any other non-skid.



Spaces in and between the letters cause a suction that grips the road and prevents slipping.

The wear-resisting quality of this tread is a revelation to motorists accustomed to the quick wearing down or tearing out of the ordinary non-slip devices.

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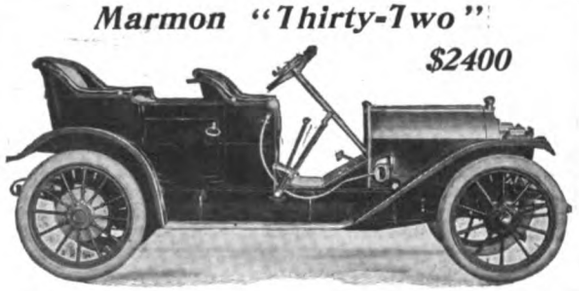
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"A Mechanical Masterpiece"





Marmon "Thirty-Two"
$2400



For The Man Who Doesn't Buy With His Eyes Shut

The Marmon "Thirty-two" is neither a cheaply-built car at a low price, nor a "good-enough" car at a high price.

It is a thoroughly high-grade car, carefully built and completely equipped, at a price which makes it the best real bargain of the year.

It is a car of whose character, appearance, and performance its owner may well be proud. It is a car that will live and can be depended upon. The Marmons of 1904 are still giving splendid service.

Equipment and Marmon construction considered, it urges a careful investigation by every buyer who is really economical.

Genuine Krupp and Chrome Nickel steels used in important parts. Bosch magneto and battery—dual system. Hess-Bright imported ball bearings. Weight (weigh it), 2,000 lbs. 32-40 H.P. Big tires (34x40 all around). Large brakes. Straight line shaft drive. Fully equipped. Touring car, Roadster, Suburban with removable rear seat, Coupe or Limousine Town Car.

TO DEALERS: This car is a winner. Your competitors will have to take off their hats to it.

The superb Marmon "Fifty" (with Seven-Passenger Body), $3,750.

Nordyke & Marmon Co. (Estab. 1851) Indianapolis, Ind.
Standard Mfrs. A. M. C. M. A.

(We will exhibit in New York only at Grand Central Palace Show, opening New Year's Eve.)

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A Franklin automobile made the only perfect score among fifteen entrants — all the others water-cooled — in the 210 Mile reliability run over the worst roads about Worcester, Mass., December 12. A blinding snowstorm increased the difficulties.

You think you know what a comfortable automobile is, but do you realize all that comfort means? Do you know what makes it?

Every Franklin automobile has four full-elliptic springs hung so that they take up road shocks from every direction, not merely up and down—very few road shocks are directly up and down. These springs have a "movement" of 5⅞ to 6½ inches. The ordinary half-elliptic spring can move only two or three inches before the frame bumps.

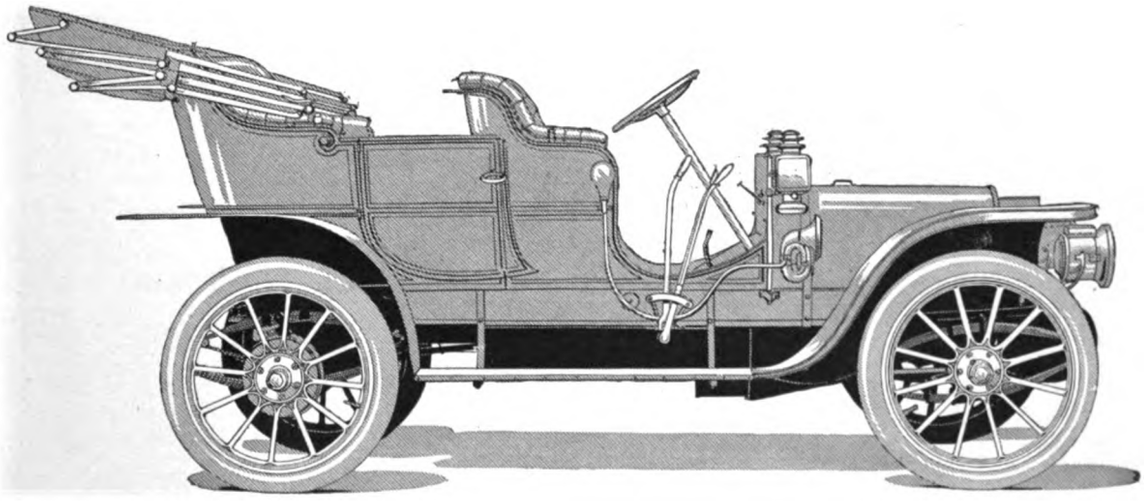
The Franklin laminated wood frame is a natural and scientific shock-absorber. It does not transmit shocks as a metal frame does. And every Franklin model has the largest wheels and tires in proportion to its weight. Large wheels help to make any vehicle ride easier. Everybody know that.

All this does away with jolting and jarring and vibration. It gives a luxurious riding-quality that you cannot get except in a Franklin automobile. And a light-weight automobile does not pound on the road.

Some makers of heavy automobiles declare that when their machines strike a bump in the road, they do not "bounce." This is probably true. Certainly the road does not give away to accommodate them. The question naturally arises: If the shock goes neither into the air nor the ground, where does it go? How much of it can possibly be absorbed by the steel frame and half-elliptic springs? How much is turned into a hard merciless "thump" and transmitted through the machine and to the passengers?

Ride in any heavy automobile over any road you choose.

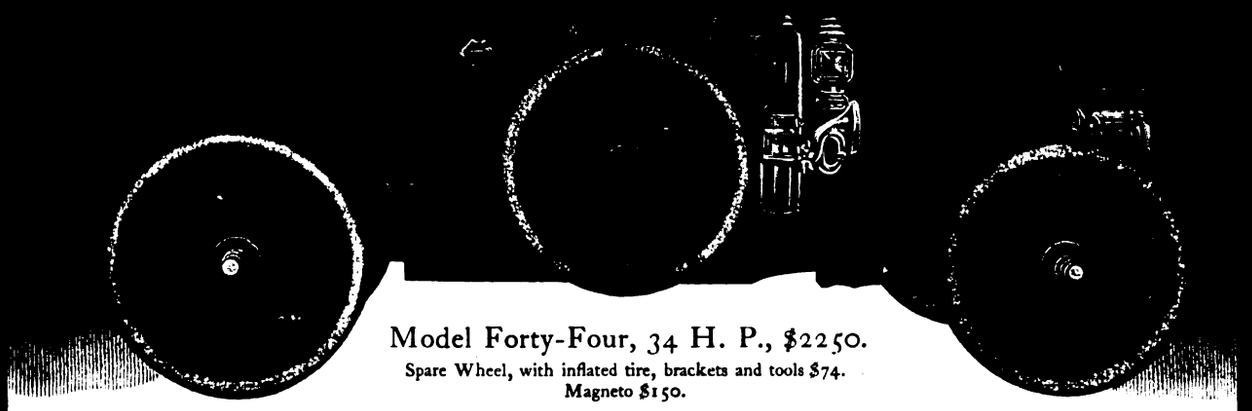
Then ride over the same road in a Franklin.



Franklin Model D five-passengers, 36-inch wheels, 106-inch wheel base. 2200 pounds. $2800. F.o.b. Syracuse. (Top extra.)

H H FRANKLIN MFG CO., Syracuse, N Y

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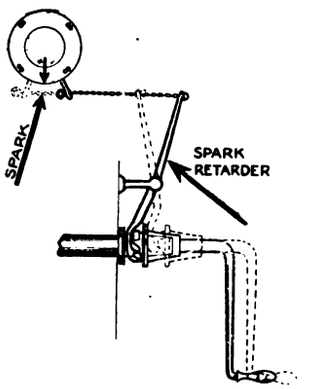


Model Forty-Four, 34 H. P., $2250.
Spare Wheel, with inflated tire, brackets and tools $74.
Magneto $150.

THE SAFETY SPARK RETARDER

There is absolutely no danger in cranking a Rambler when properly adjusted. The starting crank then cannot engage until the spark has been automatically retarded.

Every one who has had the unpleasant experience of a premature spark in starting an automobile will appreciate the Rambler safety starting device. This prevents an explosion ahead of center, even though the operator forgets to retard the spark.



You cannot engage the lug on the shaft with a tooth on the starting crank until the spark-retarder lever has moved from the position of the dotted line to the position shown, thus retarding the spark.

Rambler

The Car with the Offset Crank Shaft

Seven passenger model, forty-five horse power with offset crank shaft, $2500. Other models, $1150 to $2500. Write for catalog describing in detail Rambler offset crank shaft, Spare Wheel, straight line drive and other exclusive features of the new Rambler models.

THE CAR OF STEADY SERVICE

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Branches and Distributing Agencies:

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, December 24, 1908. No. 13

GENERAL MOTORS ASSUMES FORM

Olds and Buick Interests Form the Nucleus for New $12,500,000 Company—Par Value of Shares, One Dollar.

Despite numerous denials and considerable backing and filling, the General Motors Co., the much-rumored, mammoth, merger, holding company, is in being, having for its nucleus the Olds Motor Works of Lansing, and the Buick Motor Co., of Flint, Mich. The new company is incorporated under the laws of New Jersey and has a capitalization of $12,500,000, divided into $1 shares. While it has not yet come right out publicly and announced its existence and proposed program of operation, the stockholders of the Olds Motor Works have already been approached on the subject of trading in their Olds holdings for shares of the General company, on a basis which is calculated to occasion some surprise to those not familiar with the inside history of the affair.

Most surprising of all is the proposal that the Olds stockholders trade in their shares for 50 cents on the dollar so far as face values are concerned. For each share of Olds stock, the par value of which is $10, the new company is willing to exchange four shares of its preferred and one share of its common stock, the five shares together having $5 face value. Three-quarters of the total Olds stock is said to have been arranged for on this basis, and the scattered holders whose shares make up the remaining quarter are expected to see the light in due time.

The total capitalization of the new company is divided into $7,000,000 preferred stock, paying 7 per cent. cumulative dividends, and $5,500,000 common stock, each dollar representing a share. The division of the shares into such small financial units will make easy the distribution of a large portion of them to the general public in parcels to suit every purse. No town or hamlet will be so small but what its residents, through the local bank, can obtain some of the coveted stock, the fame of which will not suffer through any inadequate preparatory work.

As announced in the Motor World, the Buick and the Olds companies some time ago reached a most cordial understanding, even to the extent of the Buick company making the chassis for one of the Olds models, so that the confirmation of the rumors associating the two companies was not unexpected.

While the general facts concerning the enterprise are apparently widely known in Michigan and elsewhere, a great air of secrecy is still maintained at the office of the New York law firm having in charge the delicate task of launching it. In this work Attorney Curtis R. Hatheway is credited with much of the responsibility, he being an associate of Ward, Hayden & Satterlee, who have been mentioned prominently in connection with the previous merger flurries. When asked by the Motor World for the completed details he was more than cautious about even admitting the existence of the General Motors and declared that information concerning the participation of the Olds and Buick companies could not be given out "until the proper time."

Jackson Prepares to Produce Cars.

R. B. Jackson, formerly general manager of the E. R. Thomas Motor Co., of Buffalo, N. Y., has leased the factory in Detroit, Mich., formerly occupied by the Northern Motor Car Co., and is preparing to produce cars. As yet the plans in this connection are shrouded in some secrecy, but it is known that steps for the organization of a company have been practically completed. Quotations have been asked on power units and other parts, indicating that the output will be an assembled product.

Bosch Takes a New Building.

The Bosch Magneto Co., of New York, has moved to a new building at 223-225 west Forty-sixth street. The change was necessitated by increased business.

APPERSON CLINCHES HIS CLAIM

He Fortifies the Alleged Basic Patent on Multiple Ignition System—Will Now Assert His Rights.

An explanation developed this week as to why Elmer Apperson, of the Apperson Bros. Automobile Co., Kokomo, Ind., has not more vigorously asserted the strength of the alleged basic patent on multiple ignition for explosion engines which he purchased about two years ago and of which the Motor World gave a complete account at the time. Instead of weakening in his confidence as to the patent and its importance, Apperson has in the interim been further fortifying his position by taking out an additional patent of his own along the same lines, the latter patent being issued to him on the first of this month. Armed with the two, he proposes to notify all manufacturers, importers and dealers in the United States of the rights which he holds, and to prosecute those infringers who cannot otherwise be brought to a satisfactory adjustment.

The later patent is No. 905,625, filed July 3, 1906, and issued to Elmer Apperson on December 1, 1908, and dovetails with Patent No. 617,560, filed August 26, 1897, and granted to Ferdinand E. Canda, of New York, January 17, 1899, which Apperson bought on the advice of Thomas F. Sheridan, an eminent patent attorney. These patents cover broadly the use of two or more separate igniting devices provided with separate circuits with means for throwing the devices into or out of action simultaneously or independently, as well as covering the use of two or more spark plugs or sparking points having electrical connection with the magneto and battery with means for throwing the spark plugs or points into and out of operation.

It is claimed that the Apperson brothers were among the first in American to use what is termed the double independent sys-

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tem of ignition. After working some years to perfect this system, Elmer Apperson filed application for a patent, but it was found that the Canda patent interferred with it. As a result, Apperson bought the Canda patent to clear the way for his own, the two combining as a monopoly on this phase of automobile ignition.

The claims of the Canda Patent were given in full in these columns at the time of the purchase. Those of the Apperson patent just granted are as follows:

1. An explosion engine having a cylinder in which the explosion is adapted to ignite, a pair of spark plugs extending into the cylinder, a magneto, electrical connections from the magneto to one of the spark plugs, a battery, separate electrical connections from the battery to the second spark plug, and a switch for throwing the spark plugs into and out of operation.

2. An explosion engine having a cylinder in which the explosive is adapted to ignite, a pair of spark plugs extending into the cylinder, one of said spark plugs having a fixed spark gap, a magneto electrically connected with one of the spark plugs, a battery electrically connected with the other spark plug, a periodic circuit interrupter in the connection to the spark plug having the fixed gap, and means to control the connections to the spark plugs.

3. An explosion engine having an explosion chamber with two spark plugs therein, a magneto electrically connected with one spark plug, a battery electrically connected with the other spark plug, adjustable timers in the respective circuits, and means for adjusting the timers similarly and simultaneously.

4. An explosion engine having a cylinder in which the explosive is adapted to ignite, a pair of permanent spark gaps within said cylinder, a magneto electrically connected to the terminals of one spark gap, a battery electrically connected to the terminals of the other spark gap, and circuit interrupting device in each of said connections.

5. An explosion engine having a cylinder in which the explosive is adapted to ignite, a pair of spark plugs extending into the cylinder, a magneto in circuit with one of said spark plugs, an induction coil having its secondary in circuit with the other spark plug, and a battery in circuit with the primary of said induction coil.

Commercial Motor in Receiver's Hands.

The Commercial Motor Truck Co., of Plymouth, O., has been put into the hands of a receiver by the common pleas court of Richland county. The action was brought by the J. D. Fate Co., also of Plymouth, creditor for about $5,500 in borrowed money. The liabilities are estimated at over $30,000, while the assets are still in doubt. The concern has recently been negotiating with Norwalk, O., and other towns, looking to a change of location if sufficient inducements were offered. A. M. Trago, a Plymouth banker, was appointed the receiver.

BUICK ATTACKS THE INDUSTRY

In Ostensible Appeal for Lower Tariff They Make Radical Assertions—"Ridiculous-Bad Management" One of Them.

In lime-light distinction from the body of American automobile manufacturers, W. C. Durant, general manager of the Buick Motor Co., appeared before the ways and means committee at Washington, on the 19th inst., and said that the import duty on automobiles should be reduced from 45 per cent. to 20 per cent., while the duty on parts should be raised to 50 per cent. He disclaimed against the "enormous profits and the ridiculously bad management" which the present rate of duty fosters, according to his view, and labored with the committee long and earnestly to persuade it that the reductions he asked for should be made.

Some sharp colloquies took place between members of the committee and the would-be tariff reducer, in which he was more or less roughly handled. When he began pressing the committee for concurrence with his opinions, he developed an outburst from Chairman Payne.

"Oh, so far as your argument about this excessive protection is concerned," said Mr. Payne, "the committee is convinced that the 20 per cent. you ask would be sufficient. But can't you give us figures as to what the effect of this reduction would be on the revenues of the Government? We are looking for articles that will be fit subjects for a high duty to counteract the annual deficiencies."

"I don't think it is right," replied the witness, "to make us come here and testify our sources of income out of our pockets."

"We didn't ask you to come," said Mr. Payne. "We said we would be glad to hear you. What we want is facts, and we don't seem to be getting them."

A question from Mr. Boutell drew forth an answer that came as a great relief to the protectionists on the committee. By a reference to former testimony on this schedule, Mr. Boutell said it was apparent that the Buick company was preparing to start a factory abroad. His direct question on the subject failed to elicit a direct response. He pursued his inquiries, with the following result, as given by the official record:

Mr. Boutell—I asked if it was the intention of the Buick Motor Co. or parties in interest in it to build an automobile factory in Europe?

Mr. Durant—At this moment I could not answer that question, yes or no.

Mr. Boutell—There is no use fencing with the committee. If you do not want to state you need not, but it was stated here by your attorney that it was contemplating building a factory in Europe. That may explain what would otherwise be unintelligible, why you wanted a reduction in the duty, and I simply asked you, as the general manager, whether that was true. With the reduction in the duty, and the difference between the ocean rates and the railroad rates it would be apparent that there was a very good business reason for your advocating a lower duty.

Mr. Durant—It would not be likely that we would want to destroy our own home trade by reducing the tariff to permit of our manufacturing abroad, where we have no special interest.

Mr. Boutell—But that is not answering the question, whether you expect to begin manufacturing abroad or not.

Mr. Durant—No, sir.

The Chairman—We have heard the gentleman for half an hour; we have not been able, in the last five minutes, to get any facts out of him. He approves of the statement of Mr. Joy, so far as the facts are concerned. I do not know why we should lose any more time Saturday afternoon, and therefore we will excuse you, if you will allow us to. (Laughter.)

Mason Motor to Reorganize.

Re-organization of the Mason Motor Car Co., of Des Moines, Iowa, will soon be effected, together with an increase in the capitalization from $50,000 to $250,000. The change will alter the name of the concern to the Mason Automobile Co., and A. B. Shriver, a Winterset banker, will probably be made president, E. R. Mason will give his entire attention to the sales management while F. S. Dusenberg will have charge of the manufacturing end.

Banks Bid in the Dolson Plant.

The sale of the property of the bankrupt Dolson Automobile Co., of Charlotte, Mich., on the 14th inst., was of doubtful success. Some complete cars were disposed of to one bidder, while another took some of the parts and junk, but three of the local banks bid in the plant and other property to protect their loans, as cash customers were lacking. It is estimated that ultimately the Dolson creditors will get about 15 per cent.

Coats to Manage Lexington Company.

Fred N. Coats, of Dayton, O., has been selected as general manager and secretary of the newly incorporated Lexington Motor Car Co., which is shortly to begin the manufacture of cars in Lexington, Ky. For over two years he has been assistant sales manager of the Dayton Motor Car Co., of Dayton.

Packard Elects Walton General Manager.

At a recent meeting of the Packard Motor Car Co., Detroit, Mich., the following officers were elected: H. B. Joy, president; R. A. Alger, vice-president; Philip McMullen, treasurer; S. D. Waldon, general manager. The promotion of Mr. Waldon from sales manager to general manager is very gratifying to his many friends.

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WHY HE FAVORS REDUCED TARIFF

Durant's Contrary Attitude Causes Discussion—"Spite Work" and Shrewd Campaign Among Allegations.

Although it has been stated that his appearance before the Ways and Means Committee at Washington to urge a reduction in the tariff on automobiles is due to intention to establish a factory abroad, this is not the generally accepted reason for the attitude assumed by W. C. Durant, the directing head of the Buick Motor Co.—an attitude which directly is at variance with the practically unanimous sentiment of the remainder of the trade and opposed to the fact that Durant himself has advanced the list price of at least one of his models.

"Spite work" is the opinion expressed by a number of those who know him. "A play for gratuitous advertising" is the belief held by others who know him better. "An effort to pave the way for the unloading of the General Motors Co.'s $1 shares on the dear public" is a third explanation that has been advanced.

Those who hold the "spite work" opinion ground it on the bad standing of the Buick Motor Co. in the Association of Licensed Automobile Manufacturers due to its failure to meet its obligations and pay its royalties for nine months or more and which has caused the doors of both of the New York shows to be closed to Durant's concern.

"Personally, I do not believe that Durant at heart either wants or believes that the tariff will be reduced," is the way one man in the trade voiced his views. "He simply is trying to 'get even' with the A. L. A. M. by endeavoring to hurt its members by increasing the volume of competition from abroad and is so fixed in his determination to do so that apparently he doesn't care who else he hurts."

Durant's reasons for refusing to meet the Buick obligations to the Association is one of the things that has been difficult of understanding as it is a matter of general belief that no other concern has profited so greatly from membership. As Buick is one of the very few members who produces a cheap car, the exclusive agency policy of the A. L. A. M. has assisted in getting it a reputation and to "simply walk into business," as it once was expressed.

"Durant's refusal to live up to his contract is purely a matter of cold blooded deliberation," remarked a man of prominence in discussing the subject. "Apparently he believes that he has obtained from the A. L. A. M. all that he can obtain and now figures that if the Selden license is not sustained by the court he will be ahead the amount of his company's default, while if it is upheld all he will be obliged to pay will be the amount of royalty exacted from all other manufacturers based on the figures now exacted and which his company contracted to pay, but has not paid."

"But has not the Buick company rendered itself liable for breach of contract?" was asked.

"Undoubtedly. But Durant already has been hit upon his defense. He will allege that the A. L. A. M. has not done all that it agreed to do and that therefore he was induced to become a member by misrepresentation."

Whether the fact that Buick became a member not by direct election, but by purchase of the license of a retiring member—the Pope-Robinson company—has a bearing on the subject remains to be seen.

"Bless your soul," laughingly exclaimed another man when Durant's appearance at Washington in the role of tariff reducer was mentioned. "Are not you people in the newspaper business 'onto' Durant's game? He simply is 'working' all of you, daily papers and weekly ones. He believes in advertising, but not in paying for it. He doesn't even believe in hiring a press agent. He considers that he is his own best press agent. 'Do something spectacular and the —— — —— will be forced to notice you,' is the remark I've heard attributed to him several times. I am told that before one of the recent big road races Durant told some of his intimates that he would show them how to do it. At any rate after the finish of this race, which his car did not win, he made a spectacular display of his roll and peeling off $500, he presented it to his driver in front of the press stand. The Associated Press and some of the automobile papers 'fell' for the grandstand play and scattered news of it broadcast. 'Didn't I tell you I'd make the —— — —— notice me?' Durant is said to have exultantly remarked to his intimates a few days later. Durant is a mighty shrewd man and to my way of thinking, in apparently opposing the practically united trade by appearing before the tariff committee at Washington he merely is doing the spectacular and getting a lot of free advertising at the newspapers' expense. Any time he buys advertising space, it is well to look behind it."

That his tariff attitude is part of the game to help sell the stock of the General Motors Co., which he engineered, is not so evident, but there are those who, nevertheless, believe such to be the case.

They point out that Durant is no stranger to stock market operations. For some time he maintained an office in New York in the Wall Street district. The fact that the General Motors stock is to be offered in $1 shares indicates plainly that they are for public consumption and those who hold the stock market view of Durant's attitude point out that anything which serves to impress the name Buick on the public mind will serve to further the sale of the merger's stock; for Buick has enjoyed a prosperous year and will be able to make a tempting showing in any prospectus which may be issued. These people argue that the establishment of a great chain of Buick branches including the big cities and almost innumerable small ones where the prospect of enduring profit would seem doubtful is but another move in the shrewd campaign to sell the General Motors stock. During the past year Buick, they say, has made a specialty of courting the favor of small banks. The company has borrowed freely, and though it may have defaulted payment of Selden royalty, it has promptly met all banking obligations and thus become a desirable credit. Its paper is in demand by the small banks and the report is current that from some source or other they have been confidentially tipped off that they will be wise if they get in early and avoid the rush for General Motors stock. As a result, it is said that more than a few country bankers have visited Buick headquarters and that the knots in the strings of their dough bags have been considerably loosened in order to promote quick action at the proper moment. In sequence, the greater the number of Buick branches the greater the number of small banks in which Buick money will be deposited and the greater the radius of Buick influence and the wider the market for General Motors shares.

Cuba a Market for American Cars.

According to William Mitchell Lewis, president of the Mitchell Motor Car Co., who has just returned from a brief trip to Cuba, the market for American motor cars of medium price may be expected to develop a very decided increase in that quarter within the next few months. He even predicts that during the coming year over 50 per cent. of the cars shipped to Cuba will be of American manufacture, whereas in the importations of the past they have not exceeded 10 per cent. of the total number. The old condition of things was largely due to a lack of American agencies in Havana. James W. Gilson, sales manager of the Mitchell company who accompanied Mr. Lewis was even stronger in announcing his convictions of the Cuban possibility.

"Cuba affords one of the best fields for the medium-priced American car," he said. "The tobacco and sugar planters are coming into their own again, and they are willing to spend money. The Cuban roads are on a par with our best boulevards, but the planters have been using horses to ride from their plantations to their homes. Their use of the horse for pleasure purposes will be a thing of the past in a few years.

Enlarging New Process Factory.

After two months of night work in its plant, the New Process Raw Hide Co., of Syracuse, N. Y., has contracted for an extensive addition to its factory. The building, which will be of steel, brick and cement, will consist of two stories and a basement, yielding 13,000 square feet more floor space.

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The Week's Incorporations.

Steubenville, O.—Automobile and Motor Boat Co., under Ohio laws, with $10,000 capital.

Detroit, Mich.—Crescent Motor Co., The, under Michigan laws. Increase of capital from $55,000 to $125,000.

Billings, Mont.—Public Motor Co., under Montana laws, with $30,000 capital. Corporators—J. C. West, et al.

Cleveland, O.—Lake Avenue Automobile Co., under Ohio laws, with $30,000 capital. Corporators—Edward J. Hobday et al.

Janesville, Wis.—Pierson Garage Co., under Wisconsin laws, with $1,000 capital. Corporators—Roy Pierson, N. L. Carle and A. L. Avery.

New York City, N. Y.—Club Taxi Co., under New York laws, with $1,000 capital. Corporators—T. Hopkins, E. L. Mooney and J. J. Robinson.

New York City, N. Y.—Monarch Storage Battery Co., The, under New York laws, with $50,000 capital. Corporators—A. D. Thornburn, R. B. Hopkins, New York; R. W. Phelps, Buffalo.

Aurora, Ill.—Bell Carburetor Co., under Illinois laws, with $12,000 capital. Corporators—Henry H. Evans, Edward R. Conklin, and Charles E. Bell.

Oshkosh, Wis.—F. S. Hoaglin Auto Co., The, under Wisconsin laws, with $10,000 capital. Corporators—F. S. Hoaglin, A. E. Badger and L. O. Chase.

La Junta, Colo.—La Junta Automobile Co., under Colorado laws, with $10,000 capital. Corporators—R. S. Anderson, George H. Little, and Katie Posz.

Oklahoma City, Okla.—Fritz Brothers Auto Co., under Oklahoma laws, with $40,000 capital. Corporators—C. D. Fritz, E. J. Fritz and R. W. Yantis.

Greensboro, N. C.—Atlantic Motor Co., under North Carolina laws, with $25,000 capital. Corporators—H. L. Hopkins, L. B. Hopkins and Thos. S. Beall.

Paterson, N. J.—Ford Automobile Co., under New Jersey laws, with $10,000 capital. Corporators—Robert W. Bates, Geo. M. Dorwart, Jacob Vanderclock.

Salem, Mass.—Auto Lighter & Equipment, under Massachusetts laws, with $100,000 capital; to deal in automobiles. Treasurer, A. L. Messer, Salem, Mass.

Lexington, Ky.—Lexington Motor Car under Kentucky laws, with $50,000 capital. Corporators—Kinzea Stone, F. F. Bryan, John Osborne, J. P. Jackson, et al.

Milwaukee, Wis.—Monarch Motor Co., The, under Wisconsin laws, with $20,000 capital. Corporators—John Godfrey, William W. Welch, and Inez N. Welch.

Belfast, Me.—Read Garage & Machine Co., under Maine laws, with $10,000 capital. Corporators—C. E. Read, president; H. Chenery, treasurer; and R. I. Morse.

Brooklyn, N. Y.—Plaza Garage Co., The, under New York laws, with $5,000 capital. Corporators—Justin Bloch, Edgar Bloch and Alexander Clement, of Brooklyn.

Minneapolis, Minn.—Brown Emergency Tire Co., under Minnesota laws, with $100,000 capital. Corporators—Henry W. Nath, Lewis N. Klove and Theodore H. Brown.

Cleveland, O.—Western Reserve Motor Car Co., under Ohio laws, with $50,000 capital. Corporators—J. H. Price, R. B. Cason, G. L. Ginther, E. T. Smith and C. H. Bunde.

Cleveland, O.—Citizens Taxicab Co., under Ohio laws, with $50,000 capital. Corporators—Francis J. Wallace, J. Carr Brown, Frank L. Smith, George H. Jackman, et al.

Portland Me.—F. & D. Manufacturing Co., under Maine laws, with $400,000 capital; general automobile business. Corporators—C. E. Eaton, president; T. L. Croteau, treasurer.

Wilmington, Del.—Morgan Motor Car Co., under Delaware laws, with $500,000 capital. Corporators—E. L. Squire, K. M. Byrne and J. A. Byrne, of Wilmington, incorporating agents.

Rockford, Ill.—Standard Auto Co. of Rockford, under Illinois laws, with $10,000 capital; to deal in and repair automobiles. Corporators—S. O. Widell, John Wester and S. Leon.

Charlotte, N. C.—Mecklenburg Auto Repair Co., under North Carolina laws, with $5,000 capital authorized and $1,000 subscribed. Corporators—L. E. Davis, G. W. Webb and E. T. James.

Trenton, N. J.—Sharp Arrow Automobile Co., under New Jersey laws, with $125,000 capital; to manufacture automobiles. Corporators—William H. Sharp, Job R. Farlee, and Fred W. Bennett.

Brooklyn, N. Y.—Prospect Heights Motor Co., under New York laws, with $25,000 capital; to manufacture and deal in automobiles. Corporators—R. L. Kelly, T. F. Reilly and L. C. Howard.

Summit, N. J.—Summit Motor Car Co., under New Jersey laws, with $5,000 capital; to manufacture automobiles, bicycles and supplies. Corporators—Howard I. Day, Rosalie Nelson, Harry Baldwin.

Far Rockaway, L. I.—Savoy Auto and Taximeter Cab Co., The, under New York laws, with $30,000 capital. Corporators—Max Katz, L. T. Walter, Jr., Frederick Fitter, Robert Smith and A. W. Fitter.

New York City, N. Y.—Eureka Taximeter Cab Co., under New York laws, with $25,000 capital; to manufacture, deal in, and rent automobiles. Corporators—H. M. Browne, F. W. Mills and E. J. Forhan.

Joliet, Ill.—Van Guard Manufacturing Co., under Illinois laws, with $25,000 capital; to deal in and manufacture automobiles and general machinery. Corporators—Charles F. Jensen, Edward W. Steinhart and Nathaniel L. Hurd.

In the Retail World.

The Knox Automobile Co. has leased a new three-story building at 1458 Michigan avenue, Chicago, Ill. The contract specifies a five-year term.

The Strong Automobile Co., 109-111 East Walnut street, Des Moines, Iowa, will move to the west side of the river after January 1. The exact location has not been determined.

D. G. Meter, of Milwaukee, Wis., has leased the former Elite Stables on South Washington street, Green Bay, and opened a garage. He handles the local Reo business for that territory.

Fire in the garage of the C. M. Automobile Livery, 5 Park Row, Chicago, Ill., on December 17, destroyed five automobile. The loss, including damage to adjacent property was estimated at $10,500.

J. M. Skinner, of Lansing, Mich., has organized the Standard Auto Co., and will open a garage in the old Bijou building on Ottawaa street about February . He has secured the agency for the Oakland cars.

The Anderson Vehicle Co., Fond du Lac, Wis., purposes the erection of a 30x105 foot garage in connection with its present office and store building on West Second street. The plans call for a $20,000 outlay.

Rolvin S. Whitney, of Brunswick, has purchased from James W. Skene his garage at 88 Bates street, Lewiston, Me. Skene, who has held the business for over eight years, was the first automobile dealer in the State.

Harshberger & Jantze have rented the east room of the building occupied by Perry Bradley as a blacksmith shop in Seward, Neb., and will open a garage shortly. The firm was formerly in the automobile business at Aurora.

The Boston Branch of the Locomobile Co. of America has removed from its former location at 400 Newbury street to its new quarters at 589 Boylston street. The new location is within the exclusive precincts of Copley Square.

Harry C. Bacon, formerly with a local agency, has become identified with Mason B. Hatch, 729 Main street, Buffalo, N. Y. The latter is distributor of the Chalmers-Detroit cars for western New York and northern Pennsylvania.

Harry Corson, formerly with the E. R. Clark Automobile Co., Springfield, Mass., has taken the local Ford agency which was given up by the Norcross-Cameron Co. He is located in the garage on Winchester Square, formerly occupied by the Stowe & Coffer Automobile Co.

The S. H. Petersen Automobile Co., formerly located at 2253 Cottage Grove avenue, Chicago, have recently moved into the heart of the automobile district in that city and opened new quarters at 1229 Michigan avenue. Their representation is the Waverley electric and Gyroscope gasolene lines.

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ANOTHER BLOW AT PRICE CUTTING

Weed Gets Second Court Decision Sustaining Right to Fix Quotations—How Patents and Copyrights Differ.

Another victory has been won by the Weed Chain Tire Grip Co., of New York, in its campaign to establish the right of manufacturers of patented articles to control the prices at which their products may be sold. The action was against the E. J. Willis Co., of New York, and has so far resulted successfully despite the recent decision in the so-called "Bobbs-Merrill Copyright Case" which has been hailed by price cutters as being a complete knock-out to the control of retail prices by manufacturers.

Having taken no lesson from the results of the successful Weed suit against the Times Square Automobile Co., of New York, for selling Weed chains at prices lower than those designated on the containing bags and on the metal tags attached to the chains themselves, the Willis company since that time and since the decision in the Bobbs-Merrill case, was found selling the Weed grips at cut prices. Upon notice it declined to desist, and when brought to task in the courts did not deny the practice, but asserted in defense that the chains were bought in the open market from others than the Weed company, and, further, that the Supreme Court of the United States, in the Bobbs-Merrill case, had held that the copyright law is not broad enough to protect the retail price designated in the conditional sales notice printed in a copyrighted book, the Willis attorney advancing the hypothesis that the retail price on patented articles could not be maintained in the face of this decision.

The difference between patented and copyrighted articles, however, was made plain by a quotation from the United States Supreme Court in the case of Bement & Son vs. National Harrow Co., as follows:

"The very object of these laws (the patent laws of the United States) is monopoly, and the rule is, with a few exceptions, that any conditions which are not in their very nature illegal with regard to this kind of property, imposed by the patentee and agreed to by the licensee for the right to manufacture or use or sell the article, will be upheld by the courts. The fact that the conditions in the contracts keep up the monopoly or fixed prices does not render them illegal." . . . . "The provision in regard to the price at which the licensee would sell the article manufactured under the license was also an appropriate and reasonable condition. It tended to keep up the price of the implements manufactured and sold, but that was only recognizing the nature of the property dealt in, and providing for its value as far as possible. This the parties were legally entitled to do. The owner of a patented article can, of course, charge such price as he may choose, and the owner of a patent may assign it or sell the right to manufacture and sell the article patented upon the condition that the assignee shall charge a certain amount for such article."

Although Judge Coxe, of the United States Court of Appeals of the Second Circuit of New York, was one of the judges before whom the Bobbs-Merrill case came in its progress when it was decided that the copyright law was not broad enough to protect the retail prices on copyrighted books, in the case against the Willis company he declared for the plaintiffs, stating that he felt "constrained to follow this (Weed vs. Times Square Co.) decision," and granting a motion on November 20 for a preliminary injunction.

Odd Cause of a Garage Fire.

That a gasolene can in bad condition is a very dangerous affair and that an iron stove in the vicinity is equally hazardous when it contains live coals, was demonstrated on Sunday last, 20th inst., when a bad fire occurred at Brighton, Mass. Two frame buildings and their contents, among them nine automobiles, were destroyed by flames and an explosion, and adjacent property damaged, as a result of a mishap which happened when Harry Gavel was carrying gasolene through his frame garage on Beacon stret. It seems that while walking past the stove, the handle on the 5 gallon tank broke off, causing the tank to drop to the floor and splash the gasolene. The building was instantly in flames and Gavel, who endeavored to get some of the cars out of the place, was badly burned. His stock of four automobiles was totally destroyed.

The damage to property owned by various persons, was estimated at $25,000, which points out a moral regarding open grate stoves in frame garages.

Louisville Prepares for a Show.

To hold an automobile show in Louisville, Ky., the dealers have organized themselves into the Louisville Automobile Dealers Association, with a complete paraphernalia of constitution and by-laws. Prince Wells has been chosen president; E. G. Reimers, vice-president, and Hubert Levy, secretary-treasurer. The show will be held April 15, 16 and 17, in the Coliseum.

Rambler Manager for Cleveland.

George Patterson has been selected to manage the branch of Thomas B. Jeffery & Co., in Cleveland, O. For the present the Rambler headquarters will be at 2158 E. Ninth street, but will probably be located on Euclid avenue a little later.

Death of President A. W. Tobin.

A. W. Tobin, president of the Continental Motor Co., of Muskegon, Mich., died in Chicago on the 13th inst. His death was caused by quick pneumonia.

NEW POPE COMPANY ORGANIZES

Directors Elect Board of Officers Headed by Albert L. Pope—Creditors of Old Company Paid in Full.

Final transfer of the property, business and assets of the old Pope Mfg. Co. to the reorganized company took place on Wednesday, the 23d inst., on which date checks for a final payment with interest at 6 per cent. were also sent to all the creditors having approved claims against the old company. The order for the transfer was received from the New Jersey court the day before. At a meeting of the directors of the new company, held in New York City late last week, the officers were chosen, with Albert L. Pope as president; Charles E. Walker, vice-president; Colonel George Pope, treasurer; Wilbur C. Walker, secretary, and Ezra M. Cutting, assistant treasurer. Harry Bronner was elected chairman of the board of directors and the firm of Joline, Larkin & Rathbone made general counsel.

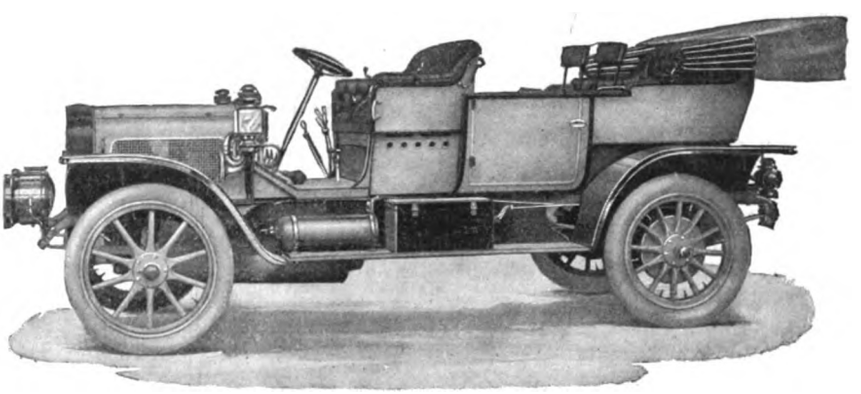
The payment of the creditors' claims with interest for the period of delay marks a triumph for the receivers, Albert L. Pope and George A. Yule, in completely carrying out the task that they set for themselves when the duties of straightening out the old company's affairs devolved upon them. The reorganized company, with its manufacturing concentrated at Hartford, Conn., and Westfield, Mass., is in a position to go forward on the most successful lines, the prosperity and future of the concern having been well conserved during the receivership. The new Pope Mfg. Co. thus takes up its career enjoying the most favorable regard of the trade and with its factories more than busy on production for which markets have been assured by enterprising preparation.

Non-Freezing Mixtures that are Taxable.

Dealers preparing a stock of "non-freezing mixture" for the use of their customers have reason to be careful both as to the quantity and the constituents of the compound, as otherwise they are likely to come into contact with the United States government internal revenue officers. The commissioner of internal revenue at Washington, has just rendered a decision to the effect that a special government tax must be paid by dealers or garage proprietors who keep on hand for sale any "non-freezing mixture" which contains even so much as 30 per cent. alcohol. The commissioner, if he knows it, will not permit dealers in automobile supplies to put on the market any new, intoxicating drink which as "non-freezing mixture," might find popularity with thirsty chauffeurs in prohibition States. The decision was given at the request of the collector at Boston.

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THE
MODEL "M" WHITE STEAMER
Is The Most Luxurious Car On The Market



The luxury of the White Steamer is unequalled by any other machine. There is no car, however expensive, which has better upholstery, better springs or better finish. Owing to the compactness of the mechanism, the body is much more commodious than in any car of similar wheelbase, (122 inches). Few other makes have such a liberal tire equipment (36 x 4 on the front wheels and 36 x 5 on the rear wheels.)

The luxury of any car, however, depends largely upon its riding qualities and here the White is "in a class by itself." It is the only car where starting and changes of speed can be effected without jerks or jolts. It is the only car which runs noiselessly under all conditions. It is the only car which is free from vibration, because it is the only car where the power is applied evenly and continuously, and not spasmodically.

Just as our Model "M," priced at $4,000, is the most desirable of the higher-priced cars, so our Model "O," at $2,000 predominates among moderate priced machines.

Write for descriptive matter.

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CLEVELAND, OHIO

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PHILADELPHIA, 629-33 N. Broad St.
PITTSBURG, 138-48 Beatty St.
CLEVELAND, 407 Rockwell Ave.
CHICAGO, 240 Michigan Ave.
SAN FRANCISCO, Market St. at Van Ness Ave.
ATLANTA, 120-122 Marietta St.

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" . . . . By the way, I like the Motor World. It gives the kind of stuff the dealer wants to know, and you ought to hold your own long after the general public stops reading automobile papers."
NEW YORK SPORTING GOODS CO.,
James E. Murray, Secretary.

The New York Show Numbers of the Motor World will bear dates of December 31st, January 7th, 14th and 21st, respectively. The first two will interestingly and comprehensively forecast and describe the exhibition of American Motor Car Manufacturers Association, and the other two do similar duty for the show of the Licensed Association of Automobile Manufacturers. As usual, the Motor World's reports of both shows will deal with goods actually exhibited and will not comprise mere trade puffs or extracts from catalogs written weeks before the doors of the exhibition halls are opened.

About Attendants at the Shows.

As the show season approaches it is well to voice a plea on behalf of the show visitor, be he the casual and curious lounger, the potential customer or the minor tradesman seeking information which is of personal interest to him. It is a sad part of show history—perhaps an indispensible part—that not a few of those who are placed in charge of exhibits frequently display a blend of indifference and ignorance concerning the wares of which they are in charge at once discouraging and disheartening to encounter. Indeed so great has been the evil in former years that it has excited repeated comment during the show season and afterwards. Because there is a reason for the poor attention shown to many visitors, however, and because there is a remedy for it, it is regrettable that the evil should be permitted to continue.

Indifferent stand attendants may be divided into two classes. The eager and ignorant class, who are obviously taken on only for the show and have not been sufficiently trained in their line, and the experienced but lofty and preoccupied men, who are too busy with their own affairs to attend properly to the wants of the stranger.

It should be added that as the shows draw to a close and all who form a part of their human element are thoroughly wearied of the continual clamor and din, the familiar air of abstraction and the uninterested shake of the head in response to an inquiry are more or less to be expected, for stand attendants are much badgered with foolish questions in the course of the week, and become thoroughly accustomed to false alarms in the way of prospects. But during the earlier portions of the shows, there is no excuse for rendering anything but the best of treatment to intelligent and courteous visitors, and any breach of courtesy or lack of information on the part of the exhibitor may be regarded justly as an affront, for as a practical man the attendant must be willing ever to exploit his wares to the full and on the slightest and most frequently repeated provocation.

Of the ignorant attendant, this much is to be said, that he frequently performs to the best of his ability. Yet that is not always all that is required. Frequently the man who knows too little, tells too much, and when after hesitating about applying to certain busy heads for particulars about the product he applies to the ever-present and wise "factory expert" for information—and gets it—he is unable to distinguish between what is good fuel for the show fire, and what should be held in reserve or not used at all. Furthermore, his ignorance often leads him into misstatements and inaccuracies which, however slight, are more provoking and more harmful than his absolute ignorance would be. Usually he is useful because he is handy to pick for a few days, a glib talker, maybe something of a salesman, and last, but not least, is cheap. Yet it is questionable, all things considered, really how cheap he is sometimes.

Of the real expert who is absorbed with the affairs of sociability and business deals, so much so that he cannot spare time to talk to a stranger without an appointment, and who frequently neglects to fulfil such engagements when made, perhaps there is less to be said. As a rule they are their own masters to a degree and if they err, in this respect, it is an error in judgment or zeal rather than in knowledge. Yet were it understood among the individual exhibitors that during the entire working period of the show their forces were to be divided into relays; the workers do nothing but work, and the relays to keep away from the exhibits—there might be less cause of complaint. It is the tendency to mix too many kinds of business that renders the show at times unprofitable to the visitor.

Unfortunately the shows of the past have partaken of the three qualities of grand spectacle for the general public, exposition for the wholesale and retail buyer, and general trade exchange or mart. The three qualities so mingled do not conduct to an atmosphere which is over beneficial to either one. Were the manufacturers exhibiting to take this condition seriously into account in arranging their plans, however, it might be possible to secure better results all around, to contrive to find more time for the many little business details which require attention, and to afford the visitor a better opportunity of gaining the knowledge he requires in the briefest, most cogent manner.

Now that the American Automobile Association has abandoned automobile contests on horse race tracks, it would be interesting to know what is to be the standing of the course which had formerly held that status, but which is banked at the turns with cement or otherwise for the purpose of one or two specific automobile meets. Also it would be interesting to know what action if any, is to be expected in regard to the standing of contestants participating in races held on these courses, whether altered for the purpose or not.

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COOPERATION IN BODY BUILDING

Automobile Builders and the Body Makers Working to Reduce Weight—Problems of Materials and Construction.

Of the vital subject of body design in its relation to vehicle development, altogether too little has been said in the past, and the attitude of the makers in general has been one of perhaps too much independence from the craft of carriage builders, who, alone have the experience and traditions necessary to evolve the proper combination of structural durability with harmony of line and convenience of accommodation. In this connection important work is being done by the Association of Licensed Automobile Manufacturers through its mechanical branch, in seeking the co-operation of the carriage builders' associations with a view to improving the breed of automobile body. Coker F. Clarkson, secretary of the branch, tells something of the progress which has been made in this direction, in a recent interview.

"One of the most important branches of the complex automobile industry is undoubtedly that connected with the body," he remarks. "When the first gasolene machines made their appearance, the questions of comfort, appearance and durability in body work were relatively neglected. There were a few American carriage builders with sufficient foresight to perceive the trend of events, banish their prejudices and meet the demand of the automobile manufacturer and user more than half way.

"Wood still plays an important part in high-class automobile body work. And if satisfaction is to be given, it is essential to employ none but carefully selected and thoroughly dried pieces. All the wood is many years old. It is stocked in buildings, ventilated by a special system, and packed layer on layer with joists between, in order that the drying process can continue evenly. The entire stock is examined every year and turned. At least five years elapse from the entry of a piece of wood into the factory, before it is cut up for use.

"There is nothing mysterious in good coach work, although it is surprising to find the great number of parts required to build up a limousine or landaulet, the strength of the iron work and the tremendous number of coats of paint. The paint on a large limousine body weighs much more than the average man would say; as much as 75 pounds and more. The painting and trimming of the car is in material degree specialized work. Good painting cannot be done on other than a good foundation, with the proper graduation of the several coats of paint and varnish.

"The strains to which a motor car body is subjected are greater than and considerably different from those in the case of a horse-drawn vehicle. No one engaged in making cabinets, furniture, house or other stationary fittings, could have any knowledge derived from the practice of his own business of what is necessary for the automobile. The framing of the timber, the use of panels, not merely as enclosures, but as trusses supporting the external framing, the hanging of the doors and provision for the clearance for paint, etc., have to be studied specially. The supposition that springs can give ease of riding when comparatively little attention has been paid to the form or material of the body and its trimmings is responsible for much discomfort.

"The Mechanical Branch of the Association of Licensed Automobile Manufacturers has held meetings with representative carriage makers, to see whether the latter can reduce the weight of bodies to any extent, and to interchange ideas on other interesting subjects on which the automobile engineer and the body maker are working. The Carriage Builders National Association was founded 35 years ago, and over 25 years ago established a technical school in New York for the instruction of carriage draftsmen. The idea of this school is to turn out men who can take a draft and work from it; or go back to the bench as workmen, their wages being increased by their technical knowledge; or later on, perhaps, secure employment as draftsmen distinctively. You can take two men and put them side by side in construction; let one man know his business, understand just how the thing should be proportioned; he will turn out a body that will be stronger and better than the man at the next bench; and there will be 100 to 150 pounds less weight in the product of the good man.

"One serious thing that the automobile and the body maker have been up against is the man wants to have a body built that will carry one person with the springs riding easily, in which he can pile eight or ten people and have the springs ride just as easily; which is somewhat like making a linen duster and a fur coat out of the same cloth.

"The makers of wood automobile bodies will not acknowledge that bodies made of aluminum are lighter than those made of wood; but maintain that the real state of facts is the reverse. By the use of templets practically, some excellent bodies are now being turned out with very great rapidity.

"The question of metal panels on bodies has another feature besides weight. One of the things that has troubled the carriage manufacturer is cracks and splits in the panels; which aluminum or sheet metal construction eliminates. The extreme heat and cold of a country are factors to be considered. A body built for example, in England, France, Germany or Austria, which have moist climates, different from ours, may last there for years, and give trouble here, in steam-heated garages, etc., by what is called 'opening up.' This is one reason why it is customary to kilndry lumber here, whereas abroad anything but air-dried lumber is rare or unknown. Moreover, the kind of wood generally used in this country has a lower coefficient of contraction and expension, besides being somewhat stiffer.

"Some body makers use aluminum coated steel for panels, to avoid checking in painting and what is known among painters as 'graining out.'

"As a rule automobile bodies are lighter than a corresponding body on a horse-drawn vehicle; for example, the rocker plate and sills of an ordinary landau, which weigh 160 pounds, are eliminated in an automobile body.

"The American carriage builders are now thoroughly aware of the changing character of their trade and welcome the automobile. They appreciate keenly the business of the automobile factories and are willing to work with them in every way. The members of the Licensed Association are pioneers in this co-operative work as in many others. When the automobile started, the average carriage maker pooh-poohed it and would not take hold. In Europe no automobile maker has ever built a body, probably, except one German firm who built a low-priced body."

COMING EVENTS

December 31-January 7, New York City—American Motor Car Manufacturers' Association's annual show in Grand Central Palace.

January 1, 1909, Los Angeles, Cal.—Automobile Dealers Association's 24 hours race, Ascot Park.

January 1-2—Quaker City Motor Club's two days endurance run, Philadelphia to Wilkes-Barre, Pa., and return.

January 16-23, New York City—Association of Licensed Automobile Manufacturers' annual show, Madison Square Garden.

January 21-31, Los Angeles, Cal.—Automobile Dealers Association's show.

January 27-February 3, Philadelphia, Pa.—Automobile Trade Association's eighth annual show, Second Regiment armory.

February 6-15. Chicago. Ill.—National Association of Automobile Manufacturers' Show, Coliseum. and First Regiment Armory.

February 15, Detroit, Mich.—Detroit Automobile Dealers Association's show, Wayne Pavilion.

February 15-20, St. Louis, Mo.—Automobile Manufacturers and Dealers Association's annual show.

March 6-13, Boston, Mass.—Boston Automobile Dealers Association's (Inc.) seventh annual show, Mechanics Building.

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ROMAN ARENA FOR GARDEN SHOW

Complete Details of Decorative Scheme Suggest Colossal Effects—Italian Landscapes for Departments.

On the fanciful analogy that the Madison Square Garden is to New York City what the Circus Maximus was to ancient Rome, the efforts at embellishing that time-honored structure for the purpose of the "Ninth National" show which is to open under the auspices of the Association of Licensed Automobile Manufacturers on January 16th, will be carried out with a view to creating and fostering in every possible way the effect of the arena. An arena the Garden is and always has been. But for the forthcoming show the effect will be heightened by the subordination of all decorative items to this one ideal.

Complete details as to the general scheme of decoration have not before appeared. Prominent among them will be a new emblem which has been selected for the purpose and which is regarded by its originators as peculiarly apt and symbolic of the association's spirit. The new device is to emblazon the stationary and other emanations from the association's offices and will be one of the conspicuous features of the decorations at the Madison Square Garden show. The eagle with outspread wings, as shown in the illustration, suggests the purely American character both of the show and the association. The design places the triumphant eagle on an automobile wheel, between the spokes of which appear the association's initials, "A. L. A. M.," and, as used in the show decorations, the figures "09."

As for the elements of the color scheme, the main floor will reveal a blending of brown and white and green, under a sky tone of azure blue.

The floor will be carpeted with green, where the exhibition spaces are, and bare boards will serve for aisles. In a row down the center and at all the spaces of the sides will be white lamp-posts bearing the names of the exhibitors. Between the central row of posts will be tufted seats. Opposite the Madison avenue entrance will be a low electric fountain of gray stone, sweeping in a curve about the foremost exhibits of the central space, the convex side being toward the entrance.

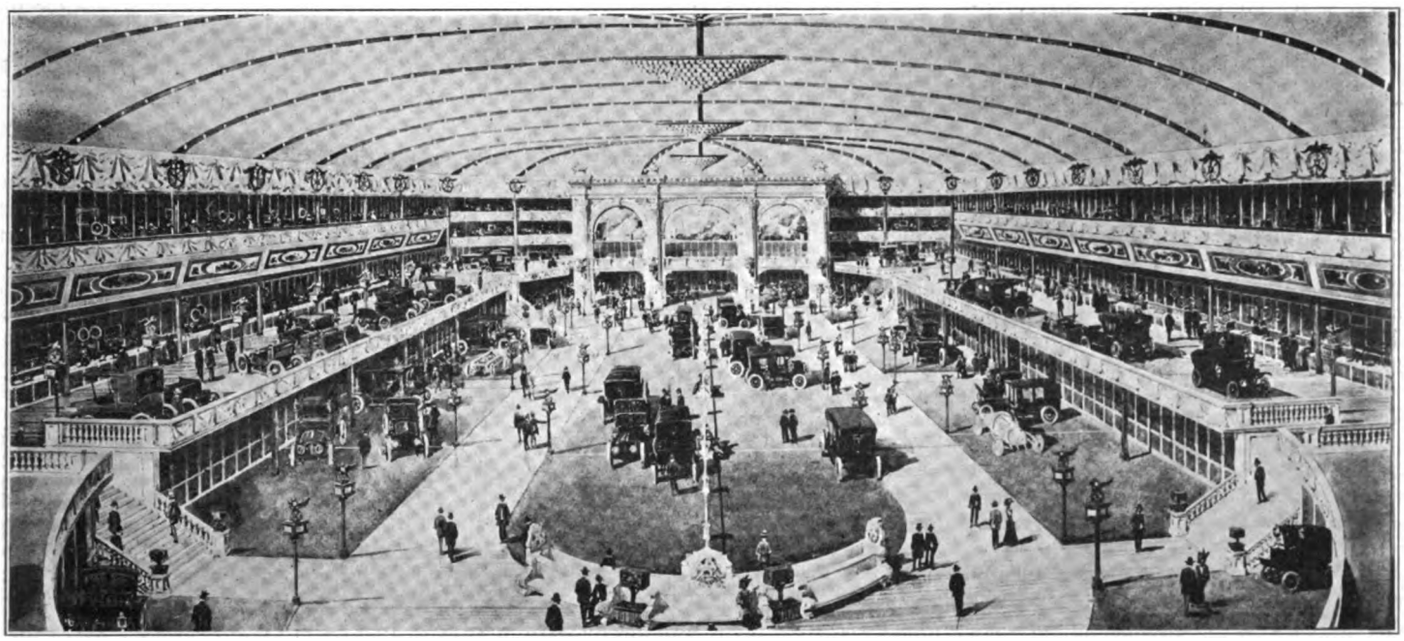
The walls at the sides of the main floor will be laid out in panels finished with buff burlap. The face of the elevated platform above these brown panels will be festooned with white bunting, and the railings, which slightly overhang the main floor will be white. At the Fourth avenue end of the main floor will be the masterpiece of the whole plan, the big triumphal arch, 87 feet across and 48 feet in height.

The elevated platform will be supported from the main floor by white Doric pillars and also the steps leading to the platform will be white. The walls back of the platform will be finished in panels of brown burlap, and in the beveled soffit, between the walls and the facing of the gallery, will be oval panels containing frescoes depicting the history of vehicular progress. Above the panels will be the face of the gallery draped in white bunting.

The different departments of the show in various parts of the Garden will have a wholly new treatment. A latticed arbor will hood the concert hall with an arch 42 feet in span and 28 feet in height. This arbor will have vines and lanterns hanging from it and the room will be lighted through it. The walls will be finished in the natural burlap, thus preserving the color scheme of the main floor. The barreled vault of the arbor will be supported by latticed columns and the tympanum at the end of it will be in three sections, each draped with vines and bearing the show emblem.

In the cafe, just off the foyer of the Madison avenue entrance, where are to be the electric vehicles, the exhibits will appear beneath an Italian pergola presenting the impression of looking over a stone wall upon an Italian landscape. The weathered gray beams of the pergola will be supported by gray stone columns and from the beams will hang vines and bunches of electrically illuminated grapes. The sky will appear beneath the edges of the pergola, then the landscape between the sky and the wall that runs about the sides.

In the basement, the white and brown color scheme will be maintained, while the rathskellar, which has been a feature for two years, will be made to represent a stone wine cellar, with a groined ceiling and genuine half-casks set on platforms.



INTERIOR VIEW OF MADISON SQUARE GARDEN, SHOWING DECORATIVE SCHEME FOR THE A. L. A. M. SHOW



THE A. L. A. M. EMBLEM

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NEW RULES FOR BRIARCLIFF RACE

Original Limitations Provoke a Howl of Protest—Donor of Trophy Now Asked to Modify Deed of Gift.

Difficulties multiply in connection with the adoption of rules for the proposed Briarcliff road race next spring. On Wednesday, December 16, the Automobile Manufacturers' Committee, who are the promoters of the contest, adopted a set of rules which provoked such a howl of disapproval from certain of the manufacturers and dealers who claimed to have been slighted, that on Monday, the 21st., another meeting was called at which all of the original rules relating to cylinder bore and weight were thrown out and a new set adopted.

The limitations first decided upon restricted the bore to 5¼ inches maximum for four cylinder motors, or an equivalent for a different number of cylinders, with no limit on the stroke, and the minimum weight was to be 2,600 pounds. This limit permitted of a larger bore than that adopted by the foreign Association of Recognized Automobile Clubs, which is 5⅛ inches. Inasmuch as Briarcliff is intended to be an international race, it was feared that the Automobile Club of America, of which a sanction will be requested, would refuse to grant one, on account of the rules laid down by the Briarcliff promoters.

At the second session it was finally agreed to make the limitations as follows: Maximum bore of 4 cylinder motor, 4⅝ inches; maximum stroke 6 inches; minimum wheel base 118 inches; minimum weight 2,300 pounds. Equivalents of these dimensions will rule in cars with a greater or less number of cylinders. In connection with the adoption of these rules, however, the donor of the trophy, Walter W. Law, will be asked to change the deed of gift, so as to eliminate the clause: "the manufacturers of a car entered in the race shall have sold and delivered, or have built and have had ready for delivery, at least 30 days before the date of the contest in the year 1909 at least ten cars similar in each and every respect to the car offered for entry."

The request for this change will be made in view of the fact that the limitations as now agreed upon, will admit only machines of "stock car" dimensions, which, of course, will leave ample room for the discussion of the old question, "What is a stock car?"

Mardi Gras Meet for New Orleans.

The fact that the American Automobile Association has condemned motor racing on small tracks does not seem to worry the New Orleans Automobile Club in the least and that club has cheerfully announced that it expects to hold a three days race meet during the Mardi Gras carnival, February 20-22, 1909. This New Orleans organization recently affiliated with the A. A. A., and the secretary of the club, Homer George, learned not so long ago that money could be made out of automobile race meets. It was at his incentive that the recent hippodrome meet was held in that city at which Lewis Strang's troupe of performers managed to make the people think they were holding a real race.

A number of short events ranging from 1 to 50 miles, are scheduled for the three days. Beginning Saturday night, February 20, there will be a 24 hours race for stock chassis. The track, which measures one mile in circumference, is to be scraped, banked and oiled with dust preventative. Fred J. Wagner has been selected as official started.

Carris Winner of Worcester Run.

Final results of the Worcester (Mass.) Automobile Club's 210 miles reliability run through the snow, held on December 12, as announced by the technical committee, showed that after the most minute examination, only one of the 14 contestants who started on the run, received a perfect score. After submitting the Franklin car driven by C. S. Carris, to seven different examinations, it was found that the car had no visible defect for which it could be penalized. In the final scrutiny penalties were imposed upon cars for such trivial things as a screw loose in a floor plate, a loose dash bolt, engine pan bolt missing, or loose steering wheel.

Two almost-winners were Murch's Cadillac, and B. A. Robinson's Rambler, both of which received the scant penalizations of 2 points each, for loosened parts that almost required microscopes to locate. Eight of the original fourteen starters checked in at the close of the run with apparently perfect scores.

Philadelphia Offers Wilkes-Barre a Cup.

In connection with the Quaker City Motor Club's endurance run to Wilkes-Barre, Pa., and return on January 1-2, the Philadelphia club has offered a silver cup worth $300 as a prize for the Wilkes-Barre car making the best showing. Upon hearing of this offer a number of Wilkes-Barre motorists at once announced that they would enter the competition. The plan for these entries, as now laid out, is for them to start from Wilkes-Barre on December 31 and run to Philadelphia over the regular scheduled route, this trip to be the first leg of the contest. On the following morning, they will join the Q. C. M. C. members on the run to Wilkes-Barre, thus completing a round trip at the time the Philadelphia contestants finish their first half. This arrangement, of course, is to avoid the necessity of entrants from the smaller city shipping or driving their cars the extra double distance in order to compete.

LATE DECISION DISQUALIFIES LYTLE

His Isotta Car Loses Second Place in Record of Vanderbilt Cup Race—Its Excess Weight the Reason.

Summary announcement was made last week that the Isotta car which Herbert Lytle drove into second place in the Vanderbilt cup race on October 24 last, had been disqualified. The Vanderbilt Cup Commission, after allowing the Italian manufacturer the full benefit of several weeks' publicity, suddenly foreclosed on a technical violation of the rules, which were quite fully known and discussed at the time of the race.

It seems that when Lytle weighed in his car the day before the race, he was obliged to remove the mud-guard supports and a heavy tire rack, in order to get the weight trimmed down to the maximum allowance of 2,644 pounds. When the race started, however, the rack had been replaced, and upon weighing at the close of the contest, the technical committee found the machine above the weight limit. Wm. K. Vanderbilt, Jr., in order to make every possible allowance, gave instructions to have its tanks completely drained, all the mud and grease collected from the road scraped off and even permitted grease in the grease cups to be removed. In spite of all this effort to give the car the advantage of its participation in the race, it was found that the car was still 23½ pounds over the weight permitted by the rules.

Chairman Thompson, after duly considering the matter reported to Referee Vanderbilt that according to the rules, he was bound to disqualify the car and a meeting of the Cup Commission was called to discuss the question, before making it public. It was found impossible to get a quorum and the Chairman then notified the members of the commission regarding the decision.

While this decision positively disqualifies and eliminates the Isotta, it does not officially give second place to Florida in the Locomobile, who was third at the grandstand, after the race was declared off, nor does it affect the status of Luttgen, who finished immediately afterward with Vanderbilt's own car. The official records will now show that only one car actually finished the contest.

Denver Climbfest Indefinitely Postponed.

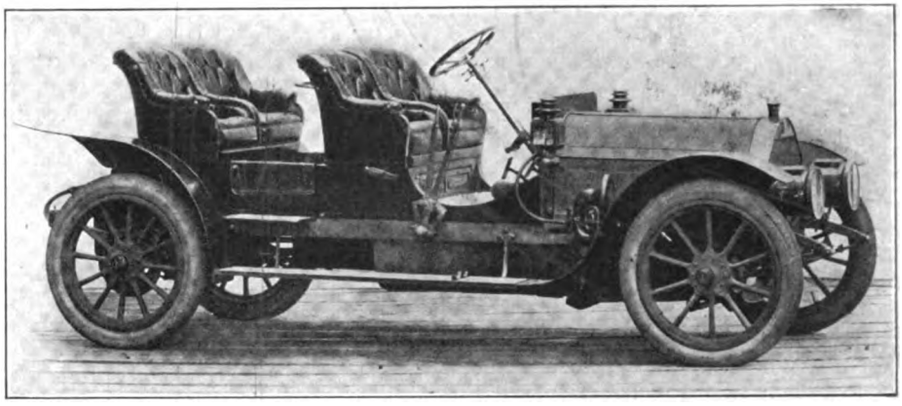
On account of local weather conditions, the Denver (Col.) Motor Club's hill climb, which was scheduled to take place on the Chimney Gulch road to the summit of Lookout Mountain, on December 12, did not come off and the contest has been postponed indefinitely. The canon is filled with snow and the roads are in a practically impassable condition.

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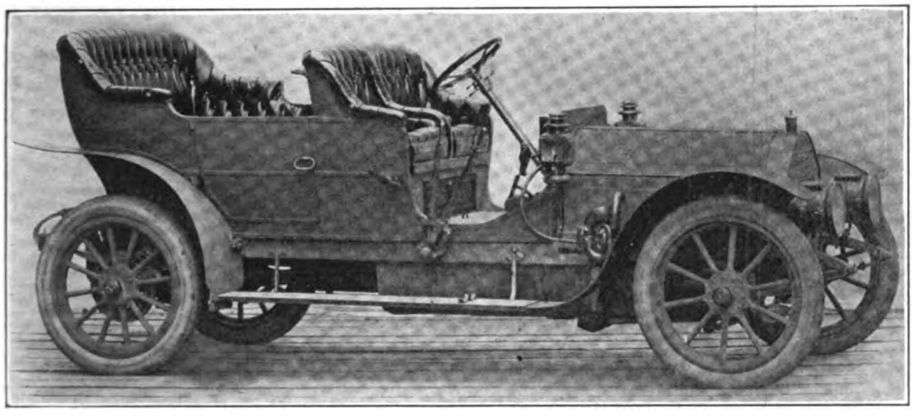
PIERCE MODELS SHOW DEPARTURES

Great Arrow Line for 1909 Includes Five Sizes and Many Styles—The Important Changes Specified.

Great Arrows—that is to say the Pierce family—will be known during the coming year in no less than five different sizes and styles, with the usual number of body variations to increase the virtual number of types by several degrees. Of six-cylinder models there will be three, the 60 model already so well known being continued, while two other and entirely new sextuple models also have been designed, one of 48 and the other of 36 horsepower, as measured by the A. L. A. M. rating. One of the two quadruple models which complete the line is practically a duplication of the 40 horsepower machine already in service with sundry minor improvements added to bring it more nearly up to date, while



PIERCE 6-36 FOUR PASSENGER TOURING CAR



PIERCE 6-36 FIVE PASSENGER TOURING CAR

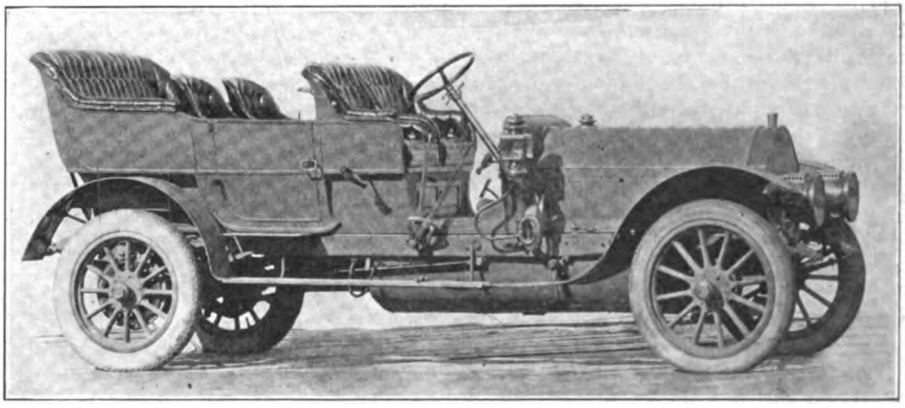
the other is rated at 24 horsepower, is entirely new, and is destined chiefly to fulfil the purposes of the ubiquitous town car.

The completion of these five machines reveals a number of deviations from previous practice in the efforts of the Geo. N. Pierce Co., most noticeable among them being the elimination of the former gear changing lever which so long has been carried in a convenient position directly under the steering wheel. Another important change, applying to the new four and six cylinder models, is the elimination of the former individual arrangement of cylinder casting and its replacement by the twin method. This in addition to other advantages permits the interjection of a liberal crank shaft bearing between each pair of cylinders and affords ample total bearing area for the shaft without sacrificing anything in the way of overall engine dimensions. Other changes also made, comprise the use of rollers for the valve lifter cam contacts, the use of sound deadening washers; the use of bronze-fiber timing gears in place of the solid bronze gears formerly employed, and the redesign of intake and water return pipes.

Second in importance, and accompanying the changed method of actuating the gear set, is the adoption of a new form of selective change speed gear, which is applicable to all the models. In addition to furnishing the conventional four forward speeds, with direct connection on the high, it is noteworthy in several respects. Its position is such as to permit the gear actuating rocker shaft to enter the box directly at one side, thus doing away with all secondary shafts and interconnecting linkages, and also considerably reducing the size of the gearset. In addition to this it is very compactly designed, so that despite its accomplishment of the manifold function of affording five changes of speed including the reverse, it is smaller than many three-speed sets and goes into the frame very handily just back of the clutch and well forward under the flooring in front of the driver's seat.

It has but two sliding sets, the first affording the direct connection through the main driving shaft by means of a jaw clutch, and the third, through the lay shaft which is in constant rotation. The second set gives the two lower forward speeds in the usual way, and the reverse by inter-meshing with an idler which is in constant motion. A somewhat unusual feature of the arrangement is that the neutral point lies between the first and second forward speeds, so that for manipulating in narrow quarters — which is the condition under which the reverse is most employed, the low forward and backward speeds are engaged by direct movement of the lever and without the necessity of passing through any idle or neutral point.

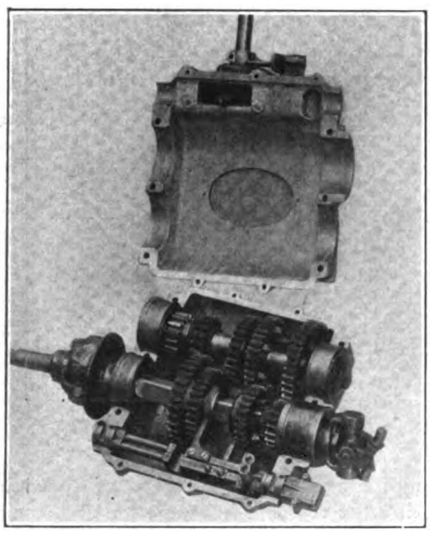
In this same connection a very neat form of clutch interlocker is provided in the shape of a circular arc-shaped plate which is positively attached to the gear shifting rocker and is perforated at a number of



PIERCE 6-60

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points to permit the engagement of a pin connected with the clutch mechanism. When the clutch is engaged, the pin enters one of these holes, thus locking the gear-



PIERCE TRANSMISSION

set against inadvertent handling or jarring out of mesh, while so soon as the clutch is unseated, the gear mechanism is free to move in any way desired under the influence of the shifting lever.

Power is transmitted to the gearset by a particularly neat and light form of cone clutch, leather faced and equipped with cork inserts set in a single row. The engaging spring is not only self contained and fully enclosed, but designed to take up an unusually small amount of longitudinal space, and is directly connected to the transmission shaft through a double universal joint. This compact construction, of course, permits the extreme forward position of the gear box, and also allows a rather considerable length of propeller shaft with consequent reduced augularity. Two double joints are provided in the propeller shaft, complete floating drive for the rear axle thus being secured.

The axle construction varies from the familiar "full floating" type in that the wheels instead of being mounted on the axle tubes are carried on the ends of the axle stubs themselves, the arrangement thus being of the semi-floating type. The parts, like the entire transmission group, are mounted on annular ball bearings, with adequate provision for lubrication. The outer ends of the stub axles are supported by bearings set close inside the wheels, while the inner ends are keyed into the differential gearing, the bearing suports being on the bronze hubs of the differential housing, rather than on the shafts themselves. The differentials are of the spur type, and the thrust of the driving bevels is absorbed by an independent ball bearing.

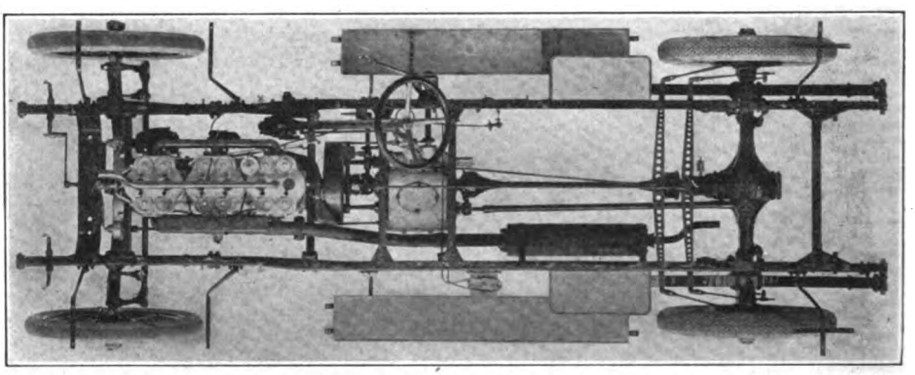
The triangular torsion rod, instead of being rigidly attached to the rear axle housing is hinged to it at two points, a vertical pin allowing a certain elasticity of movement for the axle. In this way the driving mechanism is given the complete floating arrangement without sacrificing anything to strength or rigidity in the lines of driving force.

Of the general details of the power plant, several of the special features are retained. The oiling system, for example is retained in its integrity, the oil being pumped from a well in the base through ducts in the crank shaft to the various bearings, the overflow being sprayed by the motion of the cranks, and serving to lubricate the cylinder walls. The carburetter is the same as has been used heretofore except for the construction of the auxiliary air inlet, which is somewhat out of the ordinary. It consists of a group of three spring-controlled reeds, which are equally spaced about the cylindrical walls of the air chamber. The reeds are backed by springs of varying tension and are opened progressively according to the varying demands of the engine as indicated by the suction, to admit just the required amount of diluent to the mixing chamber. Two sets of ignition arrangement are fitted, the principle standby being the Bosch magneto, which fires a set of plugs mounted horizontally in the sides of the valve chambers. The auxiliary system comprises dry batteries, coil and roller commutator, driven from a vertical shaft actuated by the inlet cam shaft. The plugs for this secondary system are mounted in the cylinder heads, adjacent to the valves. The latter, by the way, are still of the interchangeable type, and have been increased ¼ inch in diameter over the sizes in use on the 1909 models.

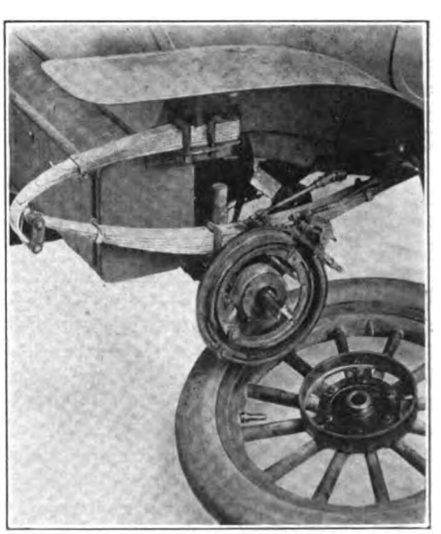
The spring suspension is of the semi-elliptical order on all except the new 6-36 and the smaller four-cylinder town car models. For these, the rear ends of the chassis are hung on three-quarter elliptics. An important detail of the spring construction is that instead of drilling the leaves to admit binding bolts, two bosses are stamped out of the successive laminations of such size that they fit and interlock tightly together, the saddles clamping them firmly together. For both front and rear members a swivelled bearing is secured on the axles, with a special form of saddle provided with a liberal oil way which is fed from grease cups which also are provided in every case.

The general specifications are: For the 6-36 model, 119 inches wheel base; tires, 36 by 3½ by 4 inches as a runabout, and 34 by 4 by 4½ inches when used as a touring car for two, three, four or five passengers; for the 6-48 model, 130 inches wheel base; tires, 36 by 4 by 4½ inches when used as a touring car for two, three or four passengers, and 4 by 5 inches when the seven passenger accommodation is employed; for the 6-60, 135 inches wheel base; tires, 36 by 4½ by 5½ inches; for the 4-40, 134 inches wheel base; tires 36 by 4 by 4½ or 5 inches, according to the type of body employed; for the small four-cylinder car, 111½ inches wheel base; tires 34 by 3½ by 4 inches, or 32 by 4 by 4½ inches as an option.

The special method of body construction which has been in successful use heretofore on Pierce cars is continued. The bodies are built of cast aluminum, the several sections being separately draw-filed and fastened together after the preliminary finish on a wood mounting, with lapped, riveted joints. After the joints are complete they are finished over by draw-filing, and the final finish built up directly on the metal.



PIERCE 6-48 CHASSIS



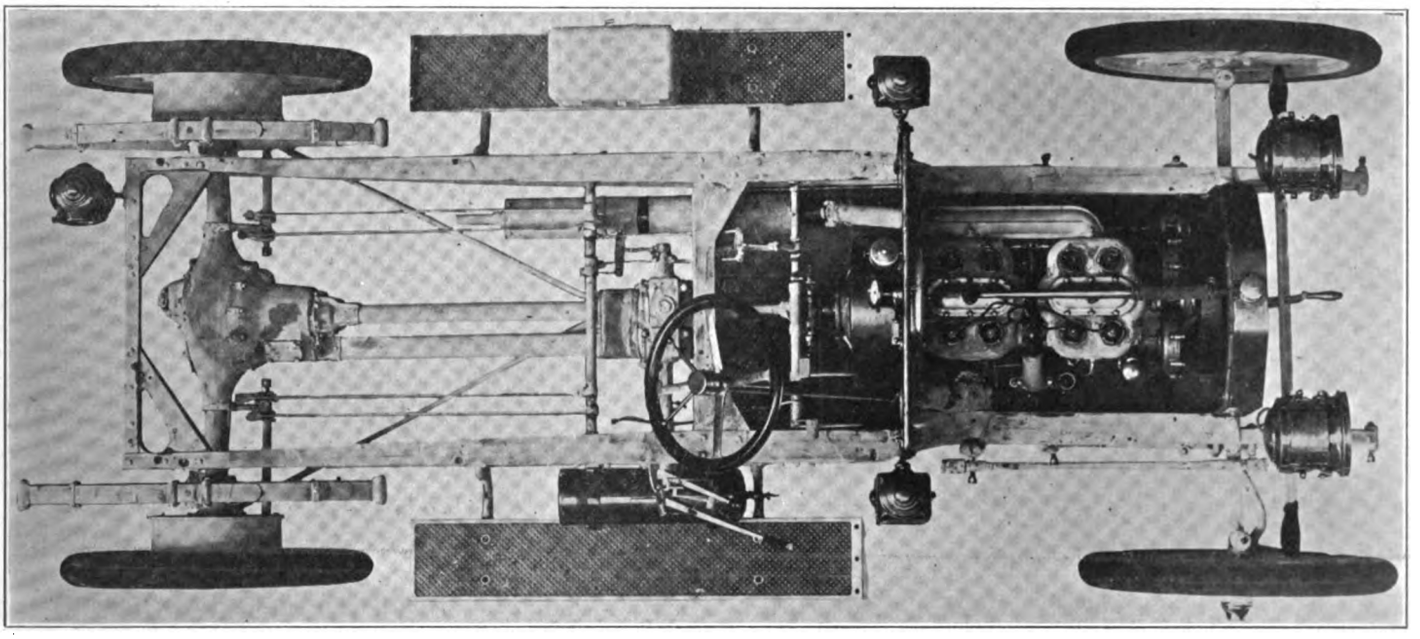
PIERCE BRAKE AND SPRING

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THE NEW MARMON "THIRTY-TWO"

Features of Its Original Rear Axle Construction—Body Mounting Includes Three Distinct Types.

Complete details of the new Marmon "Thirty-two," the smaller of the two most recent additions to the product of the Nordyke & Marmon Co., Indianapolis, Ind., add not a little to the interest which its preliminary details, published some time since, served to create. The machine is a low, rakish, "Continental" appearing model, of pleasing lines and roomy and comfortable setup, besides which it is dignified by a number of mechanical features which are well worthy of special attention.



CHASSIS PLAN OF MARMON "32"

Its motor is the newest Marmon model of 4½ inches "square" dimensions and a nominal output of 32-40 horsepower according to speed and load. It is of original design throughout and while comparatively light in weight has been worked out with special regard to the two objects of great durability coupled with extreme accessibility. Particularly noteworthy in this connection are the use of very long pistons and connecting rods—both features conducive to long life and efficient performance. The motor is mounted by means of a three-point support within the main frame, the forward end being carried on a trunion which rests on the cross channel member, and the rear end by a steel tube the ends of which are cradled on the sides of the main frame. The crank case, which is of the barrel type, is a staunch, single-piece aluminum casting having an independent oil reservoir bolted to the bottom by means of through bolts instead of studs, which are secured by lock nuts, with lock washers and cotter pins. The crank shaft is removable through the rear end of the case—the forward shaft bearing being a solid bushing, while the intermediate and rear end bearings are of the separable type. The valves, which are oppositely disposed, have an opening in the clear of 2 inches. The valve tappets are provided with screw and lock nut adjustment, and are equipped with steel contact rollers which ride upon the cams. The tappet guides have a large bearing surface, are enclosed by practical dust caps, and are retained by means of crows-feet clamps.

The magneto and water pump are mounted on the exhaust side, with the shaft extending through the pump casing. Double ignition is employed using the Bosch high tension magneto, single Bosch coil mounted on the dash, battery arranged to work through the coil and the distributor which forms an integral part of the magneto, and one set of spark plugs located over the intake valves. The effect secured is thus practically the same as that of the complete dual ignition, but the amount of apparatus involved is much reduced and simplified. The intake manifolds are cast integral with the cylinder units and water jacketed, thus reducing the liability of the gasolene condensing from the gas while running at low speeds, in addition to bringing about a very desirable simplification of the piping.

Motor lubrication is by means of the Marmon system which has been in successful use for several years and which involves the use of a gear driven pump which draws the oil through a fine screen and serves it to the three main crank shaft bearings through radial holes leading from the hollow bore of the shaft and registering with grooves in the bearings once in every revolution, and through which it is carried to the connecting rod "big ends." Uniform pressure is maintained throughout the system by means of an adjustable relief valve conveniently located, together with a gauge mounted on the dash board which indicates the pressure on the oil passing through the system. The pump is placed in a case located on the outside of the engine base and is driven from the intake cam shaft by spiral gears. Provision is made for removing the screen, and the well may be cleaned out by removing a plate underneath in the bottom of the mud pan.

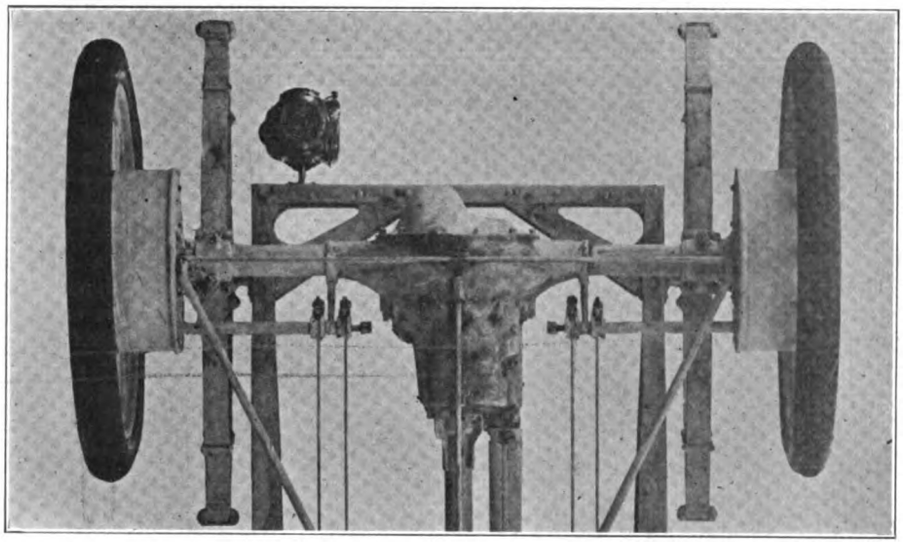
Transmission is through a plain cone clutch, leather faced and equipped with relieving springs. The clutch is engaged by a single spring and is mounted with ball thrust bearings to relieve the pressure of disengagement. The change gear is mounted on the rear axle—a new feature with this model, the rear axle construction being of particular interest in this connection. The axle proper is of identically the same construction as is employed in the larger Marmon "Fifty" car, except for the added details of the speed changing mechanism which it carries.

The axle housing is of pressed steel, the differential part being in the form of a ring with the tubular form continued through the wheel hubs giving a complete floating axle construction. Sleeves forming the support for the wheels, brakes and spring pads are secured to the ends of the axle tubes and these add stiffness and strength to the housing. The rear opening of the differential housing is closed with a cast aluminum cover which, when removed, permits the differential unit being taken out and also the transmission gear set without the necessity of jacking up the axle or disturbing it in any way, except the

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partial withdrawal of the floating axle drive shafts.

To the forward side of the axle housing is bolted the aluminum bell shaped gear box of the three speed selective transmission with the main shaft on top and the countershaft directly beneath.

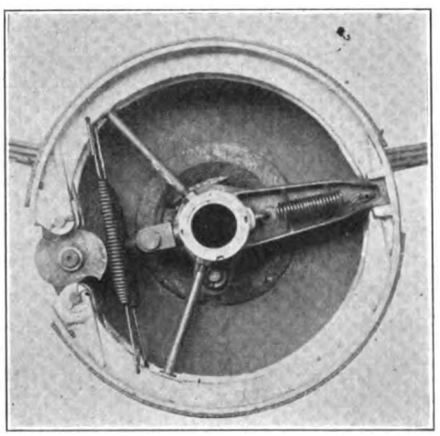


MARMON REAR AXLE CONSTRUCTION

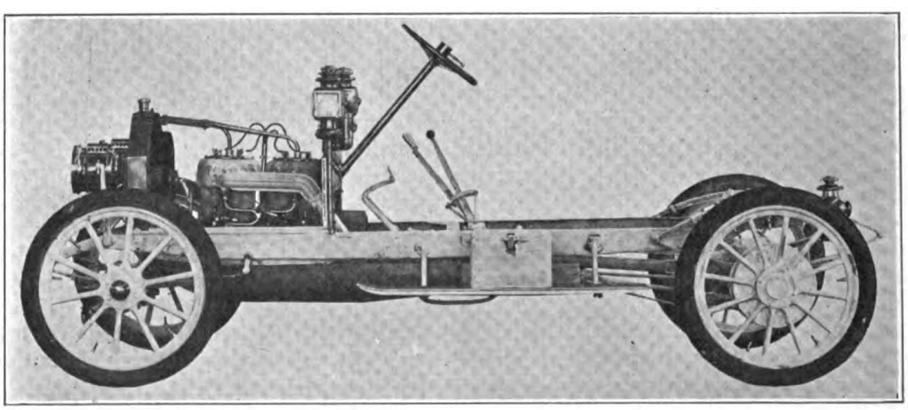
The radius rod and torsion group is here condensed into a single radius and torsion tube which encloses the propeller shaft and is yoked to the frame at its forward end by means of a huge ball and socket joint. The universal joint of the propeller shaft is mounted within this member, which, in turn, is suitably protected and enclosed to keep out offending dust and dirt. The containing aluminum housing also supports the gear shift rocker shaft and the emergency brake rocker shaft and is packed with lubricant—further, it is readily accessible through the floor of the car. The two gear shifting rods are enclosed in an oval tube which guards them from mud and water. Two pull and push braces from the ends of the axle to the forward end of the torsion tube, hold the axle firmly in position, while a truss rod fitted with an adjustable turn buckle passes underneath the gear box from the center of the axle to the forward end of the shaft tube, adding strength and rigidity to the structure.

Another peculiarity of the construction is the use of but a single row of balls in the mounting of the wheels, the alignment of those important members being secured by the inboard support of the stub axle ends in the differential casing. The result is at once a simplification of the mounting and the securing of a very short length of hub and an unusually neat wheel.

The brakes, which are of the internal expanding type, are placed side by side on the rear wheels, on a single drum 14 inches in diameter—the double sets affording an aggregate area of no less than 352 square inches. The shoes are faced with Thermoid lining and are mounted on a carrier the squared end of which fits into corresponding slots in the shoes, thereby giving a true floating ring construction. They are equalized and are applied by cam action.



ARMON BRAKES



SIDE VIEW OF MARMON "32" CHASSIS

The wheel base is 112 inches, and the wheels are shod with 34 by 4 inch tires. The spring suspension is by full elliptic members 40 inches long in the rear and semi-elliptic members, 35 inches long in front. The front springs are hung 15 inches from the front and 20 inches from the rear, thus allowing the radiator to be mounted even with the axle.

The body mounting is in three distinct types—the five passenger touring car; the four passenger 'suburban," which gives the general effect of the often yclept "baby tonneau," though with additional room; and the two passenger roadster, which has a very low seat placed well to the rear, special fenders, and a rear mounted fuel tank.

Relation of Braking Area to Weight.

Braking equipments having been reduced to terms of everyday security, it has now become a question of braking area in proportion to total car weight on wheels, instead of, as formerly, the mere size of the drums irrespective of the weight of the car. In this connection the H. H. Franklin Mfg. Co. has recently produced comparisons with the equipment of their seven-passenger touring car and a standard machine of another make. The weights of the two vehicles are, respectively, 2,650 and 3,400 pounds, and the Franklin car has an aggregate braking area amounting to 340.8 square inches. The area of working surface employed on the other machine is 339.2 square inches. But as is pointed out, in the latter case the brakes are all mounted on the rear wheels, whereas on the Franklin, transmission brake is so placed that it has three and one-half times the leverage of a rear wheel brake. This means an equivalent of 603.8 square inches rear braking area, which, as the other car has a disadvantage of 28 per cent. in weight, reduces its effective braking equipment by an amount sufficient to give the Franklin excess of 78 per cent.

New Palmer & Singer Model Coming.

As a result of the showing made by their car at the recent Savannah races, the Palmer & Singer Mfg. Co. has decided to produce a new Savannah model, only a limited number of which will be built, but which will follow closely the lines of the southern competitor for the Grand Prize. The car will be rated at 90 horsepower and will be sold under a 90-mile-an-hour guarantee.

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BIG PLANT FOR SMALL APPLIANCES

Wonders of Laboratory Where Splitdorf Ignition Apparatus is Produced—The Firm's 50th Anniversary.

"It is a wonderful thing in its way. A few years ago to have dreamed of a big six story brick factory just making apparatus to deliver little blue sparks in the cylinders of gasolene motors would have seemed absurd," said an observing member of the trade, "but you can get a sidelight on the present size of the motor industry by taking a look at just that kind of a factory now, where magnetos, coils, spark plugs, switches, timers and such things are being manufactured and shipped in a volume that only a little time back would have supplied the world five times over."

He had in mind the Splitdorf Laboratory, in the Bronx, New York City. For anyone entertaining a curiosity as to what is inside of a high tension coil or how a magneto is made, it is a good place to visit. Even the man interested in the study of manufacturing problems in general will find food for thought, because the making of ignition apparatus on the large scale which the Splitdorf establishment has undertaken has evolved some rather pretty work in production methods and equipment.

To get to the new Splitdorf factory it is necessary to take the "West Farms" subway train, which after reaching the upper limits of Manhattan dives underneath the Harlem River, to come up in the Bronx on the other side. With a rush and a roar, together with a very uncomfortable compression of the atmosphere, the cars make their submarine dash, and, after a long uphill pull, reach the Mott avenue station, where the visitor alights. So deep has the plunge of the train been, however, that from the station platform it is necessary to take an elevator to the street level, which is four stories above. A short walk brings one to the factory, on Walton avenue near 137th street.

Upon entering the door, a strong smell of ozone and melting wax constitutes the first "impression" of the place. The smell goes with the business, just as there are peculiar odors associated with tanning, surgery, blacksmithing, brewing or the manufacture of perfumes. No difficulty is encountered in figuring out the source of the smell of insulating wax, but the ozone is harder to trace. The trip through the factory, however, discloses the mystery. The ozone is the product of the thousands of sharp electrical sparks which occur in the building during the course of the day in the testing of plugs, coils and magnetos.

Before passing to the department of purely electrical work, it is worth while to take a look at the equipment for the making the mechanical parts of the different Splitdorf devices. As in most establishments manufacturing comparatively small articles, there are numerous rows of drill presses, lathes, milling machines, grinders, and the like, but many of these are built in special forms to suit peculiar requirements. To make the ball races for the bearings of the magneto shafts, for instance, one of the mechanical geniuses of the factory has devised a set of special grinders which have the revolving spindles mounted in big double taper plain bearings, permitting an astonishing speed without either looseness or overheating. The bearings of the grinders look big enough to carry the shaft of a harbor tug, while the grinding tool is only about the size of a shoe button, but the speed at which the spindle revolves and the accuracy with which the ball races for the magnetos must be ground, require special precautions. In result, the grinders turn out magneto bearings which allow perfectly free revolution but not a trace of discoverable end-play.

That sharp-edged, "grained metal" finish which is a feature of all the exterior brass or bronze parts of Splitdorf devices, is secured by means of a rotary emery belt. The latter has an outer surface of emery cloth, and runs like a band saw over two rollers. The parts to be finished are pressed by hand against the belt as it flows from one roller to the other, and a moment's contact "grains" and polishes the metal. The pieces are then heated in a Bunson flame and subsequently lacquered so that they will preserve their bright appearance.

Nearly all of the hard rubber parts used are received cast from dies, so that they run uniform and perfect. Before the dies were made, each part passed through several earlier forms, each of which was improved after service had shown where better design could be effected. The dies are very expensive, and not until finality of design for a particular piece has been attained, can it be given over to the die method. Similarly in every detail of the mechanical work on the product, advantage has been taken of whatever methods will produce the required high standard of results in the most efficient way.

To understand a magneto it is necessary for the visitor to know that an electrical current can be "generated" or caused to flow in a loop of wire when a portion of the loop is moved between the two poles or ends of a U-shaped magnet. A magneto is essentially a set of magnets with a group of revolvable loops of wire between the poles. When the shaft carrying the windings of wire is revolved, electrical currents are set up in the wire windings. These currents can be tapped or conducted from the magneto to other parts on a car, provided a path is given them by which they may return to the magneto again, whether it be by a wire or simply through the metal frame of the automobile itself.

On the floor chiefly devoted to the manufacture of the magnetos, there may be seen, in addition to the testing and assembling benches, several long tables bearing rows of U-shaped steel pieces. These are converted into magnets by the simple process of surrounding them with coils of wire through which a strong electric current is flowing. The coils are fixed permanently to the wall, and the steel pieces are magnetized one by one, through being inserted in the holes in the coils, provided for their reception. The man in charge puts a piece in, turns on the current, waits a few moments, then turns the current off and on a few times, gives a final "dose" of some duration, and the trick is done. The magnetized pieces are fitted with short steel bars to connect the two ends and close the "magnetic circuit" so that they will not lose strength before being mounted in the magnetos of which they will form a part, and are then arranged in rows on a receiving table. Before being used they are tested, each one being required to lift an iron weight of about 20 pounds or to suffer rejectment as unsuitable.

The testing stand for the complete magnetos, on the same floor, is fitted with all the necessary shafting and gear wheels to drive the machines at various speeds. Connected up with a coil, each magneto provides current for a group of four or six plugs, according to the service for which it will be required. The Splitdorf "system" of magneto ignition is different from most in that only one coil unit is used, instead of a separate unit for each cylinder of the motor, and that the magneto not only supplies the dashboard coil with the necessary primary or low tension current, but accomplishes the distribution of the high tension current from the coil to the various cylinders in their turn.

Keeping in mind that the primary or low tension current only goes from the magneto to the coil and return, and that the high tension or secondary current in effect is conducted only from the coil through a distributer to the spark plugs and back through the metal work of the car to the coil, the system can easily be understood. The novelty of the Splitdorf arrangement consists in incorporating the distributer for the high tension current in the available space in the upper part of the magneto instead of having it outside as a separate part of the system.

In the electrical sense there is no difference whether the magneto and the high tension current distributer are together or a mile apart, but as a mechanical combination for economizing space and simplifying the method of drive the arrangement of the two together is a happy idea. The coil gets its series of primary current impulses from the magneto and at each impluse delivers a corresponding discharge of high tension current to the distributer in the upper part of the magneto. The latter is geared to the main shaft of the magneto in the proper ratio to send the high tension current along through each of the four or

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six heavily insulated leads in turn, so that it is delivered to the spark plug of each of the engine cylinders at the proper time.

For one coil unit to do all the work ordinarily accomplished by four or six obviously requires that it be made extremely durable and of a capacity to avoid overheating. Such is the construction, and a very generous sized trembler is used, much more substantial than on an ordinary coil. The coil is wired to take battery current as well as magneto. To start the car from the seat a mother-of-pearl push button is located in the side of the coil box. By pressing the button the primary circuit from the battery is closed, independent of the position of the timer. The resulting flow of high tension impulses is sent from the coil to the distributor and passed along to the correct cylinder, since the distributing arm is geared always to be in contact with the lead to the cylinder which is in the position to be fired.

Fifty years of experience in making coils has taught the Splitdorf people some things which lead them to make the inside of their coils quite different from many others. The usual ignition coil has a core of soft iron wires extending like a straight piece, which when magnetized by the flow of primary current around it has its poles at opposite ends of the coil. In watching the construction of the Splitdorf coils, however, it will be seen that the core also contains various lengths of very fine strands of wire, much longer than the coil itself is to be.

When the coil is ready to assemble these are not cut off flush on the ends as one would expect, but are looped around the outside of the wire windings toward each other until the longest ends almost touch to form a complete "magnetic circuit." The theory in this connection is rather intricate and has to do with taking care of various magnetic eddies and stray currents that would otherwise unfavorably influence the action of the coil. The winding of the wire around the central core differs from the more common method, too. The winding is in two sections, one for each the upper and lower halves, the sections being wound oppositely but with their terminal connections so disposed as to unite in the one effect.

Big sheets of shiney black hard rubber are used up rapidly in being cut into strips of suitable size for insulation inside the coils. To fold and bend them to the proper forms, the strips are heated for a moment over a sootless flame, when they become soft and pliable for the brief time necessary to shape them. Whatever care may be manifest as to the exterior perfection of the coils is more than matched by the painstaking work that is done on the interior assembly, where the materials used are of the best. The wiring leads inside are covered with small white rubber tubing and all the insulation made with a thoroughness suggesting that no work will be left for the wax insulating filling except to occupy the spare space in the containing box and make the contents one mass.

But it is the top floor that is the liveliest and most interesting for the visitor, not necessarily because of the fact that here a good proportion of the operatives are bright looking girls, but because of the diversity of operations which are going on. The big wax melting pots are on this floor, looking like dwarf ore smelters. The machine which winds tin foil and insulating paper together for the condensers, and the machine which crushes the rolls thus made into suitable shape for the coil boxes, are located here. The repair department and the wreckage department occupy another corner, looking very industrious by reason of the fact that in tearing down old coils it is necessary to make the wax chips fly when chopping the insulation away from the windings.

The tinkle of a telephone bell is heard intermittently in the hum of work. It does not signify real telephone calls, however. An old style telephone generator of the kind where you whirl the crank to ring the signal, is used in the repair department for the purpose of testing coil windings. The girl in charge of the work connects the two terminals of the suspected piece of wire winding to the terminals of the telephone magneto, and revolves the crank. If the bell tinkles the winding is good, but if the bell cannot be made to sound, the winding is thrown in the scrap heap.

Mica seems like hard stuff to handle, and yet in the spark plug department on this top floor the visitor can see something of a wonder performed with it is the result of a clever method of manipulation. The central metal core of the new combination mica and porcelain plug, which the department is devoting its chief attention to at present, is wound with white India mica. The core is tapered and the mica is rolled around it in short, curved, overlapping strips by means of a small hand-operated lathe device. Tightly as it can be wound by this method, however, it does not meet the Splitdorf requirements. The core with its wrapping is placed in the bushing of the plug, with the small end of the taper toward what will be the top of the plug. While the bushing is securely held, the large end of the core is hit a sharp and powerful blow, driving the tapered core with great force into the narrowing mica coating which surrounds it. The result is that the mica layers take a spiral relation to the core and grip it to the last possible degree.

The formation of the mica is then such that with a sharp knife all the loose edges may be scraped away until the blade comes to a hard, seemingly solid, glass-like surface that cannot be scraped down further. A close examination under a microscope reveals that the successive layers from a surface which appears like overlapping fish scales, but the similarity does not extend to any such easy disarrangement or removal as characterize the latter. This method of using the mica circumvents practically every objection which has in the past been offered against the material as a spark plug insulator, it is said. Mica washers are used on the plug only to surround the upper part of the central mica winding on the core, while over the washers there is a further protecting hood of green porcelain.

From the sixth floor down to the second, the building is filled with busy workers in the manufacturing end, presenting, as previously suggested, a striking corrallary of the magnitude of the motor industry requiring this among many other factories to supply its ignition needs. The ground floor contains the offices, the shipping room, a stock room and a place for automobiles requiring ignition installation or repairs at the factory. The basement has the woodworking department and also has the boiler room and power plant for generating electric current for the building. The room contains a very elaborate and complete switchboard, where mischievous hands sometimes turn out the lights to mystify the visitor.

New as the factory and equipment are, the Splitdorf Laboratory is one of the real veterans of the trade. It was founded at Philadelphia by Henry Splitdorf, in the year 1858, for the purpose of carrying on experiments connected with projected improvements in telegraph instruments. The great problem in those days was to cut down the length of time required to send a message between New York and Chicago. This, Henry Splitdorf set about to accomplish, and he succeeded in doing so by the invention of the repeating relay which reduced the time required for the transmission of a message from New York to Chicago to about five minutes, whereas the former time was between five and seven hours.

This work being accomplished and the Western Union Telegraph Co. requiring a great number of instruments, Henry Splitdorf began the manufacture of them and so continued for several years. Finally, the Roentgen rays having been discovered, he went into the manufacture of large sized Rhumkorff coils for the use of the medical profession and experimenters.

Out of this small beginning grew the present enormous busines, and during the year 1885 his son Charles took up the management of the business which Henry Splitdorf had relinquished on account of advancing year, and the firm drifted gradually into the manufacture of the Splitdorf coil for ignition purposes. Following this the younger son, John, was taken into the business in the year 1889, and the Laboratory at 17-25 Vandewater street, New York City, was then established. It continued at that location until 1907, when having greatly outgrown its quarters the entire Laboratory was removed to the new factory, 261-265 Walton, the Bronx, giving about 60,000 square feet of space.

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FIRST OF THE NEW CROP OF LAWS

Massachusetts Getting Grist Ready for the Legislative Hopper—State Highway Commission Drafts a Bill.

Locking up the automobile that happens to upset the unwary wayfarer is the remedy some citizens of Massachusetts appear to be considering seriously as a means of checking the reckless or careless motorist. It was suggested at a meeting of the Twentieth Century Club in Boston last Saturday afternoon, while Robert Homans, attorney for the Safe Roads Association, was discussing the topic of adequate restriction for automobiles. Inflicting fines, he said, does not reach the owners of the machine in any adequate way.

"Why not put his machine in jail?" interrupted some one in the rear of the hall.

"That's exactly what I propose," was the reply. "Take the car and all the cars away from the reckless owner and he'll keep within the law after he's paid his penalty."

That the automobile laws of the State are not uniformly enforced was a view that was freely expressed by Mr. Homans and others, one of the reasons specified being that as roads now are built in Massachusetts they are constructed and kept in repair by local bodies and the laws governing their use are enforced by local police. The result is that there is no general control; but laws and ordinances and general conditions differ widely in various parts of the State.

Meanwhile, with the annual session of the "Great and General Court" near at hand there are the usual notes of preparation for amending the automobile law. The Massachusetts State highway commission has drafted and presented to Governor Guild for approval or revision, a new bill regulating the use of automobiles. This is one result of the conference of the highway commissioners of the New England States, which itself was a result of the conference of governors. The Massachusetts board was authorized to prepare a bill incorporating a number of approved suggestions, and the bill is to be urged on all the New England legislatures.

The commission has practically codified the laws on the subject in the New England States, and has adopted some ideas from States outside of this territory.

Some of the provisions are as follows:

A limit of 10 days for non-residents to operate automobiles in the State without registration, but with a new definition of "non-resident" which excludes from the class people who have a regular place of business or abode in the State for three months or more in the year; such persons have to pay registration fees, but get a half rate for the three months, July, August and September.

Numbers must be illuminated at night, but the Massachusetts requirement of numbered lamps has been eliminated.

An "adequate brake" specification is copied from the laws of New Jersey. A minimum limit of 16 years is fixed for private operators, and 18 for chauffeurs; all persons who receive compensation for work on automobiles are chauffeurs, must be licensed, and no person may employ an unlicensed chauffeur. "Dealers" include persons who let motor cars for hire, thus permitting them to take out "dealers' licenses."

New garage rules are incorporated in the bill, one being a requirement that motor cars shall be checked in and checked out of garages; this is so that an owner may know how often his car has been taken out and stop the unauthorized use of cars.

The proposed law imposes a speed limit of 25 miles, and allows judges to place on file complaints of speed above that limit if in his opinion it was unintentional or "that no person or property could have been injured thereby." A limit of eight miles an hour around curves and corners in also provided.

Registration fees are to be based on horse power; the uniform fee to be 50 cents per horsepower, graded in multiples of 10.

Morrell Sues the State Engineer.

That Briarcliff road race which was held last April, gave the promoters no end of trouble at the time and the trouble is not yet ended. It has just been made public that Robert Lee Morrell has instituted suit against State Engineer Frederick Skene, who at the eleventh hour, came very near preventing the race over the Westchester county course. The day before the contest was scheduled to take place, Skene demanded a cash deposit of $4,600 to cover any possible damage to the State roads used in the course. The Automobile Manufacturers' committee, in charge of the contest, offered to put up a bond for the amount, but Skene would accept nothing but cash. Morrell raised that amount and it was handed over to the State Engineer, under protest.

Subsequently, a portion of this amount was returned to the committee represented by Morrell, but it was only a very small portion—$582.14. The amusing feature of the suit is that Job Hedges, who represents Morrell and the committee, does not claim that the roads were damaged to any extent less than Skene declared, but contends that the State Engineer had no right to lay down his own rules to the Manufacturers' committee as to how the race should be run, and that he had no legal right to exact cash and collect it from the committee.

Engineer Skene declared last Saturday, that he was absolutely sure of his right to retain $4,000 of the amount deposited with him and that the suit was not causing him any worry whatever. The outcome of the case when it comes to trial will prove interesting to many.

ADMITS THAT THE LAW IS FAULTY

Commissioner Smith of New Jersey Replies to Protests—He Will Co-operate in Efforts for Fair Legislation.

Admitting that plans exist in New Jersey's law regulating automobiles, J. B. R. Smith, Commissioner of Motor Vehicles, replying to the protest of the Newark Board of Trade, and the alleged attitude of automobile interests outside of the State, against the law as it now stands, says in part:

"Perhaps no problem has so embarrassed all friends of good automobile laws as that attending the charge of a lack of comity between New Jersey and her sister States in the interchange of licenses, and we have all earnestly striven to find the correct solution.

"The department has given much study to this subject, and has had the hearty and loyal co-operation of the active representatives of the organized motorists.

"Some time ago I suggested the desirability of having a conference called at a convenient time, at which representatives of motorists from all the States interested in the subject, including those who make laws, as well as those who enforce laws, and all those whose interests are in any way affected by the use of motor vehicles on the highway, including farmers, tradesmen, manufacturers and tourists, might meet and in a proper spirit discuss the most efficient methods of automobile regulation. I am hopeful, indeed, expectant, that means may yet be provided whereby such a conference may be held.

"Of the ultimate outcome I have always been optimistic, and if I can be of any service in not only raising standards of legislation, but of actually securing a more efficient protection to the inalienable rights of all those who use highways, whether they be motorists, horsemen or pedestrians, I shall be more than repaid for the effort. This problem is capable of solution. New Jersey will solve it, and we are all working for that end."

One Way of Avoiding Fines.

One way to avoid speed fines is to follow the example of a chauffeur named Alexander Lee, a native of Norway, who, until recently worked in Detroit. Lee was employed by the Ford Motor Co. and made such brilliant progress in the speed line, that finally he was arrested for maintaining a clip of 30 miles an hour on the boulevard. Lee said he knew of a neat way to avoid paying a fine or serving a sentence for the offense and it was found to work very well, for when the case was called last week, it was learned that Lee, who had attained such high proficiency in the driving art, had returned to dear old Norway.

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NOVA SCOTIA PLANS BETTER ROADS

Probable Effect Upon Automobiling in the Province—Poor Highways a Reason for Present Onerous Restrictions.

Motor cars have not been in much favor in Nova Scotia in the past, says Consul General David F. Wilber, of Halifax, in a report to the State Department at Washington. He gives as a reason the poor condition of the roads throughout the province, but there has been a decided effort to over come this defect, which is as much of a drawback to the driving of horses as it can be to the operators of automobiles. At the last session of the provincial legislature, he says, "a bill passed authorizing the establishment of a department of roads and appropriated for the improvement of roads $175,000, and also $25,000 for small bridges.

"There are 97 automobiles registered at the office of the provincial secretary," he continues, "divided as to origin as follows: United States States, 61; Canada, 32; England, 3; Scotland, 1. According to the population and wealth of Nova Scotia this is a poor showing, and is largely due to defective methods used in introducing this line of goods. The Canadian makes are built on the same lines as those made in the United States, most of them being manufactured by American firms having factories in Canada. The predominating style is the runabout and the lighter touring cars, from 8 to 30 horsepower.

"While improved roads will do much to increase the sale of motor vehicles, the last legislature passed another law which will have a tendency to interfere somewhat with the general use of automobiles in some localities. This law gave to each local government the right to regulate the running of automobiles in their respective jurisdictions. It was claimed while the bill was up for consideration that owing to the narrow roads so prevalent in Nova Scotia, it was dangerous for farmers with teams to meet automobiles, as the drivers of the latter disregarded the rights of the former, which has resulted in accidents. Of the 24 municipalities (districts), 34 towns, and 2 cities in the province, four municipalities and two towns have regulated the running of automobiles and prohibited them on the following days: Pictou—Sunday, Tuesday, Wednesday, Thursday and Saturday; Kings—Thursday, Saturday and Sunday; West Hants—Tuesday, Thursday, Saturday and Sunday; Yarmouth—Saturday; Town of New Glasgow—Sunday, Tuesday, Thursday and Saturday; Town of Pictou—Sunday, Tuesday, Wednesday, Thursday and Saturday.

"Medium and low priced cars are mostly in use, and there is no question but what a larger business could be done here if the market were properly looked after. The duty on automobiles from the United States is 35 per cent ad valorem; from Great Britain a duty of 22½ per cent. ad valorem is charged."

Chicago Eager for Stock Chassis Race.

Chicago is more anxious than ever to get the stock chassis race for the Jefferson De Mont Thompson trophy, next spring. The contest committee of the Chicago Automobile Club has laid out a new course 22 miles in length, that is declared by persons who ought to know, to be 50 per cent. better than the circuit over which the Briarcliff race was run last April—an opinion which would probably not be disputed by anyone familiar with the Westchester county course. President Cobe, of the C. A. C., wants Mr. Thompson to visit Chicago and personally inspect the proposed circuit in Indiana, which is macadam the entire distance. The club has had taken a number of photographs of the course to submit to the American Automobile Association, when it applies for a sanction to hold a stock car race.

Jackson Heads Grand Rapids Club.

At the annual meeting members of the Grand Rapids Automobile Club elected James R. Jackson, president for the ensuing year. Jackson has been identified with motoring for some time and at present is vice-president of the Michigan State Automobile Association. Other officers chosen were, first vice-president, Louis C. Parmenter; second vice-president, George J. Henzelman; secretary, Dr. Warnshuis, and treasurer, Dr. Willard Burleston. These officers and Dr. D. Emmet Welsh and A. A. Barber, will comprise the board of governors.

Los Angeles Dealers Plan a Show.

The last week in January has been selected for an automobile show in Los Angeles, Cal., to be run by Dick Ferris, on behalf of the Automobile Dealers Association of Southern California. The entire basement of a very large building at Broadway and Eighth street has been selected for the exhibition. So large is the space that a real automobile race in the show room is promised as an amusement feature to draw the public.

Manager Selected for St. Louis Show.

To manage the third annual automobile show to be held in St. Louis, Mo., February 15 to 20 inclusive, Lloyd Rickert, secretary of the American Baseball Association, has been selected. The exhibition will be given in the new Coliseum building, Jefferson and Washington avenues.

Memphis Show Scheduled for March.

Memphis, Tenn., is to have an automobile show, which will probably be held in the Auditorium building. The dates chosen are March 10 to 13, inclusive.

SEASONING JUSTICE WITH SENSE

Massachusetts Magistrate Says Skid Chains Can't Damage Ice Covered Roads—He Pigeonholes a Prosecution.

Judge Bruce, in the district court at Malden, Mass., on December 17, held the opinion that while it was a technical violation of the law to drive a car equipped with skid-chains or metal studded tires, a motorist should not be fined for piloting a car thus equipped if there is snow on the ground.

The local police arrested Howard A. Lothrop, Joseph L. Goodale and Matthew C. Brush, all of Boston, for driving over the Parkway through Malden and Medford with tire-chains attached. Judge Bruce immediately asked the park officers if the road was covered with snow or ice at the time the offenders drove through it and was told that it was. The court asked if there were any bare spots visible and the officers replied in the negative. With that, the judge decided to place the case on file and while he could not discharge the defendants or dismiss the case, on account of the violation, he held that roads could not be damaged by chains when there was thick snow on the ground and firmly believed that when roads are slippery, chains or studded bands are a necessity. He told the drivers, however, that they and all all other motorists using chains, would have to do so at their own risk, in event of encountering bare spots in the road, in which case they are liable to arrest and fine.

This unique decision highly pleased the owners, who expect to take the risk when more snow falls.

Toronto Provides for Foreign Exhibitors.

For the benefit of exhibitors from "foreign" countries, including the United States, the management of the third annual automobile show at Toronto, Ont., has arranged to make the exhibition building a bonded warehouse, where exhibitors' goods will be received duty free. The show, which will be given under the auspices of the Ontario Motor League, will take place in the St. Lawrence Arena, February 18 to 25. The manager is R. M. Jaffray, 1 Wellington, West, Toronto.

Portugal's Automobile Census Small.

Portugal at present boasts in all of 838 automobiles, according to a recent report, of which 501 are permanently located at Lisbon and 148 in Oporto. In an effort to stimulate the movement to renewed vigor, however, it is stated that the Royal Portuguese Automobile Club is endeavoring to secure a reduction in the import duties on cars, tires and component parts, and a simplification of the customs formalities requisite for admittance of the goods.

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The Inter-State

The INTER-STATE Automobile is built for the intelligent purchaser who wants the high quality which heretofore has been found *only* in *high-priced* cars, but who does not want to pay from twenty-five hundred to five thousand dollars.

The INTER-STATE makes it unnecessary for such purchasers to pay such prices. It is a *permanent* car, embracing every essential factor of worth in automobile design, style, comfort, speed, endurance, dependable materials and workmanship. And it is sold at a price—$1750 complete, *including Eisemann Magneto*—but little higher than the "good-enough-until-later" cars.

There is no economy and most assuredly no automobile satisfaction in buying a car that you want to discard the second season for a *real* car. Especially since you can buy the *real* car, the *satisfying permanent* car *this* season for just a little more money than a temporary car.

In justice to your own best interests, let us urge you not to *think* of spending your money for a "cheap" car, or even a higher-priced good car, until you have seen the INTER-STATE. We are glad to let you be the sole judge as to its worth at $1750.

Dealers and Agents will appreciate the opportunities opened to them by the INTER-STATE. Write for our attractive proposition.

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At the Shows The full line of Inter-State automobiles, including Standard Touring Car, Demi-Tonneau, Double Rumble Roadster, Single Rumble Roadster and Tourabout, will be exhibited at Grand Central Palace, New York, December 31-January 7, and at the Coliseum, Chicago, February 6-13.

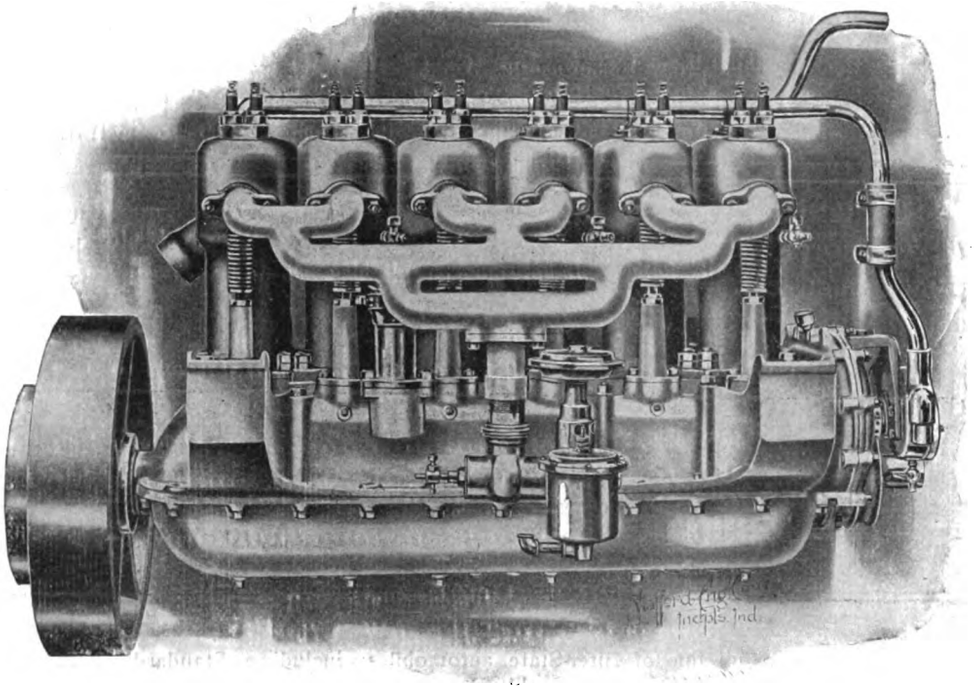
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NOTICE to MANUFACTURERS of EXPLOSION ENGINES used for any purpose

I am the owner of the Letters Patent of United States No. 617,806, granted to F. E. Canda, January 17, 1899, for electric Igniter for Explosion engines, and letters Patent No. 905,625 granted to Elmer Apperson, December 1st, 1908, for improvements in Explosion engines.

Briefly stated, these patents cover broadly the use of two or more separate electric igniting devices, provided with separate circuits and means of throwing the igniting devices into or out of action simultaneously or independently; as well as covering the use of two or more spark plugs or sparking points having electrical connection with a magneto and battery with means of throwing the spark plugs or points into or out of operation.



MOTOR ILLUSRATING APPERSON SYSTEM OF IGNITION UNDER PATENTS 617,806 AND 905,625.

All parties now using or desiring to use this system of ignition are invited to negotiate with me. I have no desire to unnecessarily embarrass any one, but INFRINGERS on my patents will be legally and vigorously prosecuted.

ELMER APPERSON.

Apperson Bros. Automobile Company, Kokomo, Ind.

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The Week's Patents.

899,186. Internal Combustion Engine. William Rabsilber, New York, N. Y. Filed June 24, 1907. Serial No. 380,380.

1. The combination of a reservoir for comprssed air; a reservoir for fuel; an internal combustion engine connected with both said reservoirs; an air compressor connected with said reservoir for compressed air; means controlling the supply of compressed air and fuel from said reservoirs to said engine; and means for heating the entire contents of one of said reservoirs before admission to said engine, said reservoirs being separate and free from communication with each other.

899,216. Internal Combustion Engine. Thomas W. Hendry, San Francisco, Cal. Filed Nov. 6, 1906. Serial No. 342,247.

In an internal combustion engine, a cylinder having discharge ports, and an inlet port, a piston having a laterally extended straight wall passage arranged to communicate with the inlet port, the piston passage terminating in a short nozzle at the center of the piston head in the line of the axis of said piston, the wall of the said passage opposed to and distant from said port being provided with a curved pocket concaving or bulging away from said inlet port and providing for the impingement of the charge thereagainst and by which the force of the stream of incoming gas is broken and the stream is thence deflected through the nozzle in a straight line following the axis of the cylinder.

899,253. Vehicle Guiding Means. Leslie S. Hackney, St. Paul, Minn. Filed Aug. 9, 1907. Serial No. 387,771.

1. A vehicle track having an upper or tread surface to receive the vehicle or car wheels, a yoke mounted on the frame of the vehicle and having arms yieldingly held toward said track, wheels mounted on said arms and having flat treads adapted to rest and normally travel on the top of said track, said wheels having flanges on one side arranged to extend down beside the rails and contact with the inner faces thereof, whereby the vehicle wheels will be held on the track and said flanged wheels revolving in planes parallel substantially with the plane of the vehicle wheels, substantially as described.

899,331. Wheel for Vehicles. William H. Scrymgour, London, England. Filed Aug. 12, 1907. Serial No. 388,208.

In vehicle wheels a coiled, or spiral springy metal piece, secured at, or near, one end, to the hub, and at, or near the other end, to the interior of the outer part or rim, and metal springs to give resiliency, and strength in the space between the hub and the interior of the outer part, or rim, and bearing on the said coiled or spiral springy metal piece; substantially as herembefore described.

899,332. Spring Wheel for Vehicles. William H. Scrygour, London, England. Filed Sept. 30, 1907. Serial No. 395,191.

1. In a vehicle wheel comprising discs mounted free to rotate on an axle and bolted together, the combination therewith of blocks or shoes pivotally mounted in said discs near the periphery thereof, an elliptical spring fixedly carried by said axle to be engaged with by the wheels of said block on the minor axis of said spring to cause said blocks to have engagement with the road surface for a fractional space of time to support the load.

899,333. Vehicle Wheel. Isaiah C. Scudder, New York, N. Y. Filed Feb. 16, 1907. Serial No. 357,637.

1. In combination, a vehicle wheel having an outer metallic band, a detachable rim, oppositely disposed locking rings adapted for locking said rim to said metallic band, and means for simultaneously forcing said locking rings into place, said means including a plurality of radially movable U-shaped clamps.

899,425. Resilient Wheel. James E. McQuilkin, Westmoreland county, Pa. Filed Feb. 4, 1908. Serial No. 414,230.

1. In a wheel, the combination of a boxing formed in its periphery with a plurality of sockets, a hub encircling the boxing and spaced therefrom, an annular cushion interposed between the hub and the boxing, a tie band carried by the cushion and formed with inwardly disposed lugs seated in the respective sockets of the boxing to prevent the cushion from rotating relative thereto, and means for rigidly securing the cushion to the hub.

899,430. Means for Raising Vehicle land. Filed July 15, 1907. Serial No. 383,-Bodies. Arthur J. Pack, Brighton, Eng-738.

In a means for raising vehicle bodies, the combination of a chassis, a vehicle body hinged thereto, a jointed supporting leg pivoted to said chassis and said body, and adapted to be folded over upon itself when not in use, and a telescopic spring support pivoted to the chassis at one end, and to one of the members of the leg at the other end, one of the folded members of said leg being provided with means to prevent said members from striking against each other, substantially as described.

899,468. Spring Repairer. William R. Petze, Brooklyn, N. Y. Original application filed Feb. 16, 1907. Serial No. 357,715. Divided and this application filed Sept. 5, 1907. Serial No. 391,478.

1. A device for repairing semi-elliptic vehicle springs, consisting of a tie-piece shorter than said spring and having its major portion spaced away from said spring and having means near one of its ends for attachment to a vehicle, and means for fastening said tie-piece to said spring at one side of a break in the spring.

899,498. Starting Mechanism for Gas Engines. William K. Andrew, Milwaukee, Wis., assignor to International Harvester Company, a Corporation of New Jersey. Filed Nov. 26, 1906. Serial No. 345,245.

1. A starting mechanism for gas engines, including, in combination, a supplemental valve casing having an annular chamber therein communicating with a supply of compressed air and the engine cylinder, an inlet valve controlling the admission of air to said chamber and opening against the pressure of air from the source of supply, a supplemental exhaust port communicating with said chamber and the engine cylinder, a valve controlling said exhaust port and opening against the pressure of air in said chamber, said valves being opened by a moving part of the engine and closed by the pressure of air.

899,526. Transmission Mechanism. Adam F. Glaser, Jersey City, and John Olsen, Whippany, N. J., assignors of one-third to George W. Crane, Rahway, N. J. Filed July 20, 1907. Serial No. 384,824.

1. A transmission mechanism comprising a driving shaft provided with a worm, a casing inclosing said worm, a worm con-

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nected with said casing, a valve member surrounding said worms, and means for adjusting said valve member with respect to said worms to cause a fluid like substance operated by said worms to cause rotation of said casing.

899,534. Universal Joint. Ernst G. Hoffmann, New Rochelle, N. Y. Filed June 19, 1907. Serial No. 389,683.

1. A universal joint comprising an inner terminal member provided with pivot bearings, an intermediate member embracing the inner member and provided with internal bosses to receive the pivot bearings of the inner member and with external pivot bearings, and a ring-like outer terminal member having internal bosses with slotted walls to receive pivot bearings of the intermediate member and bearing rings to retain the pivot bearings in the slotted bosses.

899,537. Automobile. Thomas B. Jeffery, Kenosha, Wis. Filed Aug. 25, 1902. Serial No. 120,924.

1. In an automobile, the combination with the frame for supporting the engine comprising side beams, a cross beam supported at its ends by the side beams and a brace extending above the cross beam and also supported at its ends by the side beams, a socket secured to the cross beam and brace of said frame, a steering rod supported within said socket whereby the body of the vehicle may be removed without detaching the steering rod support.

899,611. Wheel. William H. Parham, Paducah, Ky. Filed May 15, 1907. Serial No. 373,796.

1. In a wheel of the class described, the combination of a rim, a hub, spokes secured to the hub and to the rim and including resilient loops, and tension devices movable radially of the wheel between the rim and the hub and connected to one of the said parts and engaging the loops of the spokes to vary the tension of the latter.

899,618. Starting Device for Gasolene Engines. Frank Reynolds, Syracuse, N. Y. Filed Feb. 17, 1904. Serial No. 194,000.

1. In a gasolene engine, the combination with the explosion cylinder, electric spark plug therein, and exhaust means, of a starting device comprising a tank for storing explosive mixture under compression, a passage leading from the tank to a said cylinder, a valve controlling the supply of compressed mixture to the passage, a valve controlling the admission of mixture from the passage into the cylinder, electric contacts, an electric circuit maker and breaker adjacent to said contacts, and a manually operated means for actuating said valves and circuit maker and breaker.

899,620. Tire Inflater for Automobiles. Peter J. Ross, Trevor, Wis.; Donald C. Ross, Rydnre, N. D., administrator of said Pter J. Ross, deceased. Filed Jan. 2, 1908. Serial No. 408,957.

1. An automobile tire inflater comprising an air pump adapted to be coupled to the engine shaft when desired, in combination with a flexible hose of suitable length extending from said air pump and a coupling member on the free end of said hose for attaching the same to the tire plug, said coupling member comprising a tubular handle portion attached to said hose and a transverse tubular portion arranged at the opposite end thereof forming a T shaped member, a coupling nipple arranged at one end of said transverse portion a safety valve arranged at the opposite end thereof, the first said tubular portion having a discharge opening, a valve for closing said opening and mounted upon a suitable parsaid lever being arranged substantially parallel with said handle portion and adapted to be simultaneously grasped therewith to manually depress the valve to close said discharge opening substantially as described.

899,668. Spring Wheel. Henry E. Heaton, Oroville, Cal. Filed May 7, 1907. Serial No. 372,351.

In a spring wheel, the combination of a hub, a hollow annular rib upon the hub and formed of sheet material having the edges thereof extended outwardly to form flanges which are secured to the hub, a body portion comprising an inner rim, a reinforcing casing of U cross section applied to the inner rim of the body portion of the wheel to the annular rib of the hub, alternate strips being arranged in a reverse manner and each of the spring strips having one of their ends secured to the rim upon one side of the whee while the opposite end is secured to the rib on the other side of the wheel, the end portions of the spring lying in approximately parallel planes while the intermediate portion is reversely curved.

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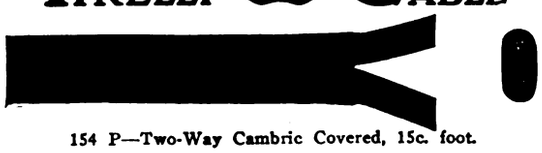
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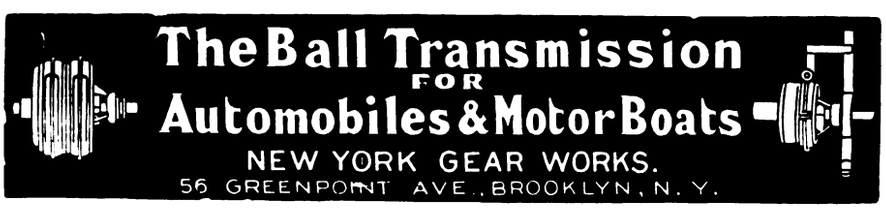
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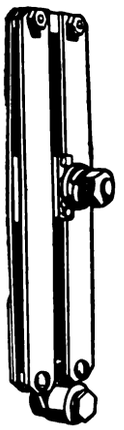
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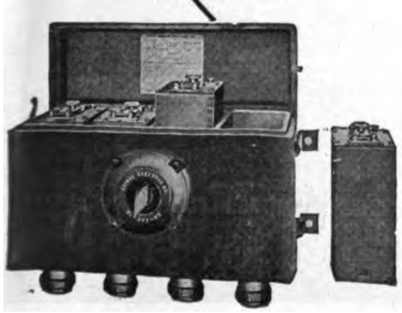
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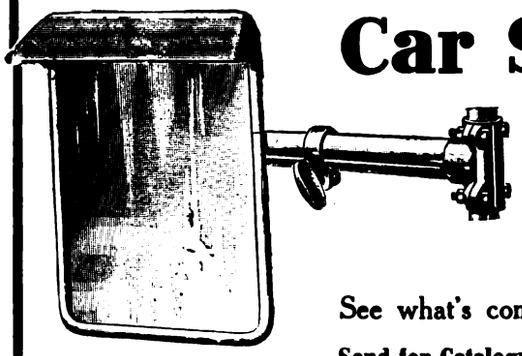
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In order to sell hereafter this highest of all high-grade cars at the prices of the cheaper cars, we have **increased our working capital by $350,000** and will **double our factory output.** Send for our book of customers' letters telling of the experiences of the most prominent men of affairs in this country with their Matheson cars, covering thousands of miles of service everywhere.



	New Price.	Former Price.
50 H. P. 1909 Touring Car	$4,500	$5,500
50 H. P. 1909 Roadster	4,350	5,000
50 H. P. 1909 Runabout	4,350	5,000
50 H. P. Limousine	5,500	6,500
50 H. P. 1909 Landaulet	5,500	6,500

MATHESON AUTOMOBILE CO.
Main Sales Office, 1886-1888 Broadway, NEW YORK CITY
Dealers wanted in all open territory.

SUPPLEMENTARY SPIRAL SPRINGS

¶ Cars are like men in that it takes a study of them to realize their possibilities.

¶ We have made a study of the spring question and can help you realize to the full the easy-riding possibilities of your car. The use of Supplementary Spiral Springs are a duty you owe to yourself. They provide spring insurance and spring comfort, effectually guarding against shocks to your pocketbook and passengers.

¶ Many thousands of the S. S. S. are in use by just as many satisfied users. Better be one of them NOW.

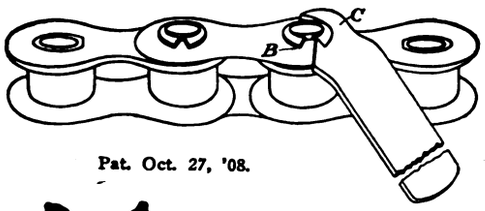
¶ Your dealer or garage can fit you out in a few hours' time.

SUPPLEMENTARY SPIRAL SPRING CO.
Motor Mart, New York 4555 Delmar Ave., St. Louis, Mo.

Empire Tires
WEAR LONGEST

EMPIRE AUTOMOBILE TIRE COMPANY, Trenton, N. J.
BRANCHES—Newark, 264 Halsey St.; Detroit, 842 Woodward Ave.; Boston, 292 Devonshire St.; Chicago, 20 La Salle St., 1301 Michigan Ave.; New York, 73d St. & Broadway; 148 Chambers St. AGENCIES—Pittsburg, Consumers' Auto Supply Co.; Kansas City, Mo., Empire Tire & Rubber Co.; Atlanta, Ga., Dunham Rubber Co.; Cleveland, O., Motor Supply Agency Co.; Norfolk, Va., Wm. H. Grover; Denver, Denver Auto Goods Co.; Jacksonville, Fla., Savell Rubber Co.; Philadelphia, Penn Auto Supply Co.; Los Angeles, Cal., Pacific Elec. Wks.; Buffalo, N. Y., Empire Sales Co.; Minneapolis, Empire Tire & Rubber Co.; Savannah, Ga., Harris Tire Co.; New Orleans, La., H. A. Testard.

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Pat. Oct. 27, '08.

THE BALDWIN IMPROVED DETACHABLE CHAIN

is the best design mechanically there is on the market. It will run at the highest rates of speed without the separating of the clips shown at "B." These clips can be removed and replaced without injury, and as easily as the cotter pin. We furnish with each chain a tool shown in "C" for removing the clips, although the same is not absolutely necessary.

BALDWIN CHAINS AND SPROCKETS

SPROCKETS We are prepared to make quotations on sprockets in quantity at low rates.

THE BALDWIN CHAIN & MFG. CO., Worcester, Mass.

AGENTS:

H. V. GREENWOOD, 166 Lake St., Chicago, Ill.

H. D. SIMMONS, 1717 Broadway, New York, N. Y.

M. A. BRYTE, 718 Mission St., San Francisco, Cal.

"LONG-ARM" TRANSMISSIONS

THREE speeds and reverse, selective types. The best of material and workmanship. Our experience in gear cutting and manufacturing Automobile Parts enables us to equal the best transmissions built. Let us figure on your requirements.

We also build a complete line of

AXLES, CLUTCHES STEERING REACHES HAND LEVERS, ETC.

The "Long-Arm" System Co.,

CLEVELAND, O.

Sales Dept., THE AMERICAN DISTRIBUTING CO., American Trust Bldg., Cleveland, O.

THE Selden Car FOR 1909

enters upon its second year with a clean record. No "first year" car has ever earned a better reputation or made a better showing.

THE CAR OF MODERATE PRICE

Touring Car Limousine **$2000** Roadster Landaulet

4 cylinder, 28-30 horsepower, shaft drive, selective transmission, metal body, pressed steel frame, excellent hill climber, fine finish and style, roomy tonneau, luxurious upholstery, easy riding, smooth running, economical in up-keep, in fact, a high grade car in every particular.

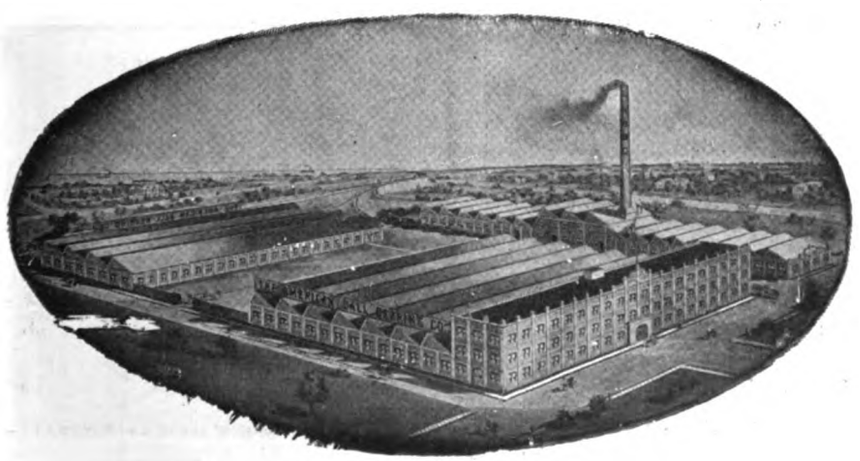
The "Silent Selden"

Agency proposition now ready. Send for catalog and specifications.

SELDEN MOTOR VEHICLE CO.

Rochester, N. Y.

Member A. L. A. M.



The output of complete Front and Rear Automobile Axles of this plant exceeds the capacity of all competition combined.

THE American Ball-Bearing Co.

L. S. & M. S. Ry. & Edgwater Park

CLEVELAND, OHIO, U.S.A.

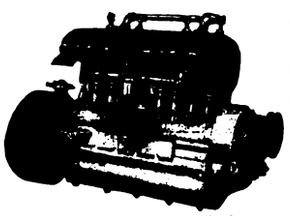
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Packard Ignition Cable

If your car is wired with PACKARD ENAMELED IGNITION CABLE you can be dead sure you will have no trouble so far as the wiring is concerned.

THE PACKARD ELECTRIC COMPANY, 303 Dana Ave., WARREN, OHIO

"CONTINENTAL" MOTORS ARE STANDARD



Get our quotations on high grade two and four cylinder motors, 10 to 45 horsepower. They are equipped with self-contained oiling system and ready for attaching magneto. Highest grade workmanship, efficient, durable and simple. Also clutches and trans. missions. Send for catalogue.

CONTINENTAL MOTOR MFG. CO., Muskegon, Mich.

K. FRANKLIN PETERSON, Western Representative, 166 E. Lake St., Chicago, Ill.

T. J. WETZEL, Eastern Representative, 29 West 42d St., New York, N. Y.

Get Rid of Tire Troubles
Try a Set of
G&J TIRES

TRUFFAULT-HARTFORD
Trade
SHOCK ABSORBER
Mark

The Device that made Safe, Speedy and Comfortable Automobiling Possible.

Write for catalogue, Department D.

HARTFORD SUSPENSION CO.,

E. V. Hartford, Pres. 145 Bay St., Jersey City, N. J.

AVOID ACCIDENTS
by using the
Wridgway No Glare Shade

which adds to the efficiency of the lamps, and keeps glare from blinding other users of the highways. Can be fitted to any existing lamp.

PEERLESS MOTOR CAR CO.,
220 to 224 W. 41st St., NEW YORK

ESTABLISHED 1844.
SCHRADER
UNIVERSAL VALVES
TRADE MARK REGISTERED APRIL 30, 1895.
The Standard American Valves for Automobile, Bicycle & Vehicle tires
Manufactured by
A. SCHRADER'S SON, INC.
28-32 Rose St. New York, U.S.A.

DIAMOND CHAINS
drive them care more miles per dollar cost than any others
TRADE MARK
DIAMOND CHAIN & MFG CO.
189 W. Georgia St., Indianapolis, Ind.

Users of
Invader Oil



THE OIL THAT GRAPHITIZES
are responsible for its popularity
YOU NAME THE CAR
WE'LL
NAME THE GRADE
MADE ONLY BY
CHAS. F. KELLOM & CO.
113 Arch St., Philadelphia
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284 Columbus Avenue.

A SUPERB LINE OF CARS—
THE JACKSON
"No Sand Too Deep—No Hill Too Steep."
2-Cylinder and 4-Cylinder
Runabouts, Roadsters, Touring Cars,
18 H. P., 24 H. P., 30 H. P. and 36 H. P.
Prices, $850, $950, $1,250 and $2,000.
JACKSON AUTOMOBILE CO., Jackson, Mich.

Automobilists Know Exactly How Far and How Fast

Attach a Warner Auto-Meter to the dash of your car. Its record is infallible in any weather—on any roads. Write for details.

WARNER INSTRUMENT CO.,
337 Wheeler Ave. BELOIT, WIS.

THE GYROSCOPE CAR
The Simplest Automobile in the World.
$750—The Price—$750.
GYROSCOPE AUTOMOBILE CO. (INC.)
Gyroscope Bldg.,
231 West 54th St. New York City.

HAVE YOU SEEN
THE PERFECTION WRENCH?

The newest and best wrench made; all steel—great strength; instantly adjusted; easily and quickly operated; positive grip; immense time, trouble, and temper saver; best "all round tool" ever offered for sale.

"You will want one when you see it."

For circular address,

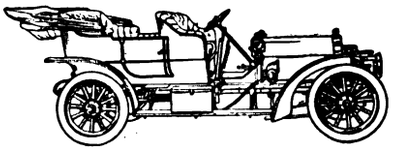
THE PERFECTION WRENCH CO.,
Box 426, PORT CHESTER, N. Y.

PENNSYLVANIA

1909

The new type "D" "25."

A small edition of the type "C," designed for those who want a lighter car possessing the pull and general adaptability of the successful Pennsylvania "50."



"D" 25 (A. L. A. M. rating 29)

Roadster, $2,000. Baby Tonneau or Touring car, $2,100.

The Famous Pennsylvania type "C" "50" remains unchanged, of both construction and price.

Baby Tonneau and Touring Car, $3,000.

All models equipped with Magneto and Gas Tanks.

PENNSYLVANIA AUTO MOTOR CO.,
Bryn Mawr, Pa.

MORGAN & WRIGHT TIRES
ARE GOOD TIRES

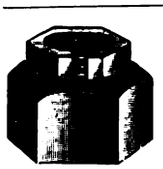
I HAVE A NORTHERN LIMOUSINE which for the best of reasons I want to sell quickly.

It is in perfect condition, having been driven less than 500 miles, and I think it's one of the sweetest running, handsomest appearing, town cars made.

Tires are brand new and the varnish isn't damaged—in fact the car is just as good as new when it sold for $2,500 and I'll sell it for half—$1,250.

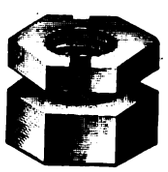
Address E. M. M., 382 Pennsylvania Ave., Detroit, Mich.

Studdard-Dayton
ONE Quality for ALL Models
ONE Price for ALL Buyers
Write for 1909 Catalog.
THE DAYTON MOTOR CAR CO.,
Dayton, O.



A Necessity On Automobiles—WHAT?
COLUMBIA LOCK NUTS

CANNOT shake loose. They add an important factor of safety and give a feeling of security. Columbia Lock Nuts are the best kind of accident insurance. Used by most makers of the best cars and by leading railroads, etc. Send us a two-cent stamp, size and thread of the bolt, and we will forward a Columbia Lock Nut for it.



COLUMBIA NUT & BOLT CO., Inc., Bridgeport, Conn.

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WHITLOCK RADIATORS
INTAKE, EXHAUST AND WATER PIPES
Whitlock Coil Pipe Co. Hartford, Conn.

GIBNEY SOLID TIRES
CONTINENTAL
Pneumatic Tires
Automobile Accessories of every description.
James L. Gibney & Bro., Philadelphia, Pa., U.S.A.

WE WILL NOT
accept your contract unless we can give you the delivery you require. We will not accept more contracts than we can fill with proper attention to each. We make Pressed Steel Frames and Automobile Stampings.
THE HYDRAULIC PRESSED STEEL CO.,
Cleveland, Ohio.

CLEVELAND SPARK PLUGS
"They Shoot a Flame."
CLEVELAND SPARK PLUG CO.
CLEVELAND, OHIO

Continental
READY FLATED TIRES
Universally approved by all motorists.
CONTINENTAL CAOUTCHOUC CO.,
1788-90 Broadway, New York City.
WRITE FOR PRICES OR INFORMATION

Columbia Gasolene and Electric Automobiles
ARE MADE BY
ELECTRIC VEHICLE Co., Hartford, Conn.

The "Gotham" STA-RITE will end your spark plug troubles. Soot can't stick to the porcelain.



Won't short-circuit. Never leaks. Can be taken apart and cleaned with ease. Of dealers, or direct, $1.00.
THE R. E. HARDY CO., 25 W. 42d St., New York.

The PULLMAN
4-40 Roadster. Price, $3,000.
that made the run from Philadelphia to Savannah, Ga., March 5th to 18th, through mud up to the radiator, beating all previous records.
YORK MOTOR CAR CO., York, Pa.

$11,000,000
worth of experience behind the new
$1,500 MITCHELL
This price includes $300 worth of extra automobile value not included in other cars selling at this price. Learn what it is. Write to-day for detailed description.
MITCHELL MOTOR CAR CO.,
573 Mitchell St., Racine, Wis.
Standard Manufacturers A. M. C. M. A.

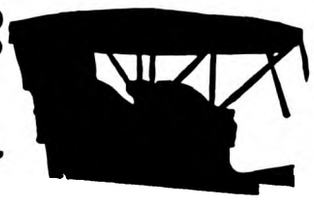
It is not possible for any chain to be better than
BALDWIN CHAINS
BALDWIN CHAIN & MFG. CO.,
Worcester, Mass.

The Acme JUSTIFIES ITS NAME
THE ACME MOTOR CAR CO.
Reading, Pa.

PALMER SINGER
1620-22-24 Broadway, New York
1321 Chicago, Ill. Michigan Ave.,
PALMER & SINGER MFG. CO.

MICHELIN
ITALY. AMERICA.
MICHELIN TIRE COMPANY
MILLTOWN, N. J.

SPRINGFIELD TOP (Pat. 1895)
Aluminum Bodies
SPRINGFIELD METAL BODY CO.,
366 Birnie Ave.,
Springfield, Mass.



THOMAS SHOCK ABSORBERS
on your automobile mean more comfort, speed, safety, economy. Prove it at our expense. 30 days free trial.
BUFFALO SPECIALTY CO.,
340 Ellicott St. BUFFALO, N. Y.

Studebaker
Gasoline and Electric—for Pleasure and Business
Studebaker Automobile Co., South Bend, Indiana



Steel Tires
Full of Air.
Tire expense cut in two.
Cannot Blow Out, Rim Cut or Puncture.
As Flexible as Rubber
Anti-Skid.
That part of a tire with a blowout or a rim cut in it will last longer than any other part if encircled by a few sections of steel.
Thousands in use.
Kimball Tire Case Co.
172 Broadway
Council Bluffs, Iowa

THE MOTOR WORLD PUBLISHING COMPANY
154 Nassau Street, New York

Enclosed find $2.00 for which enter my subscription to
The Motor World
for one year, commencing with the issue of _____

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STEPNEY
SPARE WHEEL

Every motorist should carry a "Stepney" and avoid all troublesome delays caused by punctures and blowouts. Write for Catalogue D.

The Only Cure for Tire Troubles

DISTRIBUTORS—AMERICAN STEPNEY SPARE WHEEL CO., 1773 Broadway, New York Ciy. AUTO SPARE WHEEL CO., 22d, Oak and Gillham Blvd., Kansas City, Mo. EXCELSIOR SUPPLY CO., 1436 Michigan Ave., Chicago, Ill.



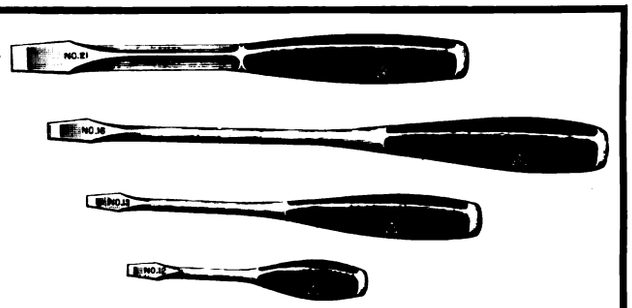
For Automobile Bodies, Dashes, Guards, Bonnets, Battery Boxes, Drip Pans, Mufflers, Etc.

STRONG—DURABLE
CALELESS—RUSTLESS
SMOOTH—PAINT ADHERES FIRMLY

A Metal That's A Time and Money Saver

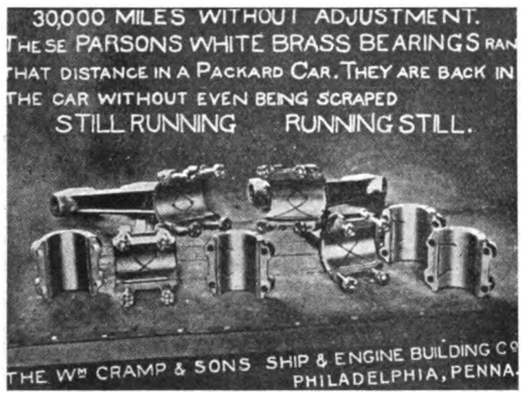
THE STARK ROLLING MILL COMPANY, CANTON, OHIO

ALL STEEL



The newest thing in screw drivers is the B. & S. "all steel." Complete in ONE PIECE, handle and all. Light and durable. The most sensible screw driver ever made. Don't fail to get circular.

THE BILLINGS & SPENCER CO., Hartford, Conn.



Cramp — Metals

"Oldest Makers in America"

$3000

HAYNES

Kokomo, Ind.

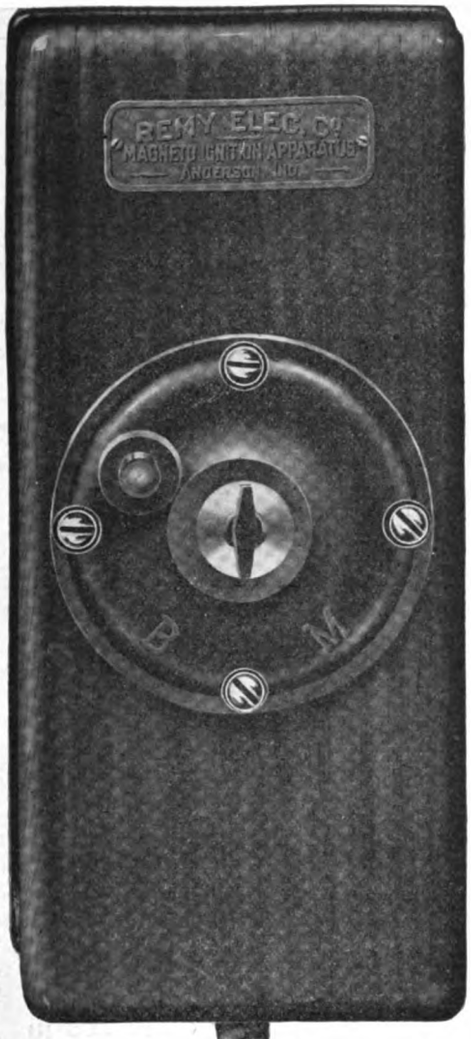
Model B—Brush Runabout

A CAR OF SIMPLE DESIGN MADE WELL
NOT A COMPLICATED DESIGN MADE CHEAPLY

Its records and the opinions of its users speak more loudly than self praise. Agencies for 1909 are being closed rapidly. Much good territory still open.

BRUSH RUNABOUT COMPANY, Detroit, Mich.

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This is the Magneto that Stands the Most Abuse—See it at the New York and Chicago Automobile Shows

The Remy High Tension Magneto is designed especially for American Automobiles. The broadest margins for abuse—both electrical and mechanical—are afforded on the Remy. It is "fool proof."

Positive firing is assured by the Remy under conditions of oil, dirt and water that puts its competitors out of commission.

It will fire the motor properly running at a lower speed than any other Magneto in the world. This is a big point in cities, where cars must be run at low motor speed as often as high motor speed.

Anybody can install a Remy whether he is a skilled mechanician or not.

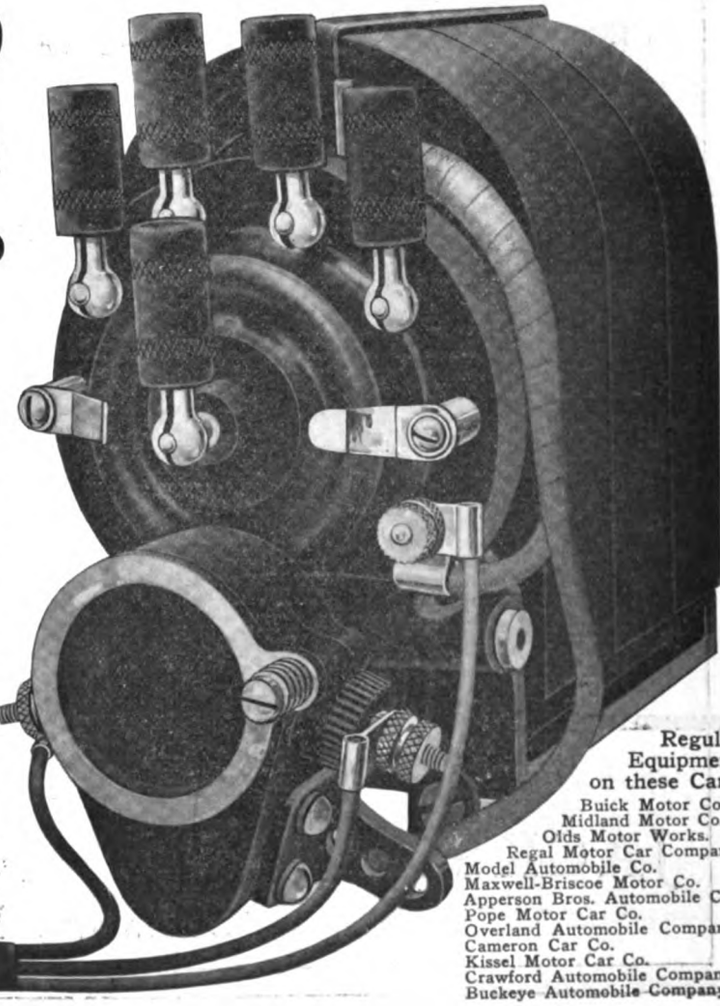
This is the Magneto without brushes. No brushes to wear out, give trouble or be replaced.

The Remy

1909

High

Tension Magneto



Double ignition with one set of spark plugs is another Remy feature originated by us.

Starting may be done from the seat of the car without cranking—with the greatest certainty of any system starting from the spark.

We have sold on minimum specified deliveries over 17,000 Magnetos for 1909 cars. More of these Magnetos are already sold than all other makes combined.

With automobile manufacturers continually striving to build better cars than their competitors, there is a reason for their adopting the Remy Magneto.

It is designed by engineers who have been connected with automobile work since its beginning and embodies ideas suggested or approved by the largest manufacturers.

Our factory was built especially for Magneto manufacturing and is the largest of its kind in the world.

In the hill climb endurance run—speed contest—in all kinds of tryouts everywhere, the Remy has more victories to its credit than all other makes combined.

Write us today.

This is a sample of the letters we receive daily:

Boston, Mass., Sept. 30, 1908.
"Remy Electric Company.
We have recently entered several racing events and our cars, equipped with your ignition apparatus have all made wonderfully good records.
At Montreal our Model 5 had captured eight out of nine events, beating Christy and Barney Oldfield's machine and tieing for the fastest half mile track in 1.12. This car was equipped with your Magneto and as the report shows, ran faultlessly throughout the several events.
BUICK MOTOR COMPANY,
Boston Branch,
H. K. HOYES,
New England Mgr."

Write us for illustration and full description of our new high tension Magneto. We are building them in such large quantities that we can make you very attractive prices. We furnish fittings for attaching these Magnetos to many of the old models of the different American cars.

Address Dept. 11.

REMY ELECTRIC COMPANY, Anderson, Ind.

We have opened a branch house at Thoroughfare Bldg., Broadway and 57th St., New York.

OUR SHOW EXHIBITS ARE LOCATED: Grand Central Palace, Madison Square Garden, Chicago Coliseum Gallery, Space No. 186. Space No. 125, Elevated Platform. Gallery, Space No. 65.

Regular Equipment on these Cars.

Buick Motor Co.
Midland Motor Co.
Olds Motor Works.
Regal Motor Car Company.
Model Automobile Co.
Maxwell-Briscoe Motor Co.
Apperson Bros. Automobile Co.
Pope Motor Car Co.
Overland Automobile Company.
Cameron Car Co.
Kissel Motor Car Co.
Crawford Automobile Company.
Buckeye Automobile Company.

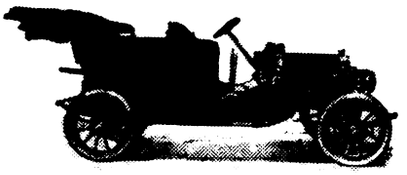
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Jackson AUTOMOBILES

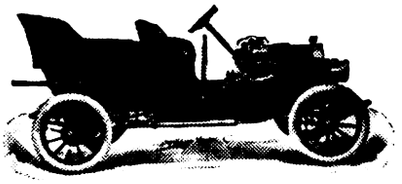
Season of 1909



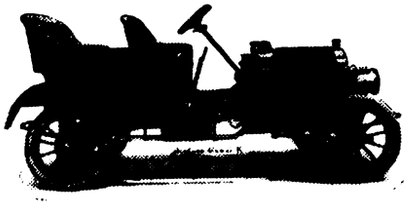
Model E, $2,000—4 cylinders.



Model H, $1,600—4 cylinders.



Model C, $1,250—2 cylinders.



Model K, $950—2 cylinders.



Model F, $950—2 cylinders.

DEALERS

If you want a clean cut, up-to-date, snappy, reliable line of cars—a complete line—a dependable line it is pleasant and profitable to sell—get the

JACKSON AGENCY

THERE are especially good features to be found in Jackson cars which give them individuality. Every point is made a substantial point. Every unnecessary frill is cut out. Every possible provision is made for the comfort of those who ride in Jackson cars—notably our Jackson special full elliptic springs, front and rear, made right and tempered right in our own spring plant. Jackson cars are not only practical, in every sense, but luxurious in their easy riding qualities.

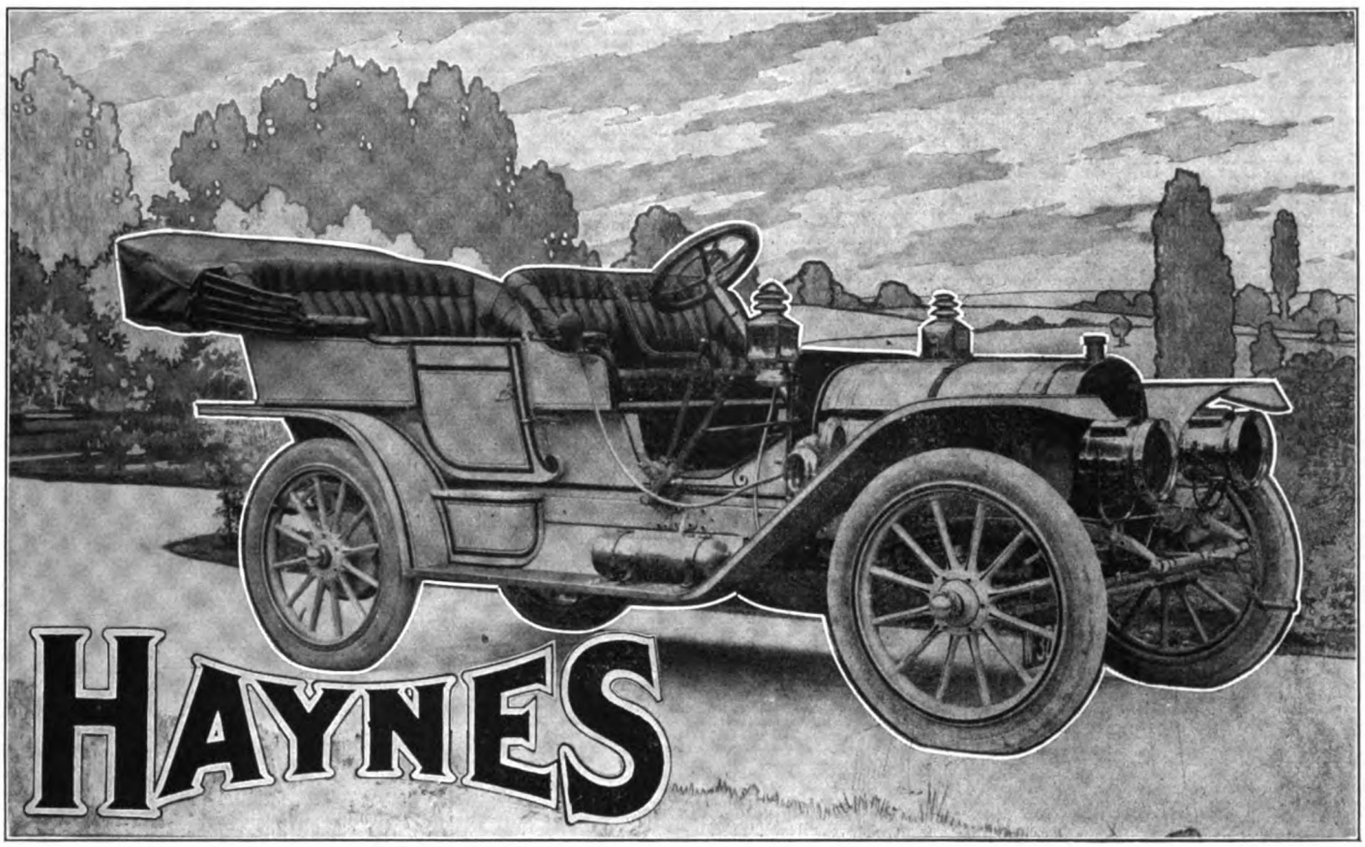
1909 Models will be exhibited and demonstrated at the Grand Central Palace Show, New York, December 31-January 6, and at the Coliseum Show, Chicago, February 6-13.

No Sand Too Deep—No Hill Too Steep

JACKSON AUTOMOBILE COMPANY

Jackson, Michigan

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The Haynes for 1909, 40 H. P., $3,000.

A Talk To Agents

People are wary of the good-looking car that a chauffeur or an expert is unwilling to commend.

Possibly there are some agents who think that the merits of the Haynes universal joints, for instance, are too technical a matter to interest the average business man that comes in to look at the car. Maybe. But next day that man's friend, who knows an automobile when he sees it, steps in.

He gets into the chassis instead of into the tonneau.

He finds the universal joints with the floating cube of solid steel that can't ever break, and the big wearing faces that never wear out.

He finds other things, too—a unique and simple roller-pinion-and-sprocket direct drive that solves certain old problems at the rear axle, obviating wear, strains, noise and friction at a place that is a danger point in most cars. He finds a better clutch than any other car ever had. He finds a ratchet gear system that prevents gear stripping. He finds a double flywheel on the motor that makes it run like a six-cylinder without a six-cylinder's cost and complication. And he finds tremendous strength, almost needless strength, everywhere.

And the man that sent him may not hear about those technical points, but he does hear something that makes him 'phone the agent to reserve that car till cheque arrives in the morning.

Certain Haynes territory is open this year, and we are ready to talk business if you are just the right man.

HAYNES AUTOMOBILE CO., Kokomo, Indiana

Oldest Automobile Manufacturers in America.

NEW YORK, 1715 Broadway — Member A. L. A. M. — CHICAGO, 1702 Michigan Ave.

FORTY-TWO HIGHEST AWARDS AND PERFECT SCORES

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For Every Day Use and Touring

Diamond Demountable Rims





For Carrying Extra Inflated Tires

¶ They won the only official test of demountable rim equipment ever made.

◆

¶ They have shown the greatest efficiency and positive security.

◆

¶ Simply remove a few nuts, slip the rim with flat tire off and slip on a fresh rim carrying the extra tire inflated and complete. Easy for the veriest novice.

Descriptive Matter and Prices on Request.

The Diamond Rubber Company

Akron, Ohio

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10 Years Foremost

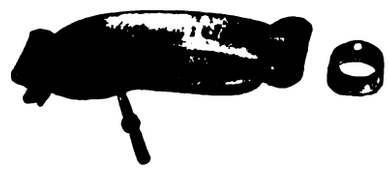
1909 Will Increase Their Lead

Diamond
Wrapped Tread Tires









Logically constructed from the beginning, their advance in efficiency has been logically worked out.

They are preeminently the tires for service.

In the successful manufacture of tires for racing cars we have made exclusive use of that test in its application to work of greater importance—the requirements of every day use and touring.

And our tires for 1909 are built with an intimate knowledge of 1908 results, coupled with the large advantage we have gained by there being more Diamond tires—both casings and tubes—in service than any other two makes combined.

There's also the quick acting rim proposition—and one 100 per cent. efficiency—The Marsh.

Inquiries Receive Every Attention.

The Diamond Rubber Company

Akron, Ohio

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ARE YOU ON?

IF NOT, GET A

Stepney Spare Wheel

AND

Be On and Gone in Less Than a Minute.

Don't Miss Your Train
Don't Miss the First Act
Don't Be Late to Business
Don't Miss Your Dinnner
Don't Freeze Your Hands

} TERRORS OF A PUNCTURE

by changing a tire, when it can be prevented by simply carrying a STEPNEY SPARE WHEEL.

Look us up at the Show or write for Catalogue D.



SPARE MOTOR WHEEL OF AMERICA
LIMITED

236 Michigan Avenue
CHICAGO, ILLINOIS

GEORGE S. MORROW, Sales Manager

Digitized by Google

It doesn't take the automobiling public long to learn which tires are giving the best service.

G&J TIRES

are made to give the automobile owner his full money's worth in service—and that they have made good is evidenced by their ever increasing demand. You will make no mistake in specifying them on your new cars.

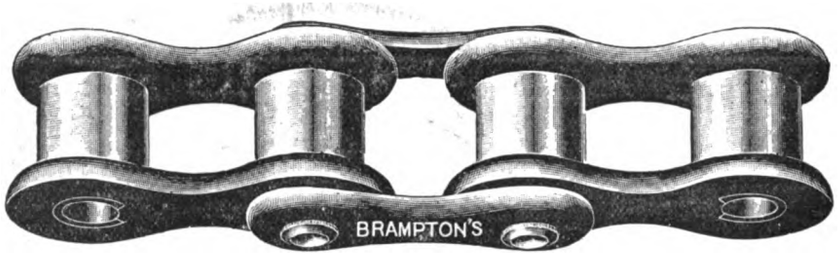
Yes, we shall exhibit at both the New York shows. If you will be there call and see us—if not, write for a copy of our new catalogue.

G&J TIRE CO.

INDIANAPOLIS, IND.

Detroit, 256 Jefferson Ave.
Chicago, 1434 Michigan Ave.
New York, 10 W. Sixtieth St.
San Francisco, 414 Van Ness Ave.
Denver, 1541 Cleveland Place.
Buffalo, 912 Main St.
Philadelphia, 713 Broad St.
Los Angeles, 1010 S. Main St.
Minneapolis, 21 S. Second St.
Omaha, 1607 Harney St.
Atlanta, 35 N. Pryor St.
St. Louis, 415 N. Fourth St.
Boston, 110 Federal St.
Portland, 326 Burnside Ave.
Kansas City, 1607 Grand Ave.
Cleveland, 326 Frankfort Ave.
Pittsburg, Baum & Beatty Sts.

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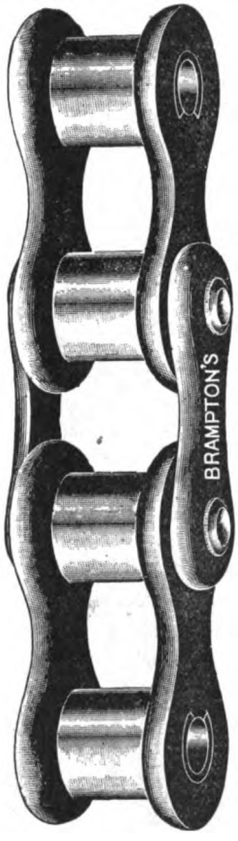


THE CELEBRATED

MUST BE SEEN

The Highest Art of

THE BRAMPTON CHAIN



The *strongest* chain in the world; made of *self-hardening steel* with large spun rivets, chamferred side plates (no sharp edges). All parts of this chain are polished and fit the sprockets (which are properly cut) without friction.

Imitation, What's the Definition?

All Brampton Chains are stamped with the name Brampton on each outside link; Beware of the imitation and get the genuine Brampton.

PRICES THE SAME AS OTHER CHAINS

American Size Brampton Roller Chain

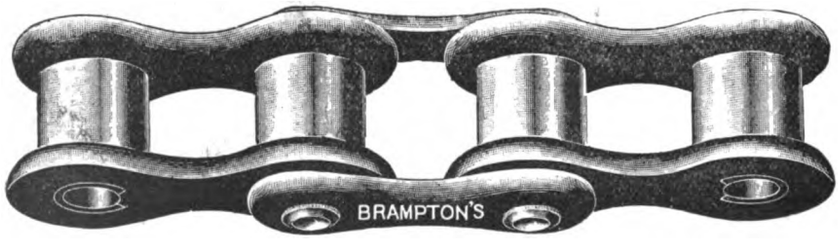
at American Chain Prices, *to fit all American Cars and Motorcycles.*

CAN BE PURCHASED FROM ALL JOBBERS

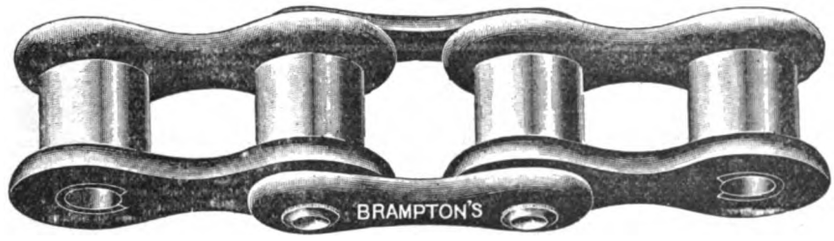
We are the Sole American Agents. Catalog on request.

CHAS. E. MILLER, Manufacturer, Jobber Exporter and Importer

PHILADELPHIA BOSTON BROOKLYN CLEVELAND



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BRAMPTON CHAIN

Palace Show, Space No. 225. Garden Show, Space No. 243
2nd Floor, West End. 2nd Balcony, North Side

Motor Chain Construction

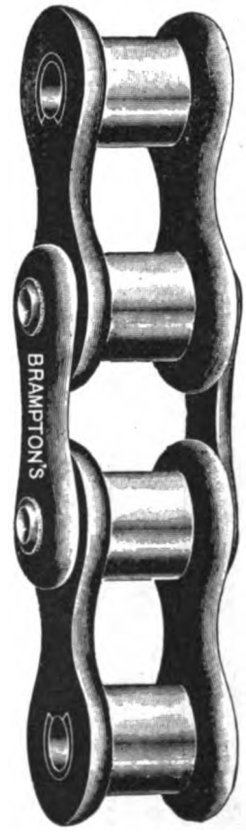
LARGE SALES

make it possible for us to import the CELEBRATED BRAMPTON CHAIN from England (paying freight and duty) and sell it at the same price at which the several other automobile chains are sold to manufacturers, jobbers, dealers and users.

Prices Being Equal What Would You Do?

The price being equal, it's presumable you want the best, and full value for your money. In such cases, the BRAMPTON fills the bill, and the prices are the same to manufacturers, jobbers, dealers and consumers as any other chain of equal size.

We carry in stock the BRAMPTON CHAINS to fit Foreign Cars—Mercedes, Panhard, Martini, Fiat, etc., etc.



AND DEALERS OR ANY OF OUR BRANCHES

Agents Wanted in Unoccupied Territory.

HOME OFFICE

97-99-101 Reade Street, New York City

DETROIT **BUFFALO** **54th Street and Eighth Ave., NEW YORK CITY**



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THE MARION FLYER

The Car With Class

¶ 1 horsepower to every 52 pounds of actual weight.

¶ Detachable Toy Tonneau or 5-passenger Touring Car $1850.

¶ We shall exhibit at Grand Central Palace, December 31 to January 7.

Marion Motor Car Sales Co.

INDIANAPOLIS, IND.

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What Good Tires Mean To You

Throughout the world Morgan & Wright tires are known as good tires—because they are.

To the motorist this statement of demonstrated quality means much, for—

It is a guarantee against wholly unnecessary repair bills—against all repair bills, in fact, except those necessitated by accident or natural wear;

It stands for protection to the car, which can be secured only by the use of tires that are built to withstand emergency tests as well as ordinary service;

It's an assurance that you will be spared the exasperating inconvenience which always attends breakdowns of any kind—especially those against which you could be protected.

MORGAN & WRIGHT TIRES

have literally won over hundreds of motorists by reason of their protective quality—the quality that makes them absolutely safe under any condition.

Whether this protection is secured through the grade of materials used, or through our method of tire-building, or as a result of extremely rigid inspection which every tire undergoes before it is permitted to leave the factory, is comparatively unimportant to the user.

The vital consideration—and the only one that appeals to the experienced motorist—is this:

These tires actually stand up day in and day out under every condition of both load and road, as only tires can that are made as MORGAN & WRIGHT tires are.

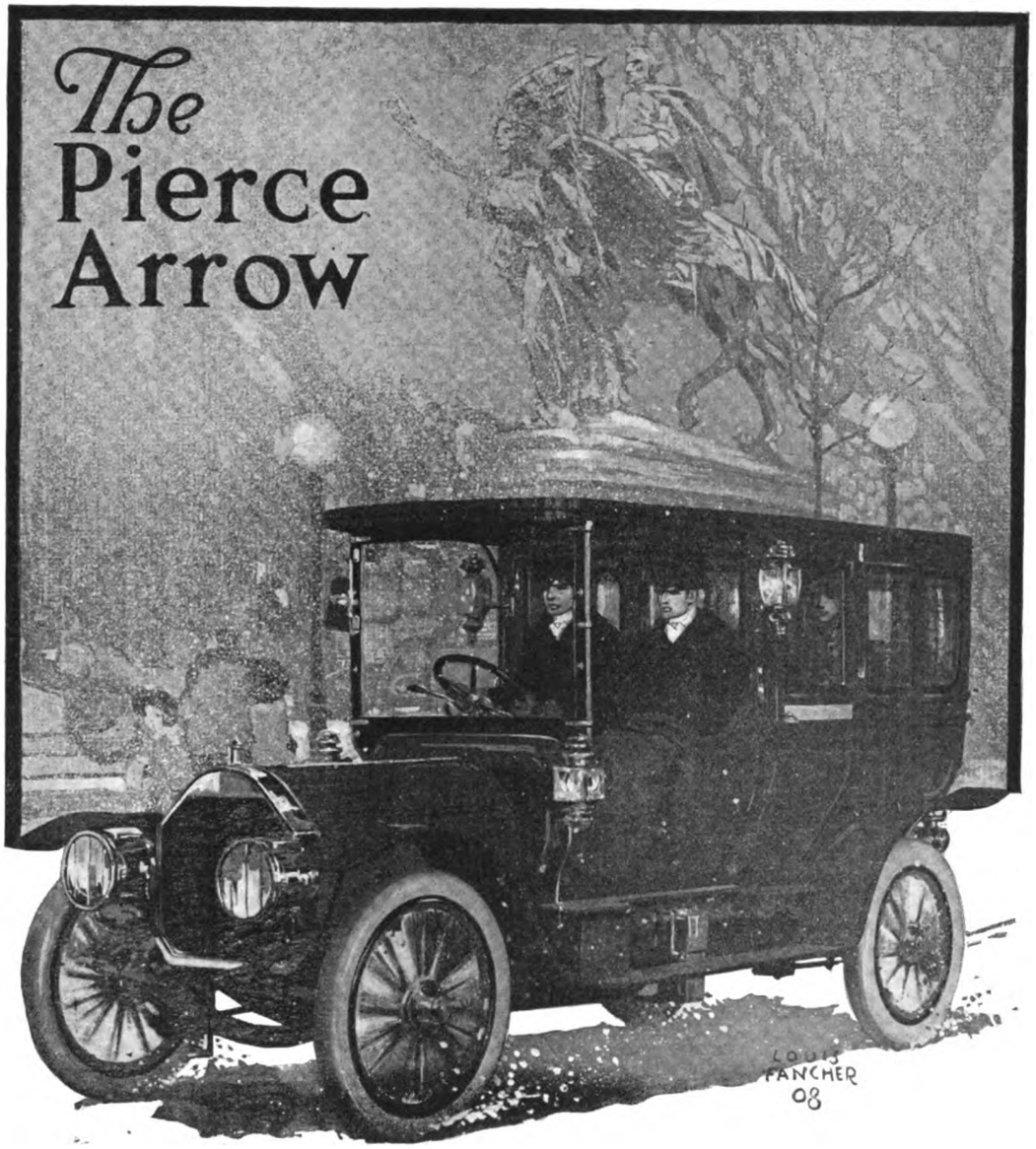
And it is because users of these tires have repeatedly found this to be true, that we invite all motorists to give them an impartial, comparative test.

There is no method of making friends
equal to the method of making good.

MORGAN & WRIGHT, DETROIT

Branches, Agencies or Dealers Everywhere

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48 Horse Power, 7-Passenger, Suburban Limousine, 6 Cylinders, 130-inch Wheel Base, Price $6100. Besides the Suburban Limousine, the other new types on this chassis include Roadster, Tourabout, Touring Car and Landau.

In a car for city use not only comfort but also elegance is needed. PIERCE ARROW Broughams and Landaulettes have all the smartness of a well-appointed carriage, the perfect service that comes from the PIERCE engine and the freedom from repairs and other annoyances which is characteristic of all PIERCE Cars.

The Pierce Arrow Cars will be exhibited in New York only at the Madison Spuare Garden Show, January 16 to 23, 1909, and at the salesroom of our New York representatives, The Harrolds Motor Car Company, 233 W. 54th Street.

THE GEORGE N. PIERCE COMPANY, BUFFALO, NEW YORK

Members Association Licensed Automobile Manufacturers.

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Night Riders!

in automobiles require perfect light—their safety and comfort depends on the efficiency of their lighting equipment.

SOLAR LAMPS

provide powerful, steady penetrating rays at all times and under any conditions. The name SOLAR on a lamp represents perfection in motor lamp construction—the highest possible standard in material and workmanship. Besides the exclusive features to be found in no other lamp, our complete line covers the greatest range of prices and variety of models. Uniform equipment on a car is an index of care and skill. A high grade car is handicapped by cheap lamps. A medium priced car increases both in efficiency and appearance by good lamps—SOLAR LAMPS.



Solar Lens Mirror Headlight, 956 A. 6-inch Lens Mirror. Each, $8.00.

Prices

Gas Headlights	from $4.50 to $62.50 each
Electric Headlights	from $8.75 to $15.00 each
Generators	from $4.00 to $12.00 each
Oil Side Lamps	from $7.50 to $22.00 pair
Electric Side Lamps	from $9.00 to $21.00 pair
Oil Tail Lamps	from $3.50 to $7.50 each
Electric Tail Lamps	from $3.75 to $6.00 each



Solar Lens Mirror Projector. 7-inch Lens Mirror. Each $17.50.

See our exhibit at the Grand Central Palace and Madison Square Garden Shows.

BADGER BRASS MANUFACTURING CO.

TWO FACTORIES:

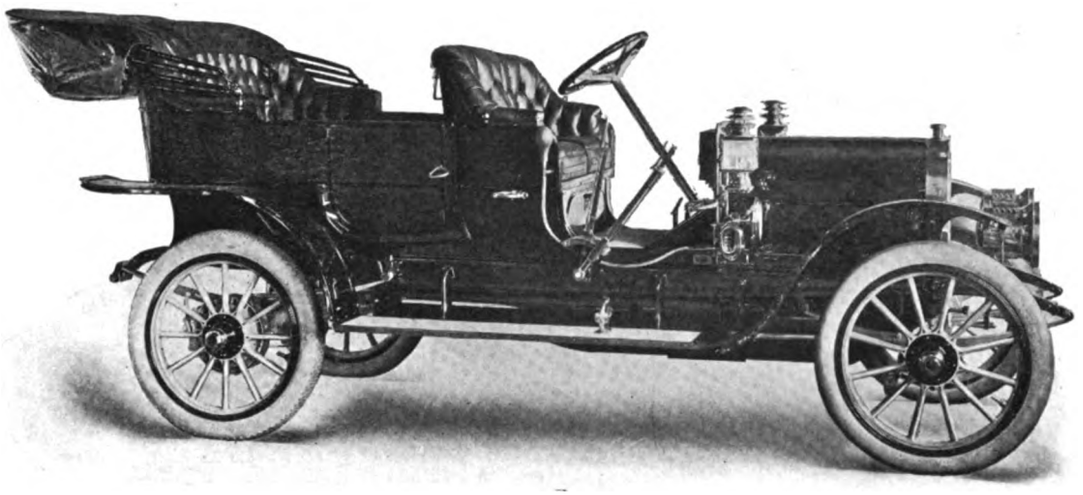
437 Eleventh Avenue, New York **Kenosha, Wisconsin**

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THE SELDEN CAR

MADE BY

"The Father of Them All"



One Price, $2,000. F. O. B. Rochester.

TOURING OAR, ROADSTER, TOY TONNEAU

A genuinely good car cannot be made and sold for less than $2,000. By this we mean a car like the Selden, containing nothing but the best of materials, workmanship and finish. A car that the manufacturer can stand behind and guarantee for at least a year against any imperfections in workmanship or material.

We buy only the best materials, employ only skilled labor and pay particular attention to details and finish, thereby producing a strictly high-grade car at the lowest possible price.

The up-keep and maintenance of a medium-priced car like the Selden is within the reach of any man of moderate means and the value of the car does not depreciate like that of the lower priced cars. This is the point to be considered by every purchaser.

The Selden Car is a 4-cylinder 28-30 horsepower (developing 37 horsepower) five passenger Touring Car or three passenger Roadster, with 114-inch wheel base, 34-inch wheels, shaft drive, selective control, pressed steel frame, metal body, fully equipped.

Superb riding, roomy tonneau, luxurious upholstery, smooth running, great hill-climber, flexible and easily handled, economical in maintenance and up-keep, fine finish, stylish and attractive.

THE COMING CAR OF MODERATE PRICE

Catalog and Agency proposition upon request. Agencies wanted everywhere.

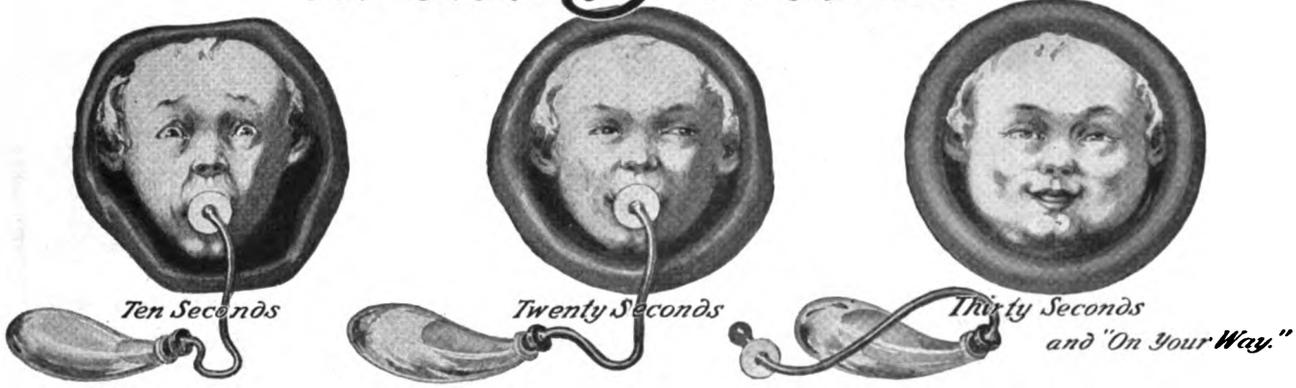
We will exhibit at Madison Square Garden Show.

SELDEN MOTOR VEHICLE COMPANY

GEO. B. SELDEN, Pres. Members Association Licensed Automobile Manufacturers. ROCHESTER, N. Y.

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How To Bring Up A Tire On A Bottle In Thirty Seconds



Goodyear Air Bottle Means No More Tire Pumping

NEVER hear of bringing up a tire on the Goodyear Bottle? Sure! It beats the old-fashioned way of bringing the tire up by hand "all hollow." Not one-tenth the trouble.

And tires brought up on the Goodyear Bottle are well brought up too,—better behaved—more healthy—live longer—do a good deal more work—save you a lot of money.

It's such a big success that we are going to give every motorist in the world a chance to try it free for two years—charging only the nominal cost of the first bottle.

The Goodyear Air Bottle is a small steel bottle charged with pure air (not gas). It is usually carried under the seat or on the running-board of an automobile.

When you want to inflate a tire, you simply attach the rubber tube from the Air Bottle to the tire—open the valve and let 'er fill.

While you stand by and comfortably watch the performance until time to shut 'er off.

Doesn't look much like your old familiar job of giving an imitation of your wash lady in the midst of her Monday morning exercise, does it? Doesn't feel like it, either.

No more back-breaking, hand-blistering tire pumping! That grim task which robbed motoring of its pleasure can be crossed *off your list of troubles.*

Any woman or child can inflate a tire with the Goodyear Air Bottle—it's so simple.

And the beauty of it is that the tire can be brought up to just the right pressure.

This is important. It makes tires last 50 per cent longer. Under-inflated tires give out quickly.

By inflating to *exactly the right pressure* with the Goodyear Air Bottle, rim-cuts and other tire troubles are avoided. Ninety per cent of tire troubles come from under-inflation.

If you have Goodyear Detachable Auto Tires on Goodyear Universal Rims, the Goodyear Air Bottle will enable you to be on your way a few minutes after the puncture occurs.

And with *any* tire, it cuts out half the work and drudgery.

Any motorist in the last Glidden Tour can tell you what a blessing the Goodyear Air Bottle is. A big truck loaded with Goodyear Air Bottles met the tourists from day to day at the various points of the tour.

All contestants who desired the Free Goodyear Air Bottle service were supplied, regardless of the kind of tires they rode.

Every day the empty bottles were taken back and replaced with fully charged ones.

Thus, the Glidden Tourists always had a fresh filling for a deflated tire right at hand—no delay—no labor.

Altogether the Goodyear Air Bottle was voted the best thing that had happened since the Glidden Tour began.



Write us for our "The Care of an Auto Tire," which gives valuable information about the care of tires and the exact pressure to which each size of tire should be inflated to give the longest service.

Our Offer to all Motorists— Free Air for Two Years

The Goodyear Air Bottle costs only $15 for the small bottle designed to carry under the seat, or $20 for the larger bottle, which is designed for carrying on the running board, filled with compressed air—no gas to ruin the tires, corrode the valves, or condense within a few hours, leaving the tires soft, thus making it necessary to constantly repeat the operation to maintain the desired pressure.

The first cost is the only cost for two years, thereafter we may make a nominal charge for refilling. But for two full years, when the bottle is empty you simply turn it in at any Goodyear Branch or listed agency and receive a new bottle, ready charged.

You do not have to wait. You exchange the empty bottle for a new charged one instantly. Each small bottle will fully inflate four to eighteen clincher tires—according to their size—and each large bottle from six to thirty-five. They will partially inflate many more. The bottles will inflate approximately 15 per cent fewer Goodyear Detachable Tires than Clincher Tires of corresponding size, the reason being that the GOODYEAR DETACHABLE TIRE IS 15 PER CENT OVER SIZE.



The Goodyear Tire & Rubber Co., Arthur St., Akron, O.

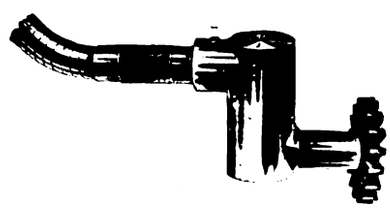
Branches and Agencies:

Boston, 261 Dartmouth Street
Cincinnati, 317 East Fifth Street
Los Angeles, 932 South Main Street
Philadelphia, 1402 Ridge Avenue
New York, 64th St. and Broadway
San Francisco, 506 Golden Gate Ave.
Chicago, 80-82 Michigan Avenue
Cleveland, 2005 Euclid Avenue
Milwaukee, 188-192 Eighth Street
St. Louis, 3935-3937 Olive Street
Buffalo, 719 Main Street
Detroit, 251 Jefferson Avenue
Pittsburg, 5988 Centre Avenue
Omaha, 2010 Farnam Street
Washington, 1026 Connecticut Ave.
Atlanta, 90 North Pryor Street
Louisville, 1049-1051 Third Street
New Orleans, 706-716 Barrone St.
Memphis, 181-185 Madison Street
Dallas, 111 North Akard Street
Denver, 28 West Colfax Avenue
Baltimore, 991 Park Avenue
Kansas City, 16th and McGee Streets

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STEWART SPEEDOMETERS EXCLUSIVELY

Many of the largest accessory dealers in the United States and Europe are stocking Stewart Speedometers exclusively



THE FAMOUS STEWART SWIVEL JOINT
(Patented)

WHY? Because they have come to realize that with STEWART SPEEDOMETERS, guaranteed for five years, they are relieved of many annoyances incident to handling other makes.



MODEL 11—Four-inch 60-mile dial, enclosed season odometer and automatic resetting trip register. New construction. Price **$25**

GET OUR LITERATURE

Stewart & Clark Mfg. Company

509 Diversey Boulevard, Chicago, Illinois, U.S.A.

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Every Car Runs Good On
TIMKEN BEARINGS

That's why all the good cars use them.

Look at this list of prominent Motor Cars and Transmission Makers who use TIMKEN BEARINGS either altogether or in part:

Peerless Motor Car Co.	H. H. Franklin Mfg. Co.	Buckeye Mfg. Co.
Packard Motor Car Co.	Premier Motor Mfg. Co.	Blomstrom Mfg. Co.
F. B. Stearns Co.	Electric Vehicle Co.	Duro Car Mfg. Co.
Locomobile Co. of America.	Nordyke & Marmon Co.	E-M-F. Co.
E. R. Thomas Motor Co.	Buick Motor Co.	Grout Automobile Co.
Winton Motor Carriage Co.	Dorris Motor Car Co.	Hewitt Motor Co.
Lozier Motor Co.	Autocar Co.	T. B. Jeffery & Co.
Royal Motor Car Co.	York Motor Car Co.	Oscar Lear Automobile Co.
Apperson Bros. Automobile Co.	Kissel Motor Car Co.	Midland Motor Co.
Austin Automobile Co.	Bartholomew Co.	Moline Automobile Co.
Matheson Motor Car Co.	Acme Motor Car Co.	Marion Motor Car Co.
Olds Motor Works.	Speedwell Motor Car Co.	Mason Motor Car Co.
Dayton Motor Car Co.	Forest City Motor Car Co.	Smith Automobile Co.
Chalmers-Detroit Motor Co.	Colburn Automobile Co.	Selden Motor Vehicle.
Pope Mfg. Co.	Atlas Motor Car Co.	Velie Motor Vehicle Co.
Haynes Automobile Co.	Auto Vehicle Co.	H. E. Wilcox Motor Co.
		And many others.

ELECTRICS

Anderson Electric Co.	Rauch & Lang Carriage Co.	C P. Kimball & Co.
Columbus Buggy Co.	Waverley Co.	And many others.

There could be no more conclusive proof of merit than this practical endorsement.

Once a Timken User
Always a Timken User
THERE'S A REASON

Every Manufacturer knows it. Every Dealer should know it. Every Owner will insist on TIMKEN BEARINGS if they know it.

See the TIMKEN EXHIBIT at the shows or write direct for illustrated descriptive matter.

We will exhibit—Grand Central Palace, December 31st-January 7th; Madison Square Garden, January 16th-January 23; Chicago, February 6th-February 13th.

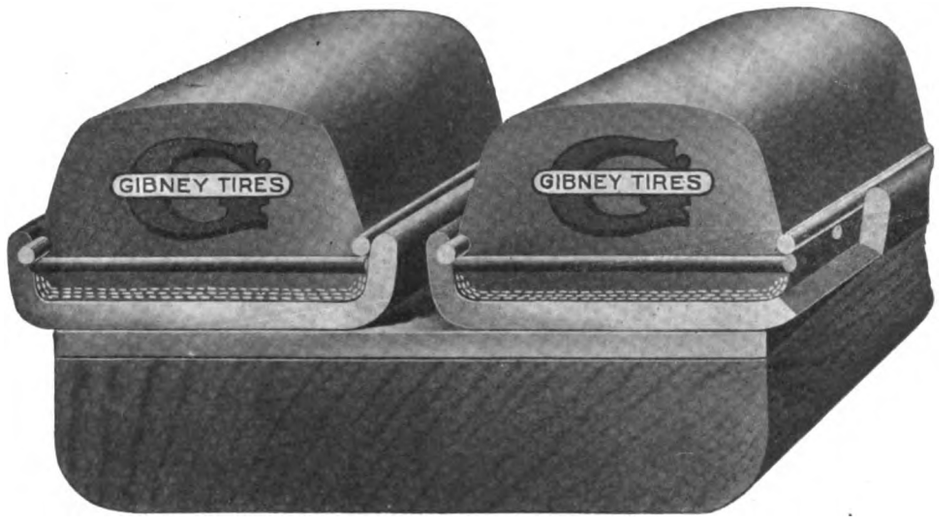
THE TIMKEN ROLLER BEARING AXLE CO., Canton, Ohio

BRANCHES—10 E. 31st St., New York. 428 Wabash Ave., Chicago.

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GIBNEY SOLID TIRES

For Commercial Vehicles and Carriages



Twin Solid Tire

The Tires for Long Wear, Hard Service, All-Round Economy

They are strong enough for the heaviest commercial truck or bus, yet resilient enough to take all the jolts and save the vehicles.

Made with the greatest possible percentage of pure Para rubber, they are without question the superior of any solid tire in the world.

The marvelous growth in sales of Gibney tires is solely attributable to the fact that they have given longer service and greater satisfaction than any tire on the market.

READY FOR DELIVERY
BECAUSE WE MAKE THEM

Distributors for CONTINENTAL "Low Cost per Mile" TIRES
Also IMPORTERS and JOBBERS of AUTO ACCESSORIES

JAMES L. GIBNEY & BRO.

211-13 North Broad Street **PHILADELPHIA, U. S. A.**

Agents Wanted Everywhere

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FOR 1909 THE

Jones Speedometer

presents the most complete and handsomely finished line of speed-indicators ever offered!

The JONES was the first speed-indicator built for automobile use—the Pioneer. From its very inception it was recognized as a PERFECT SPEED-INDICATOR. During the nine years it has been on the market the JONES has withstood every test and trial with a perfect score and has maintained the highest possible standard for

UNFAILING ACCURACY—CONSTANT RELIABILITY—EFFICIENCY

It has always been the first to adopt every refinement and improvement—other manufacturers follow its example and initiative. In handsome appearance and *actual* performance, it is not even approached by any other instrument. It is the Standard of the World—the speed-indicator by which *all* others are judged—the speed-indicator you want for *your* car!

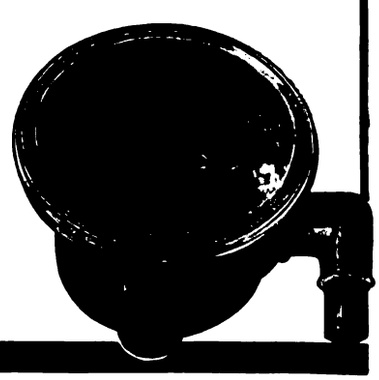
20 different instruments raging in price from $15 to $100. Speedometer and Clock Combinations (Chelsea Movement) from $55 to $150. See our exhibits at both shows!

Write for 1909 *folder containing all Jones Models, together with prices.*

THE JONES SPEEDOMETER

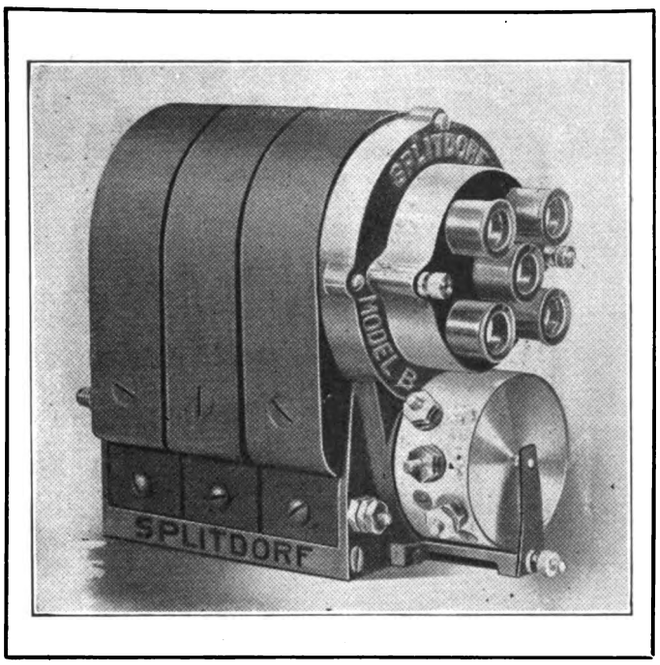
76th Street and Broadway, New York

CHICAGO, 1421 Michigan Ave.; PHILADELPHIA, 259 N. Broad St.; BOSTON, 109 Massachusetts Ave.; CLEVELAND, 1841 Euclid Ave.; LOS ANGELES, 930 S. Main St.; HARTFORD, 284 Trumbull St.; SAN FRANCISCO, 544 Golden Gate Ave.; DETROIT, 247 Jefferson Ave.; BALTIMORE, 26 Franklin Bldg.; ST. LOUIS, 4630 Olive St.



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The Best Magneto Investment



Is a

SPLITDORF

Not merely because it is made by the oldest and largest ignition specialty firm in America, but *because of its real value as a Magneto.*

The motoring public recognize that the creative genius exercised and the infinite pains expended in SPLITDORF construction demand a somewhat higher price, but in proportion to value received the SPLITDORF is

THE MOST MODERATE-PRICED MAGNETO IN EXISTENCE

Once and for all, it is the best that money will buy.

Fifty years of electrical engineering experience behind it.

Every part of this superb mechanism is of the most excellent material, and the construction is by the highest skill obtainable in America, embodying in every detail the most important improvement known to Magneto building. Its simplicity enables the inexperienced to install and adjust it without losing any of its efficiency. We emphatically claim it is the Most Scientific in Design, the Most Effectual in Operation, the Most Carefully Built of any Magneto extant.

Be sure to specify the SPLITDORF MAGNETO for your 1909 car. Being thus equipped you will be assured faultless ignition every day in the year.

See our exhibit at the Grand Central Palace Show—Space 107-*K.*

C. F. SPLITDORF

Walton Avenue and 138th Street—Branch, 1679 Broadway—New York

CHICAGO
319 Michigan Ave.

DETROIT
886 Woodward Ave.

BOSTON—Motor Mart
220 Pleasant St.

SAN FRANCISCO
520 Van Ness Ave.

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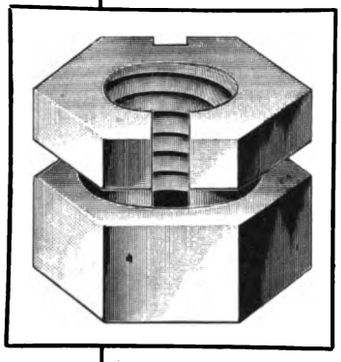
"Locking the door after the pony is stolen"

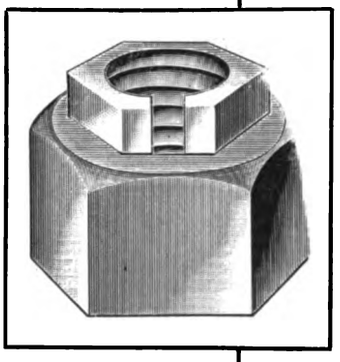
is a good deal like postponing the use of

Columbia Lock Nuts

Now

for it's only a postponement at best. Why not take a double-twist on the forelock of old Father Time and incorporate the use of Columbia Lock Nuts in your construction BEFORE you have occasion for regrets? Columbia Lock Nuts are in general use and are regarded as a necessity by some of the biggest railroad systems in the country. They ought to be a double necessity on automobiles. They are already used by many prominent makers. They should be used on every automobile everywhere.





¶Columbia Lock Nuts simply cannot work loose. Vibration, even the constant vibration of solid tires, cannot affect or loosen them. They are automobile insurance of the very best kind and their cost is not a factor. Let us prove our case.

COLUMBIA NUT & BOLT COMPANY

Bridgeport, Connecticut

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E-M-F "30"

$1,250

F. O. B. DETROIT, MICH.

Magneto Included—Of Course

IF YOU'VE DECIDED TO BUY AN AUTOMOBILE

AN AD-FULL OF ADJECTIVES—a page of pretty platitudes— will not suffice to appease your craving for facts and figures—if you've made up your mind you will buy a car and it's now only a matter of deciding which car will best suit your particular needs.

YOU WANT INFORMATION—some facts you can tie to—some points you can compare—and the more the better—with similar points in other cars.

SO WE WON'T WASTE WORDS in this ad—we'll give you facts boiled down in the form of complete specifications showing just how the E-M-F. "30" is made, of what, and why.

YOU'LL FIND BY COMPARISON that this car is a full-sized, 5-passenger automobile. Same dimensions as other cars selling for twice as much, and larger—much larger—than any other car selling for the same price.

IF YOU ARE VERSED in the mechanical lore of motor car construction you will find all you desire here. If you don't know, then you know someone who does know—and the more he knows about points that spell superiority in a car the stronger will be his verdict in favor of the E-M-F. "30."

AFTER YOU HAVE DIGESTED THIS thoroughly look up the nearest E-M-F. "30" dealer—there are 500 of them—and arrange for a demonstration—that will settle the question.

SPECIFICATIONS

TYPE. 4 cylinder, Vertical, 4 cycle. Cylinders cast in pairs with water jackets integral. *Water space between cylinders* ensuring uniform expansion and contraction. Valves all one side. Mechanically operated. Interchangeable.

CYLINDERS. Bore 4". Stroke 4½". Compression—moderate. All experience has proven these cylinder dimensions to be nearly ideal for all kinds of service. They give a motor of moderate speed—which means long life. Cooling, lubricating and all other troubles which arise from short stroke, excessive bore, small exhaust valves and short bearings are entirely eliminated in the E-M-F. "30."

CRANK CASE. Cast from highest grade aluminum. Hand hole covers, stamped steel. Instead of the usual cast aluminum arms for supporting motor in frame the E-M-F. motor is carried on pressed steel members in "U" section—no heavier—three times as strong.

VALVES. Are extra large—2⅛"—made from special steel, drop forged. Stems and seats ground. Valve guides machined and pressed into place instead of being cast integral with cylinders—easily replaced when worn.

All engineers agree that large valves not only make for efficiency, but also for economy. A four cylinder motor of 4" x 4½" may, by scientific design, accurate workmanship and large valves be made to develop 30 to 35 horse power at 1000 revolutions per minute, or it may develop 16—if valves are under-size or the design faulty in other ways.

VALVE PORTS. Inlet and exhaust passages very large and unobstructed—eliminating all chance of eddy-currents, ensuring maximum power efficiency and perfect cooling qualities.

VALVE OPERATION. Single cam-shaft made from high grade steel, drop forged with *all cams integral.* After milling, cam-shaft is case hardened, and all cam surfaces as well as bearings are ground to micrometrical accuracy—guarantees silent running and consistent performance at all times.

CRANK SHAFT. *Is off-set* ⅜" from centre line of cylinders—still another increase in power efficiency with minimum of wear on cylinder walls and pistons. Crank shaft, drop forged from special steel. Three main bearings—all large and extra long. *All bearing surfaces ground.* Flange, forged integral on crankshaft carries fly-wheel—ground to ensure perfect centre. Fly-wheel is also given a *running balance* at maximum motor speed to ensure accuracy and absence of vibration.

CRANK SHAFT BEARINGS. Special babbit ("White metal" alloy) in accordance with best modern practice. Cam-shaft bearings phosphor-bronze.

CONNECTING RODS. Drop forged steel. I-beam cross section. Crank-pin bearing equal length each side of centre—not off-set. Piston pin bearings, phosphor-bronze. Wrist pin bearings, marine type—not hinged. Lined with die-cast babbit. Shims provided for adjustment, which is easily made through large hand holes in bottom of crank case.

PISTONS. Extra long—5"—ensuring good compressing and long life. Each piston ground, fitted with four rings, and *each set is weighed* to ensure perfect balance of reciprocating parts—a talking-point with some makers—a matter of course with us.

PISTON RINGS. Eccentric type; ground on periphery-face to conform to exact bore of cylinder; also on both sides.

PISTON PIN. Special case-hardened steel ground; drilled hollow to ensure perfect lubrication. Pistons, connecting rods, crank-shafts and *all reciprocating parts are mechanically balanced* to eliminate vibration.

LUBRICATION. Splash—automatic, vacuum feed—reliable and economical. Oil reservoir cast integral with aluminum crank case. After having tried countless mechanical "positive feed" oiling devices and found them all wanting in some particular, foremost engineers have decided that the only really positive feed is by gravity; and experience proves that no amount of piping to cylinders and bearings will ensure the same liberal oiling to all moving parts as the old, original splash system, by which the entire mechanism is kept constantly bathed in oil. The one shortcoming of the gravity feed system was the necessity for throttling the feed to prevent flooding, and the tubes frequently became clogged at the valves.

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By our system of vacuum regulation—the utilization of one of the simplest principles in nature—we are able to use large tubes, ⅜". This absolutely insures free flow of oil from the reservoir, and a constant level in the crank case. Radius: on one filling of oil reservoir, 300 to 500 miles according to road conditions.

COTTER PINS, lock-nuts, keys and taper pins are used at every point to guard again any part getting loose.

OIL CUPS. Are provided for every joint that may at any time require lubrication—steering knuckles, spring connections operating shafts, etc., etc.

IGNITION. Double system, consisting of (a) magneto, (b) battery. The magneto is not an extra or "special equipment." It is as much a part of the E-M-F. motor as the valves, and is included in the list price of the car. Gears and all moving parts enclosed in oil tight, dust and water proof case. In this regard the E-M-F. car sets a pace for the world, high priced cars included.

ENGINE GEARS. Cam-shaft and Magneto gears all enclosed and separated from crank chamber. Gears lubricated by non-fluid grease—not cylinder oil.

COOLING. Is by large centrifugal pump—high efficiency at slow engine speeds ensuring cooling in hill climbing and hard pulling over muddy roads. Belt driven, stamped steel fan mounted on engine—not attached to radiator. Eccentric belt adjustment.

CARBURETOR. Improved simple float, single jet—our own design. Very flexible and economical. Carburetor is located on driver's side of motor, away from hot exhaust pipes and other parts—readily accessible.

CLUTCH. Improved expanding-ring type. Leather faced. Contained in fly-wheel. Oil groove in fly-wheel with holes drilled for escape of oil obviates all liability of clutch slipping from this cause. Takes hold gently—and holds when engaged. Adjustment, accessible and easy.

TRANSMISSION. Type—Selective sliding gear. Gear case integral with differential housing in rear axle—"the unit power transmission system" so generally approved by engineers of late. Gears made from E-M-F. formula special steel. Accurately cut and oil treated. Instead of squared shaft for sliding gears, round shaft with four keys integral has been adopted—key-ways milled and *ground. Gear centers also ground* to ensure perfect alignment on shaft and silent running—details of construction heretofore known only to the highest priced cars.

SPEEDS. Three forward and reverse—direct on third.

GEAR RATIO. Standard, 3¼ to 1. Speed of car, 50 miles an hour, down to 2, (you won't believe it till we show you) on high.

DRIVE. Direct through universal jointed propeller shaft to bevel gear on differential. Two universal joints. Pressed steel torque shaft. Gears extra large, accurately cut and made from special alloy steel.

DIFFERENTIAL. Bevel gear type—four pinions—another feature heretofore considered too expensive for any but high priced cars.

REAR AXLE. E-M-F. exclusive design. Right and left housing sections drawn from sheet steel and heat treated, giving extra strength. Fitted with truss rods. Hyatt Roller Bearings in hardened and ground removable sleeves carry load. Differential thrust bearings, babbit between ground steel washers. No balls to split—no adjustment to get out of order. Made right to stay right. Thrust of drive pinion supported by Timken Roller Bearing.

Auto-genous welding—acetylene-oxygen process—discussed so much in engineering circles and trade journals of late is used in this axle as well as in several other parts of the car.

Thanks to drawn steel, auto-genous welding and "clean" design this axle is lighter than any other live or floating axle on cars of similar weight and power—notwithstanding the entire transmission mechanism is incorporated in it.

All gears—transmission and differential—as well as all shifting mechanism, are immersed in an oil bath. And the transmission-axle case as well as motor crank-case are absolutely oil tight—no mucking of floor boards or dripping on pavements. Provision is made to prevent the oil working out at the axle ends when the car is left standing on an incline. Liberal road clearance.

FRONT AXLE. I-beam type. Drop forged in one piece—not welded in centre. Heat treated. Spring perches forged integral. Liberal safety factor. Spindles off-set back of yoke-posts—scientifically correct—affords easy steering, with tendency to go in straight line. Steering knuckles and all connections drop forged from steel—no castings. Two-point ball bearings in hubs and all joints bronze bushed.

STEERING GEAR. Irreversible, worm and sector made from special steel case hardened. All bearing surfaces ground. Connection from steering arm, at right, to left knuckle arm, obviates all tendency to "crankiness" on rough roads.

CONTROL. Gear-shift lever at right of driver. Throttle and spark levers on left side of steering post, below wheel—operated by fingers of left hand without releasing grasp on wheel. Right-hand free for emergency brake and gear shifting—the ideal control, rapidly superseding the fad for levers on top of wheel. Auxiliary foot accelerator. Clutch operated by left foot, service brake by right foot. Emergency brake by hand lever on right—ratchet lock.

WHEELS. Artillery type. Large spokes—12. Spokes and felloes first grade second growth hickory.

TIRES. 32" x 3½" on all wheels. Morgan & Wright. Universal quick-detachable rims.

BRAKES. Four—all acting on rear hubs—none on transmission. Service brake, contracting steel bands, camel-hair lined, acting on pressed steel drums integral with rear hubs. Emergency brakes, internal expanding rings in same drum—metal-to-metal. Both sets double acting. Grip on drum is intensified by motion of car after brakes have been applied. Service brakes being on outside renders adjustment easy. Pressed steel disc closes drum making it dust proof.

SPRINGS. Front, semi-elliptic. Rear, full elliptic. Extra wide for this weight of car—2". Driving thrusts and braking strains taken by two radius rods—not by springs.

FRAME. Pressed-steel—U-section. Side-members straight—weakened neither by off-setting nor dropping.

MUFFLER. E-M-F. design. Silences by radiation—not by obstruction. Absolutely no back-pressure.

FENDERS. Enameled steel in the newest style, most approved enclosed-full-length-of-the-car type.

MATERIALS. Cylinders made from special formula highest grade, fine grain, gray iron. Intake pipe, brass. Exhaust pipe, gray iron. Crank case, aluminum. Frame, gears, springs, axles and driving shafts all made from special steels—each from an alloy best suited to its peculiar service, and all from E-M-F. formula. Operating levers, spring supports, spring clips, shackles, brackets rod-ends, etc., steel, heat treated. All smaller parts, not drop forged, are pressed or stamped steel—*no malleable castings* enter into the construction of the car—maximum strength with minimum weight, and *absolute assurance* of the safety factor desired.

BODY TYPES.

TOURING CAR. 5 passenger, roomy tonneau with liberal leg-room. Latest style, most approved, straight-line type. Handsomely finished.

The "TOURABOUT"—an E-M-F. innovation. A classy 4-passenger car. Rear seats detachable, leaving room for trunks and baggage. A rumble seat is included in regular equipment; when attached makes a natty 3-passenger roadster.

WHEEL BASE. 106". TREAD. Standard—56½".
Special for Southern Roads 61".

WEIGHT. Touring Car slightly under 1800 pounds.

GASOLINE CAPACITY. 15 gallons. OIL, 1 gallon.

COLOR. E-M-F. Red.

PRICE. With standard equipment, pair acetylene headlights, and generator; side oil lamps, tail lamp, lamp brackets, tube horn, tire repair kit and tools—magneto included of course—$1,250 F. O. B., Detroit, Mich.

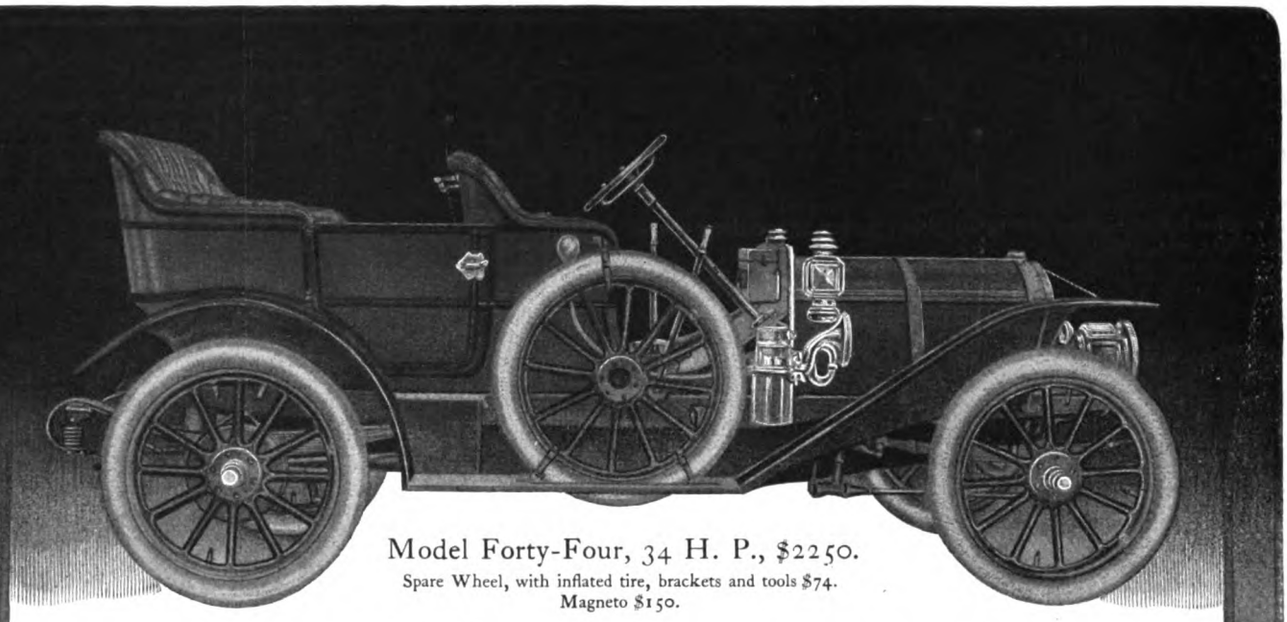
We will exhibit at the Madison Square Garden Show, January 16th to 23rd, 1909.

EVERITT-METZGER-FLANDERS COMPANY

Members Association Licensed Automobile Manufacturers.

DETROIT, MICHIGAN

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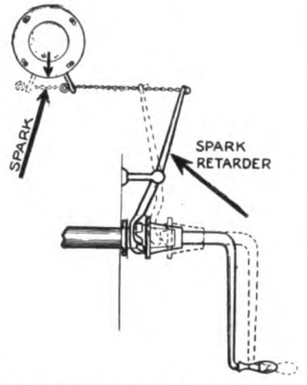


Model Forty-Four, 34 H. P., $2250.
Spare Wheel, with inflated tire, brackets and tools $74.
Magneto $150.

THE SAFETY SPARK RETARDER

There is absolutely no danger in cranking a Rambler when properly adjusted. The starting crank then cannot engage until the spark has been automatically retarded.

Every one who has had the unpleasant experience of a premature spark in starting an automobile will appreciate the Rambler safety starting device. This prevents an explosion ahead of center, even though the operator forgets to retard the spark.



You cannot engage the lug on the shaft with a tooth on the starting crank until the spark-retarder lever has moved from the position of the dotted line to the position shown, thus retarding the spark.

Rambler

The Car with the Offset Crank Shaft

Seven passenger model, forty-five horse power with offset crank shaft, $2500. Other models, $1150 to $2500. Write for catalog describing in detail Rambler offset crank shaft, Spare Wheel, straight line drive and other exclusive features of the new Rambler models.

THE CAR OF STEADY SERVICE

Thomas B. Jeffery & Company, Main Office and Factory, Kenosha, Wis.

Branches and Distributing Agencies:

Chicago, Milwaukee, Boston, New York, San Francisco. Representatives in all leading cities.

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, December 31, 1908. No. 14

METZ ACQUIRES WALTHAM PLANT

Former President of the Company Springs a Surprise—Will Produce Runabouts and Light Commercial Cars.

Interests represented by C. H. Metz have purchased the plant of the Waltham Manufacturing Company, of Waltham, Mass., of which concern he was the president at a period when it was making bicycles and when it first undertook the building of automobiles. When he severed his connection with it, he engaged in the manufacture of motorcycles, an enterprise which was subsequently merged with the American Motor Co., of Brockton. He recently withdrew from the latter company, but his acquiring the Waltham plant at this time comes in the nature of a surprise.

As one of the pioneer concerns in the business, the Waltham company enjoyed considerable early prominence and was among the first members of the Association of Licensed Automobile Manufacturers. Latterly, however, although its various "Waltham-Orient" productions have exhibited no small variety and ingenuity from year to year, the company's receipts have not borne a satisfactory relation to its outlay, in consequence of which its success has languished. So far as the future plans for the factory have been divulged, it will in all probability be devoted to the production of runabouts and light commercial cars.

Ludlum Becomes Autocar Head.

David S. Ludlum has become the head of the Autocar Co., of Ardmore, Pa., assuming the position of president and general manager. Because of his enthusiasm as to the future of comercial vehicles, a side of the industry to which the Autocar Co. has given the major part of its attention for the last two years, Ludlum resigned as assistant cashier of the Philadelphia National Bank to take the direction of Autocar affairs. John S. and Louis S. Clarke, the founders of the concern, will retain their positions as vice-president and consulting engineer, respectively, and will continue their present active connection with it. A special commercial chassis which the company has developed will be utilized in delivery wagons, town cars and taximeter cabs.

Greuter Organizing a New Company.

Having produced a six cylinder car embodying a number of original features, C. R. Greuter, formerly with the Matheson Motor Car Company, of Wilkes-Barre, Pa., has organized the nucleus of a manufacturing company which is to be launched at an early date. The enterprise has its present headquarters at Saugus, Mass., where the car is being built. A number of well known Massachusetts capitalists are interested in the project. Greuter's production is rated at 50 horsepower. It has chain drive and features in the motor a new form of double valve for which much is claimed.

McLachlan Resumes His Cleveland Post.

Archie McLachlan has returned to his former post at Cleveland, O., as salesmanager for Royal cars. For the past six months he has had charge of the Chicago branch of the Royal Motor Car Co., of Cleveland, which was recently reorganized as the Royal Tourist Car Co. His successor at Chicago has not yet been appointed.

Herz Moves to Bigger Factory.

Herz & Co., makers of ignition and other automobile specialties, have removed their office and factory to the Puck building, 303-9 Lafayette street, New York City. The ground floor has been fitted up to suit their requirements, providing more than twice the former factory space.

Splitdorf Establishes Boston Branch.

A selling branch for the Splitdorf Laboratory, of New York City, has been established in Boston. It is located in the Motor Mart and is in charge of James Rohde.

MAY REPRODUCE THEIR CARS HERE

Foreign Makers Prospecting for American Factory Sites—Preparing for Failure of Plea for Lower Tariff.

Failing to secure a reduction in the tariff, a failure for which they are not unprepared, several of the most prominent foreign makers will establish branch factories in the United States, according to information from sources directly in touch with the foreign car situation. Reports were current this week to the effect that arrangements are being made to manufacture Fiat cars in Detroit, Mich., already famous for the number of its automobile plants. Investigation by the Motor World discloses that while no definite plans have been decided upon for the location of a Fiat factory in Detroit, considerable work has already been done by the Fiat people in obtaining information and propositions from various towns and cities as to what inducements would be offered in case it were desired to establish an American factory for the production of authorized duplicates of the Italian models. Furthermore, it transpires that not only the Fiat, but the Panhard, Isotta, Renault and other foreign interests are taking much the same steps looking to the establishment of American factories in case the efforts for a reduction in the motor car tariff fail.

Until the tariff matter is practically disposed of by Congress the foreign interests propose to take no steps other than to acquire data as to what localities will offer the greatest manufacturing advantages or financial assistance. It is an open secret, however, that many of those interested in the foreign cars entertain little or no hope that the tariff will be changed for their benefit, and are actively developing their plans for American factories to a point where prompt measures can be taken immediately the tariff question is out of the way.

As the representatives of the foreign cars

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see the situation, the present rate of tariff makes it more difficult each year to compete against the American made cars. Nevertheless the American market is such that the foreign makers by no means wish to relinquish it, particularly as much money and effort has been spent in the past in giving an advertising fame to the better known productions from across the water. A large cash value is supposed to attach to the names of the well known foreign cars, and if the products cannot be successfully imported in the face of the tariff duties, then the plan will be to make the cars over here with such prestige in name and design as the foreign factories can lend.

In explaining the line of campaign which several of the foreign makers have decided upon, a representative closely in touch with several of them pointed out that at present many of the foreign factories are largely equipped with American machine tools. If the project for American factories goes through, at least one or two of the foreign makers will greatly reduce their home factory equipment and production and will ship a part of their American machinery to the new factories in the United States. Such machinery would come in free of duty.

It is claimed that the question of American wage rates and manufacturing costs has been thoroughly gone into by the foreign makers and those conducting the investigation for them on this side. With tariff arguments in mind, some of them have even gone so far as to prepare statistics on the subject calculated to show that the difference in wages paid in America and abroad makes a cost difference of about 17½ per cent., though the methods of arriving at this figure are by no means convincing. Arrangements for obtaining special metals and parts at advantageous figures are also said to have been made.

The various failures and cases of indifferent success attending past efforts to transplant foreign cars serve to encourage the view that further projects of this kind are not likely to meet with any very happy result unless conducted with rare skill and sagacity. In meeting the established American manufacturers on their own ground the foreign makers would find themselves stripped of all advantages in cheap labor and the like, and would even lose whatever selling value attaches to the "imported" label. While established trade names, such as many of the foreign cars enjoy, are to be considered in the light of commercial assets, yet it is doubtful whether they form an adequate basis for an attempted "foreign invasion."

Wallace Goes to the Colburn.

Kyle Wallace, formerly with the Maxwell-Briscoe Motor Company, Tarrytown, N. Y., has been made superintendent of the Colburn Automobile Company, of Denver, Colo. His immediate work will be the production of the 1909 model which the company will make and market.

FLUCTUATIONS IN RUBBER PRICES

Sudden and Frequent Rise and Fall and Its Probable Cause—Brazilian Aspect of the Situation.

Para rubber suitable for the manufacture of automobile tires has been playing active capers up and down the ladder of prices during the last few months, reaching heights that threatened even to affect retail prices considerably and then dropping back with unexpected suddenness. After a recent downward movement of welcome proportions it is again climbing toward upper rounds, and at no time of late has it approached the modest price levels of a year ago. These high prices, however, accumulate on the material during its transportation from the producing grounds in Brazil to New York, acording to a consular report from Rio de Janeiro which indicates that the producers are only getting very low prices and that the buyers are in combination to keep the figures at a minimum. So great has been the depression of prices at the producing grounds that rubber production is threatened, and a part of the district now devoted to it may be turned to other agricultural lines which will prove more profitable. The corresponding reduction in output would greatly affect the market.

"The industrial, commercial and financial situation in Northern Brazil, due to the present and prospective low price of rubber," says Consul General George E. Anderson, of Rio de Janeiro, "continues to merit the careful consideration of the commercial world generally.

"The unfavorable condition, economically, of so great a portion of Brazil is ascribed by some of the rubber men to the lack of proper banking and credit facilities for the financing of the rubber crop, so that producers, or rather the middlemen standing in the position of producers, may be able to hold the crop until the markets of the world are willing to pay higher prices for the product. An organization of rubber dealers is favored for the purpose of resisting combinations of buyers which it is said exist for the purpose of keeping prices low.

"What the present situation means to the great rubber country of Brazil in a governmental way is indicated in the annual message of the Governor of Para, which shows that there was a shrinkage in the revenue of the State, nearly all of which comes from a tax of about 25 per cent. effective on the value of rubber exported, of $458,404 between the last quarter of 1907 and the same quarter of 1908, and there was a shrinkage of $528,540 between the first quarter of 1908 and the same period in 1907. In the fiscal year of 1905-6 the revenue of the State was placed at $4,619,828, while for the coming year it is placed at $2,132,100. The States of Amazonas, Matto Grosso, Goyaz and other rubber producing commonwealths suffer in a similar way.

"The situation is important in a general commercial way," he continues, "not only as explaining present conditions and prospects in the way of imports into Brazil, but also from the fact that unless there is an immediate and radical change in rubber prices, a change which appears to be very improbable in view of the immense extension of rubber plantations over the world generally, there must be a complete revolution in the industrial, commercial and agricultural life of about half of the territory of Brazil."

German-American Agreement on Patents.

Possibly through another of the Kaiser's "calculated indiscretions," it has leaked out that a treaty between Germany and the United States is in process of negotiation looking to a satisfactory reciprocal patent agreement by which the inventors of the two countries will be relieved of some of the more onerous restrictions and requirements that the natives of each encounter in dealing with the other's patent office. The most apparent benefits of the arrangement that is proposed would accrue to the American inventors in the improvement of conditions governing the maintenance of patents in Germany. In the past it has been necessary to actually manufacture in Germany or to pay fees for a recognized bribing of the necessary officials to get a certification that they were satisfied that the patentee was working the invention in the Fatherland. The new regulations would abolish such requirements and would be more liberal in other respects. The German inventors have little to complain of as to the United States patent office. The favorable disposition of Germany as to making the concessions asked for is suggested as being actuated by a desire to appear in direct contrast to England, which has antagonized the rest of the world by its recent patent enactment requiring that manufacture must take place in Great Britain to keep a patent valid.

Dow Tire Elects Coats President.

Changes in the Dow Tire Company, of New York City, have resulted in the retirement of Alexander Dow as president and H. D. Gue as vice-president. The election of officers resulted in the choosing of Alfred M. Coats as president and Gen. James B. Burbank as vice-president, while A. V. R. Barnewall and Sydney Perry succeed themselves as treasurer and secretary, respectively. Barnewall is also general manager of the concern.

End of Pope Motor Car Receivership.

By a final and complete settlement with its creditors, the Pope Motor Car Co., of Toledo, O., will in a few days effect a discharge from the hands of the receivers. The concluding Steps in the program only await the necessary formal court approval.

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HART WANTS THE CORBIN MOTOR

Negotiations Opened for Purchase of the Business—Two Offers Made but the Outcome Yet Uncertain.

Negotiations looking to the purchase of the Corbin Motor Vehicle Corporation, of New Britain, Conn., by its former president, Howard S. Hart, have been in progress for some weeks. Hart resigned from the presidency of the company about a month ago, being succeeded by President Charles Glover of the Corbin Screw Corporation. It is not long since he also resigned the presidency of the Russell & Erwin Co., of New Britain, so that he feels himself in a position to concentrate his energies on the automobile business should he succeed in acquiring the Corbin business.

It is understood that he has made two propositions to the American Hardware Corporation, which owns the Corbin Motor Vehicle Corporation, but neither of these have as yet met with acceptance. A committee has been appointed by the directors of the American Hardware Corporation to consider what shall be done as to the future of the automobile company. The chairman is Charles H. Parsons. No formal report has been prepared by the committee as yet, according to Parsons, and President Glover is proceeding to push the Corbin automobile affairs with a vigor untouched by possibilities of the business being sold.

Alleged Infringement in Spark Plugs.

Infringement suits have been brought against Ralph Burton, of Peru, Ind., by the Rajah Automobile Supply and C. E. Mezger, Inc., of New York City, alleging violation of the plaintiffs' patent rights, respectively, relating to the manufacture of spark plugs for automobile motors and gasolene engines. The suits were filed in the United States Circuit Court, at Indianapolis, on the 14th inst. Burton is thought to have manufactured certain styles of spark plug porcelains of particular design and imprint, with more diligence than discretion.

Preparing for Big Output of Wheels.

The Pontiac Wheel Co., of Pontiac, Mich., is now manufacturing automobile wheels. An addition is being made to the plant which will double the output, and the concern estimates that it will make 15,000 sets of automobile wheels during the coming year.

New Pope Company Retires Series of Notes

In such easy circumstances has the new Pope Manufacturing Company, of Hartford, Conn., started its career that after having taken over the property and assets of the old company from the receivers, it has anticipated one of the three groups of mortgage notes provided for under the reorganization plan by paying off the 1911 series, amounting to $267,000, two years and seven months before maturity. To insure sufficient ready cash upon which to conduct business, the reorganization program included the issuance of $800,000 in mortgage notes, divided into three series, maturing respectively in 1909, 1910 and 1911. The directors of the new company, upon a consideration of its bank balance, decided that there was ample to take up at least one of the series at the very start, the long term series being selected because of the greater saving in interest. This series has therefore been withdrawn from the underwriters, and instead of being offered to the financial public will be filed among the company's cancelled liabilities.

Automobile Coaching Company in Trouble.

Bankruptcy proceedings have been brought against the Automobile Coaching Co., 147 Spring street, New York City, by Louis Ginsberg as administrator of the estate of David Ginsberg. The claim is for $2,361 on a judgment obtained last May for the death of David Ginsberg. It is alleged that the company made an assignment on December 1 and transferred $3,000 assets. The liabilities of the concern are given as $13,531, nominal assets $80, and actual assets $24.

Pittsburg to Have a Taxicab Company.

Despite its numerous hills and its congested streets, Pittsburg is to be a taximeter cab city. The Pittsburg Taxicab Co. is to make application to the governor of Pennsylvania on January 12, for a charter. The men who are back of the enterprise include J. L. Shearer, Jr., John W. Weibley and Charles B. Prichard. They are represented by the legal firm of Weil & Thorp.

Miami Wins Suit Against Pope.

As the result of holding $1,000 deposited with it by the Miami Motor Car Co., of Dayton, O., suit was brought against the Pope Motor Car Co. recently by the Miami company. The defendant demanded the money for damages when the plaintiff discontinued the sale of its cars. A jury hearing has resulted in a verdict for the Miami company of $765.10.

Poole Returns and Will Rest.

John L. Poole, one of the widely known men in the trade, who has been abroad for some time representing a line of American cars, has returned. He will terminate his present arrangement on January 10, after which he intends to take a much needed rest before resuming active duties.

To Build Automobile Hearses.

Motor propelled hearses are to become one of the regular lines of manufacture of James Cunningham & Sons Co., of Rochester, N. Y. The concern has made horse drawn hearses for many years.

EXTENDING THE "DRAWBACK" LIST

All Members of the A. L. A. M. to Participate in the Privilege—Two Important Treasury Department Decisions.

In exporting automobiles the manufacturers are entitled to "drawbacks" or returns of the duty collected on such imported parts and materials as are incorporated in the machine and on which duty was paid at the time of their original importation, and in this they are receiving the active cooperation and help of the Treasury Department. Two decisions have just been given by the Department extending the list of those who are to be recognized as enjoying the drawback privilege.

Of these the more important insures the benefits of the drawback arrangement to all members of the Association of Licensed Automobile Manufacturers. The drawback, however, is limited to parts and material actually used in the construction of the cars themselves, and does not extend to external accessories or attachments. The instructions to the customs officers from the Treasury Department extend the regulations providing for the allowance of drawbacks so that they will "cover the exportation of automobiles manufactured by the members of the Association of Licensed Automobile Manufacturers with the use of imported parts. No drawback is to be allowed on horns, lamps, odometers and other attachments which may be readily detached from the automobile, and which do not form a permanent part thereof."

Denver Develops a New Wheel.

Embodying a pneumatic hub suspension with a solid rubber tire in contact with the ground, a new automobile wheel has been developed in Denver, Colo., for which the originators are confident there will be a big market. Sheriff Alexander Nisbet, T. W. Baird and Edward Dettlebach are backing the enterprise, Dettlebach being the inventor. Nisbet starts East very shortly to demonstrate the wheel and arrange for its manufacture in large quantities.

Overland Agency in the Metropolis.

Overland and Marion cars will hereafter be handled in New York City from a new location. The Metropolitan sale of the two lines has been placed with the Marion-Overland Automobile Company, which concern has its headquarters lower downtown than formerly, at 1657 Broadway.

Pope Company Retires Series of Notes.

C. H. Martin recently returned from Porto Rico where he established an automobile transportation line, has joined the forces of the White Company, in New York. He will have charge of the used vehicle department.

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In the Retail World.

The Woodward Carriage Co., of San Antonio, Tex., has taken up the automobile business. The concern will handle the Rambler.

J. W. Davis, of Prophetstown, Ill., is establishing an automobile salesroom. He has leased the Trautwine building for the purpose.

D. A. Kelly, a blacksmith, is building an automobile garage and repair shop in Monticello, Ill. He will cater to the town's 20 machines.

The Allen-Swan Motor Co., of Brooklyn, N. Y., has changed its place of business. The company has taken a location at 1384-6 Bedford avenue.

The Auto Motor Co., of Boston, Mass., has taken a salesroom at 11 and 12 Park square. George H. Lowe will be with the company and expects to handle the Gyroscope.

The Sweeney Auto Livery Co., of Cleveland, O., has filed a deed of assignment in the insolvency court. Peter D. Quigley is named as assignee. The assets are placed at $1,500 and the liabilities at $3,500.

The Stanley Steamer Co., of Chicago, Ill., has accepted plans for a building which is to be erected for it at the southeast corner of Indiana avenue and Twenty-first street. The structure will be two stories high, costing $18,000.

J. W. Leavitt & Co., of San Francisco, Cal., have arranged for new quarters. They have leased a two story brick building at the southwest corner of Golden Gate avenue and Hyde street, which they will occupy at an early date.

The Star Automobile Co., of Wichita, Kan., has been organized, to handle the Overland. Temporary quarters have been obtained at 137 Market street, but the company has accepted plans for a $16,000 stone garage of its own which is to be built the coming year.

Suit against the Sid Black Automobile Co., of Cincinnati, O., and against Sidney Black and C. J. Neare, has been brought by the owners of the property occupied by the company. A lien is claimed upon $1,225 due for rent since last July. A receiver is also asked for.

The Bennett Auto Co. and the Bennett Auto Supply Co. have opened for business in Sioux City, Ia., at 313-315 Nebraska street. Both companies are owned by the same people, but the former will do a retail agency business in cars, while the latter will undertake a jobbing business in parts and supplies.

The Warner Motor Co., of Washington, D. C., has built a spacious new brick garage at 1204-1212 New Hampshire avenue, N. W., facing M street. The building has a frontage of 60 feet and is two stories high. Each floor yields 10,000 square feet and the second story contains a completely equipped machine and repair shop.

The new brick garage of the Tennessee Auto Co., 1308-12 Broadway, Nashville, Tenn., was formally opened on the 16th inst. The structure contains 15,000 square feet of floor space, has glazed front and rear and glass-sided roof. The Tennessee Auto Co. are agents for the E-M-F. cars.

The Marion-Overland Automobile Co., of New York City, by petition to the Supreme Court of New York, and an order therefrom, will legally change its name to the Overland Company of New York on January 7. There will be no change in the stockholders or officials of the corporation.

H. K. Sheridan, noted as a driver of White cars on various important reliability and endurance contests for a number of years, has been appointed superintendent fo the garage and repair shop of the New York City branch of the White Co.. Heretofore he has been located at the Cleveland factory.

Eleazer J. Goodby and Charles Marshall, employes of the Corbin Motor Vehicle Corporation, have formed a partnership to start in the automobile business in New Britain, Conn. They will do special body building and general repair work and have secured a shop in a brick building on West Main street.

The Hearsey-Willis Co., West Market street, Indianapolis, Ind., is closing out its carriage business and in future will devote itself exclusively to the automobile and bicycle trades. Three floors will be given over to the new lines among which is the recently added agency for the Waverley electrics.

The Goodyear Tire & Rubber Co.'s branch in Boston has had to move, its old building being torn down to make room for a new, five-story structure which will later be its home. Temporary accommodations have been taken at 669 Boylston street, until the permanent quarters at 261 Dartmouth street are ready next May.

The Week's Incorporations.

Massillon, O.—Jewel Motor Car Co., under Ohio laws, with $250,000 capital.

Lenox, Ia.—S. W. Wainwright Automobile and Supply Co., under Iowa laws. Capital, $10,000.

Chicago, Ill.—James Motor Express Co., under Illinois laws. Increase of capital from $16,000 to $34,000.

South Berwick, Me.—Taxi Associates, under Maine laws, with $200,000 capital. Corporators—E. Burleigh Davidson et al.

Chicago, Ill.—Stanley Motor Carriage Co., under Massachusetts laws, with $9,500 capital. Corporators—F. Jay, Chicago, et al.

Cincinnati, O.—Merchants Automobile Company, under Ohio laws, with $10,000 capital. Corporators—Edward Stang et al.

Belleville, Ill.—Model Automobile & Garage Co., under Illinois laws, with $2,000 capital. Corporators—I. H. Wangelin, Joseph Schwarz and E. L. Schwarz.

Oklahoma City, Okla.—Overland Automobile Sales Co., under Oklahoma laws, with $10,000 capital. Corporators—Will G. Brown, T. B. Funk and Alta E. Funk.

Memphis, Tenn.—Memphis Tax-Cab Co., under Tennessee laws, with $25,000 capital. Corporators—Frank Farrell, R. H. Allen, W. D. Watson, N. J. Sawrie and S. C. Childress.

St. Paul, Minn.—Pence Automobile Co., under Minnesota laws, increase of capital from $25,000 to $250,000. Officers—Henry E. Pence, president; Fred C. Malcolmson, secretary.

Brownsville, Tex.—Brownsville Motor Car and Machinery Co., under Texas laws, with $5,000 capital. Corporators—W. H. Mason, Jr., A. G. Mason, L. H. Mallam and C. Everson.

Berea, O.—Empire Auto Specialty Manufacturing Co., under Ohio laws, with $10,000 capital. Corporators—Hitt C. Gunther, E. C. Rush, L. C. Loomis, F. R. Pfeiffer and W. K. Caldwell.

Fond du Lac, Wis.—Worthing-Clark Auto Co., under Wisconsin laws, with $20,000 capital. Corporators—G. W. Worthing, E. W. Clark, J. W. Immel, A. Hoenigstin and George H. Stanchfield.

Oklahoma City, Okla.—Corey Motor Car Co., The, under Oklahoma laws, with $25,000 capital. Corporators—G. P. Corey, V. E. Crouch, W. P. Peck, Oklahoma City; C. D. Crouch, Bravo, Mich.

New York City, N. Y.—P. & H. Taxi Co., under New York laws, with $5,000 capital. Corporators—Elek J. Ludvigh, 299 Broadway; Arthur Present, 596 Broadway; Edwin C. Hyman, 820 Broadway.

New York City—Moto Bloc Import Co., under New York laws, with $5,000 capital; to deal in and rent automobiles. Corporators—H. M. Browne, F. W. Mills, E. J. Forhan, 154 Nassau street, New York.

Cambridge, Mass.—Auto Wind Shield Co., under Massachusetts laws, with $2,000 capital. Corporators—Frank Thorsen, Cambridge, president; Herbert H. White, Brookline, treasurer; and Thomas S. Longridge.

Newark, N. J.—Manhattan & Essex Auto Express Co., under New Jersey laws, with $100,000 capital. Corporators—O. W. Jackson, G. J. Motzenbecker, G. M. Hammell, Newark; V. S. Richardson, East Orange.

Asbury Park, N. J.—Royal Gray Motor Car Co., under New Jersey laws, with $50,000 capital; to carry passengers and goods for hire. Corporators—L. F. Groce, M. F. Groce, Asbury Park; W. H. Skinner, Lakewood.

Jersey City, N. J.—Cable Pneumatic Tire Co., under New Jersey laws, with $500,000 capital; to manufacture tires and accessories. Corporators—John F. Scannel, 729 Sixth avenue, New York; Frank A. Magowan, 241 Broadway, New York; Grant Lambright, Newark, N. J.

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FEELING THE PULSE OF THE TRADE

Are the Retail Dealers Making Any Money? —What the Jobbers Say in Reply to the Question.

Taking a survey of the country, from coast to coast, are the automobile dealers, garage proprietors and the sellers of accessories at retail making money? The query has been put quite frequently by tradesmen whose plans more or less depend upon the stability of these elements of the business. No one is in a better position to know than are the jobbers who sell them goods and are in constant contact with them. As the "bankers of the supply trade", the jobbers are very much concerned for the welfare of the dealers, since the jobbing business reflects the conditions of the retail business with exactitude.

What the jobbers say about whether the dealers are prospering or not is authoritative. Conditions differ in various parts of the country, as may be gleaned by the following expressions of opinion by prominent jobbers which the Motor World has elicited in taking a census of their views on the subject.

New York City—"Business in general is in better condition to-day than ever it has been. The car dealer and garage man who is paying strict attention to business has made money this year, and always will make it. Collections are all that could be desired."

Los Angeles, Cal.—"Dealers in Southern California have passed through a fairly successful season. We believe that as a rule they have made some headway. They have undoubtedly done better than they anticipated owing to the crisis through which the country passed in the early part of the year, their sales being much larger than had been expected. Collections have not been easy to make and the jobber has worked under great hardships in carrying from month to month many of the dealers who were unable to meet their obligations."

Philadelphia, Pa.—"Business has been considerably better than we had reason to expect at the beginning of the year. Our business has almost reached the same proportion as last year, which was the largest in our experience. The outlook for the future seems very good at the present time, but collections are hard to make."

Denver, Colo.—"Business in this territory has been rather quiet for the last three months. Collections are fairly good, but considerable care has to be taken with credits, especially at this season of the year. Weather conditions have been somewhat against good business in the automobile line."

Hartford, Conn.—"Conditions among the trade in this territory are prosperous. Our losses on bad accounts have never been less than they have been this season, and everything looks most excellent for a good season for 1909."

Louisville, Ky.—"As far as Kentucky is concerned, notwithstanding the financial condition, the automobile business has been better in 1908 than in any previous year, and from present indications, 1909 business will exceed all former years. Believe most dealers can show a balance on the right side of the ledger."

Portland, Ore.—"Our total business for the year 1908 was about 15 per cent. greater than for 1907. This we believe can be reported of very few lines of business. Collections, however, have not been so good as last year, it being very difficult to collect from a great many of the garages in this section. We think this is due, however, to the fact that they have gone into the business with insufficient capital. The prospects for next year are very bright, and we anticipate an increase of our business to a considerable extent, though from the present outlook it is doubtful whether we will increase our net profits, owing to the fact that too many dealers are being quoted jobbers' prices by manufacturers."

Boston, Mass.—"Volume of business done by the automobile trade in New England the past season has been greater than we a year ago expected it would be. While we question whether the dealers have made a great deal of money, still we think those representing standard vehicles have done fairly well, particularly in the lower and medium grades. We are inclined to think that those representing the highest grades have not made a whole lot of money. The general business in automobiles and automobile supplies is in much better shape at this time, however, than we were warranted a year ago in expecting. The principal trouble has been in the slowness of collections and the difficulty of making them."

St. Louis, Mo.—"We have every reason to believe that the dealers in this vicinity have a largely increased business over previous years, notwithstanding the late financial distress. In fact, our jobbing business alone shows a 50 per cent. increase over the same period last year—far more than we hoped for. Naturally we look for a very heavy business in the spring of 1909 which will be continuous through the season."

Rochester, N. Y.—"Altogether we believe we have experienced better business than we anticipated during such a business crisis as we have passed through. This crisis, however, has not improved the credit of the dealers, according to our experience. We find that collections are harder to make. We do not think the dealers have made much money."

New Orleans, La.—"Of course the fall of 1907 and the spring and summer of 1908 were nothing to be compared with what we reasonably should have expected under normal conditions. Still we feel that the business done during that period, taking into consideration the financial conditions which existed at this time, was as much as could be expected. The dealers in this territory seem to be doing nicely and holding their own. There are of course exceptions to the rule. It is our opinion that the automobile business is in better condition to-day as a whole than it has ever been since its incipiency. The dealers who are now engaged in the business are, as a rule, more experienced, have more capital and are working along more conservative lines than they ever have before. The next few years are sure to weed out the weaker dealers and manufacturers, and those who remain will naturally grow and prosper in exact ratio to the amount of energy, brains and straightforwardness with which they approach the various problems which will arise from time to time."

Minneapolis, Minn.—"The established dealers are making money and their credits average better. There is always a class of dealers and repair men who spring up and do business for a short time whose responsibility is doubtful. There are as many of this class this season as there have been heretofore."

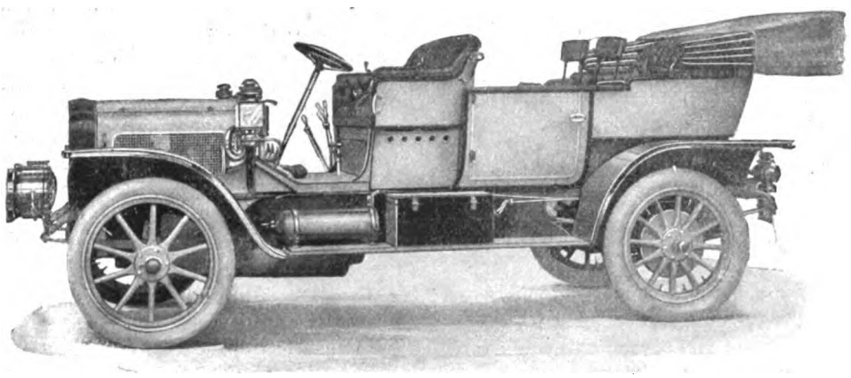
Chicago, Ill.—"The past year has been considerably better than the year previous and conditions look very bright for a very large business the coming year. The dealers in this vicinity generally have made money, but some of the smaller ones have found it unprofitable."

Indianapolis, Ind.—"The trade outlook is, indeed, a satisfactory one. Trade conditions have greatly improved over the past year, especially in the central territory and the dealers throughout the country are studying the automobile situation from a more business-like basis, and are realizing the requirements for a first-class garage and automobile agency. Capital is interesting itself more conservatively in the sale of cars and 1909 will undoubtedly be a successful year from the dealers' standpoint as well as the manufacturers' standpoint."

New York City—"A little over a year ago when the panic struck us a few automobile manufacturers fell by the wayside and everyone predicted that the whole industry would have hard sledding in 1908. The wise ones said that automobiles, being luxuries, could and would be done without; but, strange to say, the opposite has happened. Good cars sold well, and I am satisfied that most supply dealers increased their trade too. Our business in this department has shown a large increase in volume, and the profits have been satisfactory as a whole. I think that the experienced dealers have made money this year, but so many 'fly-by-nights' have been attracted to this trade by visions of big profits that credits have not been good. While the business is very much alive, I don't look for a runaway market in 1909. I mean by that that the sale of automobiles and automobile accessories should increase and probably will, but the supply will equal the demand and caution should be used."

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THE
MODEL "M" WHITE STEAMER
Is The Most Luxurious Car On The Market



The luxury of the White Steamer is unequalled by any other machine. There is no car, however expensive, which has better upholstery, better springs or better finish. Owing to the compactness of the mechanism, the body is much more commodious than in any car of similar wheelbase, (122 inches). Few other makes have such a liberal tire equipment (36x4 on the front wheels and 36x5 on the rear wheels.)

The luxury of any car, however, depends largely upon its riding qualities and here the White is "in a class by itself." It is the only car where starting and changes of speed can be effected without jerks or jolts. It is the only car which runs noiselessly under all conditions. It is the only car which is free from vibration, because it is the only car where the power is applied evenly and continuously, and not spasmodically.

Just as our Model "M," priced at $4,000, is the most desirable of the higher-priced cars, so our Model "O," at $2,000 predominates among moderate priced machines.

Write for descriptive matter.

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CLEVELAND, 407 Rockwell Ave.
CHICAGO, 240 Michigan Ave.
SAN FRANCISCO, Market St. at Van Ness Ave.
ATLANTA, 120-122 Marietta St.

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NEW YORK, DECEMBER 31, 1908.

". . . . By the way, I like the Motor World. It gives the kind of stuff the dealer wants to know, and you ought to hold your own long after the general public stops reading automobile papers."
NEW YORK SPORTING GOODS CO.,
James E. Murray, Secretary

The Palace Show Number of the Motor World will, of course, bear the date of January 7th. The dates of the Garden Show Numbers will be January 14th and 21st, respectively.

The Outlook for the New Year.

In connection with the simple process of turning down another leaf in the history of New York's great automobile shows, this important fact should be jotted down with care. The first of the shows of 1909 and the last of 1908 also is the first to be held since the industry at large passed through the fire of a great financial upheaval and emerged practicaly unscathed.

That at the time of the last exhibition of its kind in Grand Central Palace it was freely predicted that before another year should have rolled by the industry would have suffered the severest test to which it could be put, is yet fresh in memory. How it was said that automobiles, as luxuries, would be among the first of the commodities to be slighted when conditions of money stringency began to become at all general, and how the apparent prosperity of the industry was decried as being a false index to its real condition, which was one of instability, is easily recalled. But how the industry should have passed through the ordeal without serious affliction and resumed its way with practical unconcern, still is more or less of a marvel.

With the opening of the doors of the Palace, however, a somewhat chastened if not afflicted industry will welcome the public. The lessons of the period of threatened downfall have been well learned, and it is unquestionable that more conservative methods of conduct now rule the business side of the industry than formerly were in vogue. As for the product itself, it cannot be gainsaid that the rapid rise of the medium priced car, built to cater to a real requirement among classes of buyers numerically very great, has been influenced very largely by the alarm of the panic time.

That the industry as a whole is greatly benefited, therefore, is beyond question, since it has learned not simply the advantages of cautious operation in money matters, but of developing the quantity market or a quality basis. There is less of the speculative element manifest to-day perhaps, than ever before during its short term of existence. This being so, the industry is in a fair way to continue its upbuilding for the future. Generally speaking, the twelve-month just closing proved a far better one than even the most optimistic had reason to anticipate, and the augury is particularly happy for an even more prosperous new year.

Winter Motoring and the Small Car.

In arraying small cars and large cars comparatively in the matter of sales, the latter appear at their best during the winter months, according to the dealers in the big cities. This is because commodious, high powered touring cars and limousines are enjoying a more extensive winter use each year, so that the prospective purchasers of these types are just as eager for their machines in November or January as in May. To secure satisfactory delivery in the spring, many buyers of certain favored small cars are obliged to place their orders early in the winter, having in mind the time that will elapse between the filing of the order and the appearance of the car. But the actual arrival of the warm months is what moves the great proportion of runabout and small car enthusiasts to the maximum of their buying.

The change in the users' attitude toward the big cars, by which these machines are now regarded as part of winter life in the city instead of being shut in store rooms to await a brief season of use in the summer, will, almost without doubt, be extended to the smaller cars as well. Even the owner who required the presence of spring weather to stir his blood to the point where he paid over his money for a runabout or light car will find himself reluctant to give up the use of his machine in the fall and winter, and, supported by growing custom, he will come to use it the year through.

Many devices in the way of clever windshields, heating arrangements and the like have been made available to the winter motorist, yielding a degree of protection and comfort that should easily swing the beam toward all-the-year-'round enjoyment of motor car transportation. Inventive minds have also devised methods of relieving drivers from all need of worry as to winter "skidding" dangers. It is therefore easy to see why those who have used their cars for one winter are ready to do it again the next. While it is perhaps too much to expect that first-time automobile purchasers will abandon their preference for spring delivery, yet as the people who have had cars before come into the market for their second, third or fourth cars in increasing numbers, it will be found that the sale and delivery of machines will be spread out more evenly through the different months, rather than being bunched in the early part of the year as at present. Veteran owners and, in frequent instances, novice purchasers of the big cars already recognize that the automobile is for every month, and the smaller cars will before long win the same recognition.

International Patent Law Assailed.

Whatever favorable results may come of the projected "patent treaty" with Germany so far as obtaining for American inventors a more liberal dispensation of the

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German patent office practice, it is to be hoped that on this side of the water the patent system be kept free from entanglements and agreements contrary to the spirit of absolute impartiality which is imposed upon it by the Constitution. It is somewhat old fashioned but none the less sound to refer to the Constitutional sources of governmental institutions.

Patent protection for new and useful inventions, whether conceived by foreign or native mind, is designated by the Constitution as a "right" and not a mere privilege. However expedient it might at times appear to retaliate against a foreign country's ill treatment of Americans, or to attempt a grateful reward for concessions, no discriminations can properly be exercised by the United States Patent Office in its dealings with foreign inventors no matter where they may reside or from what part of the world they make their applications. For this reason the Patent Office should be saved from diplomatic influences and bargaining.

With the advent of the taximeter appliance in motor vehicle service has come the old, familiar worry of the patron as to whether the instrument is being honestly used, or whether it may not be designed to trick him out of a few pennies now and then. The suspicion that the driver may be turning more corners to the left than to the right, or that he may spend his waiting moments in running the motor with one wheel jacked off the ground, is nothing as compared with the horrible doubt as to the integrity of the proprietor himself. But after all, it is merely the old story of the gas meter and the computing scales. After a time, the public will have become adjusted to the new condition, a few necessary laws will have been enacted, and taximeters will cease to annoy and will fit into a very unobtrusive though important nitch.

Having obtained a donation of $5,000 from the National Association of Automobile Manufacturers to relieve its immediate necessities, it is understood that the American Automobile Association is making ready to ask manufacturers generally to support an official organ, the publication of which practically has been decided on. The publisher who already seeks the favor of the trade with four or five other mediums is said to be "the man behind the scene" of the embryo official organ.

CARS AS "HOUSEHOLD EFFECTS"

Appraisers' Decision Denies Such Status to Foreign Automobiles Brought Home by Tourists—Reasons Stated.

Foreign cars brought over as "household effects" by a "person from a foreign country" are not to be admitted without paying the 45 per cent. duty imposed by the tariff when the "person" is a resident of the United States, according to a ruling just handed down by the Board of General Appraisers at New York. The law provides for an exemption from the duty on bona-fide household effects that have been used abroad for not less than a year by persons or families from other countries who come to the United States, but the Appraisers take the view that an American returning from a comparatively brief trip abroad is not a person from a foreign country in the sense contemplated.

A protest was filed against the assessment of duty on a machine belonging to Paul A. Isler, it being claimed that the car was entitled to free admission as household effects under paragraph 504 of the tariff act of 1897. In passing upon the case the Board of Appraisers gave the results of their findings as follows:

"It appears from the evidence that the protestant is a resident of the United States; that he purchased the automobile while on a visit abroad, about two years prior to its importation to this country; that it was used abroad by him during his visit about four months at that time, and on other visits prior to its importation.

. . .

"Since the decision in Arthur v. Morgan (112U. S., 495) and Hillhouse v. United States (152 Fed. Rep., 163; T. D. 27831), there is not question that an automobile is a household effect within the meaning of this phrase as used in paragraph 504. We are inclined to think that the use of the automobile was practically continuous for more than a year. It can scarcely be that the requirements of this paragraph are so narrow that the household effects in question must have been in actual physical use every day or every week or every month of the year preceding importation. The question about which we think there is grave doubt is whether the protestant is, under the circumstances of the case, in a position to claim the benefit of free entry. . . .

"A citizen and resident of the United States going abroad on a few months' pleasure trip and returning is not, in our judgment, a person from a foreign country within the meaning of that phrase as used in this paragraph of the law. The benefit of this was, in our judgment, intended by Congress to accrue only to citizens of a foreign country or citizens of this country who remain in a foreign country at least long enough to acquire a temporary residence there. A citizen of the United States who is a mere traveler to and from Europe, without ever remaining there more than a few months, has not acquired such status as to be entitled to the exemption provided by paragraph 504."

COMING EVENTS

December 31-January 7, New York City—American Motor Car Manufacturers' Association's annual show in Grand Central Palace.

January 1-2—Quaker City Motor Club's two days endurance run, Philadelphia to Wilkes-Barre, Pa., and return.

January 16-23, New York City—Association of Licensed Automobile Manufacturers' annual show, Madison Square Garden.

January 21-31, Los Angeles, Cal.—Automobile Dealers Association's show.

January 25-30, Cincinnati, O.—Automobile Dealers Association's show.

January 27-February 3, Philadelphia, Pa.—Automobile Trade Association's eighth annual show, Second Regiment armory.

February 6-15. Chicago. Ill.—National Association of Automobile Manufacturers' Show, Coliseum and First Regiment Armory.

February 15, Detroit, Mich.—Detroit Automobile Dealers Association's show, Wayne Pavilion.

February 15-20, St. Louis, Mo.—Automobile Manufacturers and Dealers Association's annual show.

February 15-20, Cleveland, O.—Automobile show, Central Armory.

February 16-18, Denver, Col.—Denver Motor Club's first annual show, Auditorium.

February 20, 21, 22, New Orleans, La.—New Orleans Automobile Club's Mardi Gras carnival 3 days race meet.

February 22, Cleveland, O.—Cleveland Automobile Dealers Company's show, Central Armory.

February 27-March 3, Hartford, Conn.—Automobile Dealers' Association show.

March 1-6, Omaha, Neb.—Omaha and Council Bluffs dealers' show, Auditorium.

March 6-13, Boston, Mass.—Boston Automobile Dealers Association's (Inc.) seventh annual show, Mechanics Building.

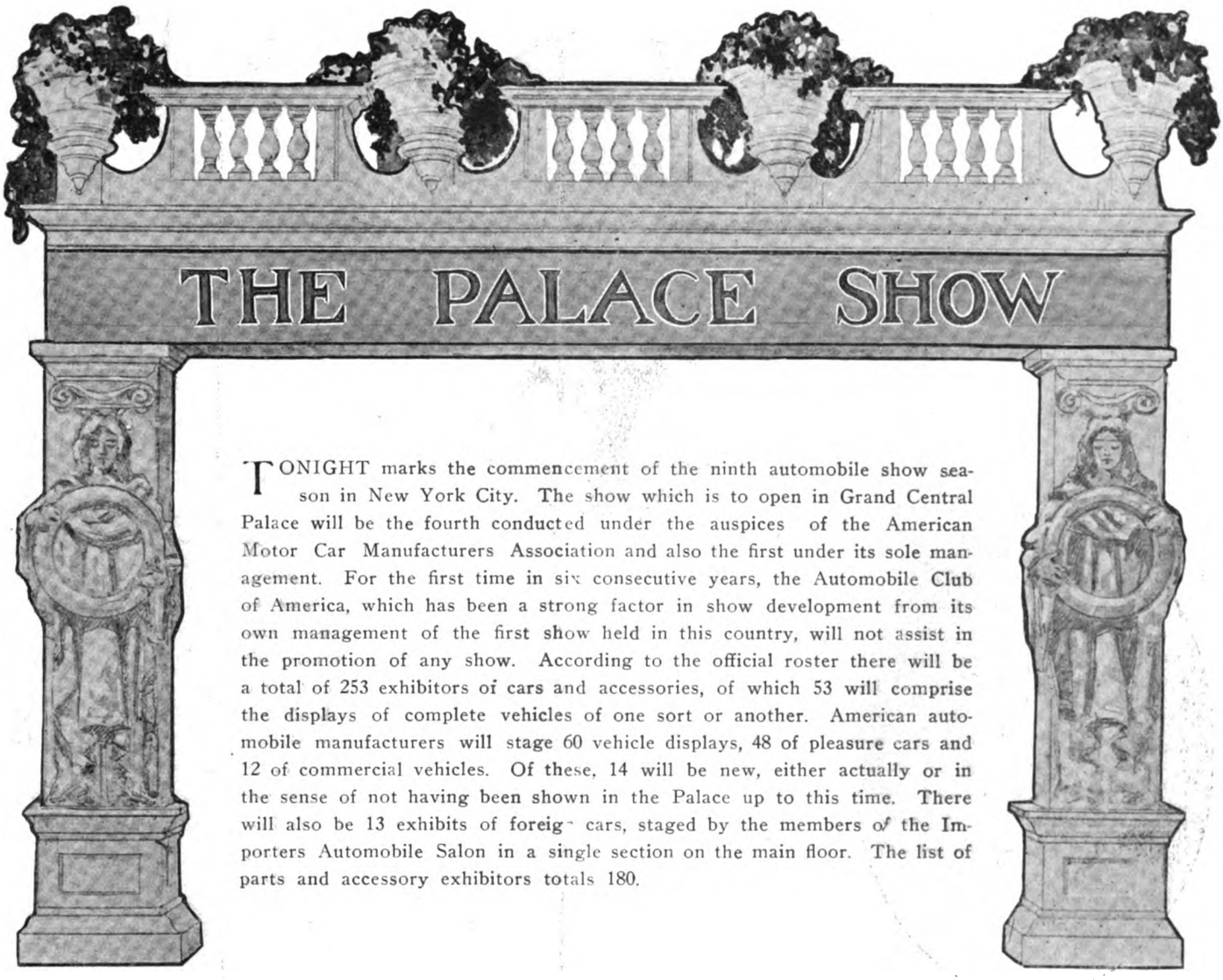
March 8-15, Kansas City, Mo.—Dealers Association's show, Convention Hall.

March 10-13, Memphis, Tenn.—Automobile show, Auditorium building.

March 15-20, Rochester, N. Y.—Rochester Automobile Dealers Association's show, Convention Hall.

March 27-April 3, Pittsburg, Pa.—Automobile Dealers Association's show, Duquesne Garden.

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With prospects bright for a prosperous season to come and a prevalent feeling of security in the sentiment that the general adoption of the medium and low priced models which now rule the market to so great an extent is destined to react favorably on the industry, conditions are particularly favorable for the success of the show which is about to open its doors. That only a portion of the industry is to have representation in the present session, another large section planning to conduct a similar enterprise within a fortnight by no means implies any lack of comprehensiveness on the part of the undertaking of the American Motor Car Manufacturers' Association which is to hold the boards in the Grand Central Palace for the next seven days. Indeed, it is a happy circumstance of the process which has brought about the segregation of the so-called "Independent" and "Licensed" forces, that their lines have been drawn without regard to type, and that each of the two great shows will be complete in itself. Even so, the first, will offer in variety of types and divergency of designs and practices an unapproachable array of vehicles calculated to satisfy the requirements of every conceivable creed or denomination of buyer.

Nine years ago the first affair of its kind was convened in Madison Square Garden under the auspices of the Automobile Club of America. That the present show is the ninth in succession also, despite the fact that no show was held during the year 1902, is due to the fact that two shows were held in 1906, marking the transition back from the late to the early fall date. Last year's October dating, and the opening of the present season nearly two months later in the year, mark a second swing of the pendulum. While the first show was held in November, and early December shows have been seen on two other occasions, this is the fifth show to fall in some part of the month of January.

A significant feature of the present exhibition is the withdrawal of the Automobile Club of America from active participation in its affairs. Until last year that body had managed or participated in the management of a show each year. The first five of its undertakings were carried out within the precincts of Madison Square Garden. The formation of the A. M. C. M A., however, enabled it to establish the first independent show when, in 1906, the Association of Licensed Automobile Manufacturers first secured the Garden for its own use. With the silent support of the A. M. C. M. A. and the assistance of its members as exhibitors, the show was staged in the Sixty-ninth Regiment Armory. The following year adjournment was made to the Palace, which since has been the scene of one other exhibition conducted under the same joint auspices. This year, however, the management of the affair is entirely in the hands of the A. M. C. M. A., under whose persuasive guidance it has assumed greater proportions than ever before.

Although nominally placed in control of the show for the first time this year, Alfred Reeves, general manager of the association, Benjamin Briscoe, its chairman, and H. O. Smith, who is chairman of the show committee, actually had been deeply involved

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in the work of perfecting the organization of the previous ventures.

Just what it means to stage and manage a big metropolitan exposition of this nature it is given to very few men to know. The immensity of the task and the amount of tedious detail to be handled carefully and critically are beyond the comprehension of the ordinary visitor—even of the exhibitor himself in many cases. It is worthy of note also, that the mere administration of the show during its life, is a very small portion of the work entailed in planning and organizing it. On this account, when the doors of the Palace open tonight, the committeemen will see the culmination of a prolonged effort lasting over more than nine months, and just as the tedium which awaits the exhibitor in his stall is beginning to take hold, the show management experiences a feeling of assurance and contentment unknown for many weeks, because the hardest portion of its task is now over.



BENJAMIN BRISCOE
Chairman of Committee of Management

The setting for the show is quite the most ostentatious yet assumed in the Palace. The exterior, with its bare portico of structural iron and glass, has been transformed into an ornamental portcochere, backed by a huge oil painting in deep-set frame, brilliantly illuminated at night, and alluring to the displays within. The uncouth walls of the entrance hall and stairway have been disguised with huge oil paintings depicting various conceptions of the grouping of feminine beauty with mechanical achievements in the shape of motors, ignition devices and accoutrements of various sorts. Heroic statues further grace the hall and point the way to the upper regions where the show is held.

In the main hall, and at the end ordinarily occupied by the stage, a garden has been laid out, the greenery surrounding but not concealing a further grouping of statuary. The early English style of treatment accorded the entire interior, though simple in detail, lends itself to the purpose it is destined to serve, which is that of forming merely an inconspicuous and harmonious background for the displays which constitute the real purpose of the scene.



H. O. SMITH
Chairman of Show Committee

Show Week Calendar.

Thursday, December 31.

Meeting of Show Committee A. M. C. M. A., 10 a. m.

Private view of Show to members of the press and invited guests, 3 p. m.

Meeting Executive Committee, New York Automobile Trade Association.

Formal opening of Show, 8 p. m.

Gala Night.

Friday, January 1.

Army and Navy Night.

Saturday, January 2.

Show Smoker to visiting motorists and dealers, at A. C. A. club house, 10.30 p. m.

Students' Night.

Monday, January 4.

Meeting Executive Committee, American Automobile Association, 2 p. m.

Engineers' Night.

Tuesday, January 5.

Meeting Executive Committee, National Retail Dealers Association, 10 a. m.

Show Luncheon to exhibitors, by A. M. C. M. A., Hotel Manhattan, 1 p. m.

Meeting Board of Governors, Automobile Club of America, 4 p. m.

Annual Meeting, Society of Automobile Engineers, morning and afternoon sessions, at A. C. A. club house; dinner, 8 p. m.

Society Night.

Wednesday, January 6.

Meeting Committee of Management, A. M. C. M. A., 10 a. m.

Meeting Board of Directors, Importers' Automobile Salon.

Executive Committee Meeting, Motor and Accessory Manufacturers.

Merchants' Night.

Thursday, January 7.

Executive Committee Meeting, American Motor League.

Municipal Night.

Aside from the decorations, several other innovations have been brought about. For example, the official opening at 8 o'clock to-night will be presided over by Acting Mayor Patrick F. McGowan, who in the absence of Mayor McClellan will make the address of welcome and formally turn the show over to the members of the trade and the visiting public. Although civic recognition of the importance of the shows has been courted repeatedly in the past, it never has been won until now. While this ceremony will directly affect the public as signifying the real opening of the exhibition, the private view of the show at 3 o'clock in the afternoon will be more auspicious than any of its predecessors. Over 3,000 invitations are said to have been sent out to persons qualified to attend the affair, these including judges, congressmen, senators and assemblymen of the State legislature, members of the Automobile Club of America and the officers of all automobile clubs affiliated with the American Automobile Association.



ALFRED REEVES
General Manager A. M. C. M. A.

Of the 253 separate exhibitors of complete vehicles, parts, accessories and sundries, which are revealed by the official list, no less than 73 will be either the manufacturers of complete cars of one sort or another, or their representatives. The American industry will have a contingent of 61 displays, 48 of them being pleasure vehicles and 12 commercial or business vehicles, while no less than 180 separate displays will be given over to the exhibitors of parts and accessories.

Failing the encouragement needed to support an independent show of their own, the members of the Importers' Automobile Salon have this year joined forces with the A. M. C. M. A., and taken over a liberal allotment of floor space for the staging of

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the foreign product. Of importing exhibitors there will be a bakers' dozen, one of them figuring in the commercial vehicle section. In adition to the elaborate and high-powered types of pleasure vehicle which form their stock in trade, several of these stands also will be rendered more attractive to the visitor by the presence of a number of high-speed racing cars, which



GODDESS OF MOTORING

have figured more or less conspicuously in recent events.

Attention always turns immediately upon entering the show to the new cars exhibited for the first time. As is usually the case, some of these will be found to have been brought out some little time ago and to be



GENIUS OF THE MOTOR

entitled to the term "new" only from the fact that they have not been shown previously in New York. Others are of entirely new production and consequently are objects of general curiosity on every hand.

Included in the general class of new vehicles, as just indicated, will be found no



THE SPIRIT OF SPORT

less than fourteen. They are the Benner, Browniekar, Coates, Middleby, Midland, Regal, Inter-State, Speedwell, American Simplex, Bristol, Cleveland, Grabowsky, Gramm-Logan and Hart-Kraft. The Benner is a light, six-cylinder runabout of semi-racing lines, but destined for general runabout duty. The Browniekar is distinguished as the first and only gasolene-driven juvenile machine ever placed on the market—a real automobile in miniature, but designed along lines which are calculated to make it safe as well as active in the hands of fortunate youth.

The Middleby is an air-cooled machine, with 25-horsepower motor, weighing about 1,750 pounds, and selling for $850 in runa-



GODDESS OF MOTORING

bout form. It also is made with surry or convertible runabout body. The Midland is a larger and more pretentious vehicle, selling at $2,250 and featured as a particularly light weight machine, considering its power and equipment. The Regal is intermediate in cost between the last two named, is propelled by a 4-inch "square" engine, and is produced either in runabout or tour-



GENIUS OF THE MAGNETO

ing form. The Speedwell, though not before exhibited in New York, has been seen in the East before, and is well known in the Middle West. It is one of the many

THE CARS ON VIEW.

American.

Acme	Moline
American	Moon
Anderson	Mora
Atlas	National
Austin	Oakland
Benner	Overland
Browniekar	Pennsylvania
Brush	Premier
Cameron	Pullman
Cartercar	Regal
Chadwick	Reliable-Dayton
Chicago	Reo
Coates	Richmond
De Luxe	Holsman
Ford	Inter-State
Gaeth	Jackson
Gyroscope	Kiblinger
Lane	Kisselkar
Marion	Lambert
Marmon	Schacht
Maxwell	Simplex
Middleby	Speedwell
Midland	Stoddard-Dayton
Mitchell	Welch

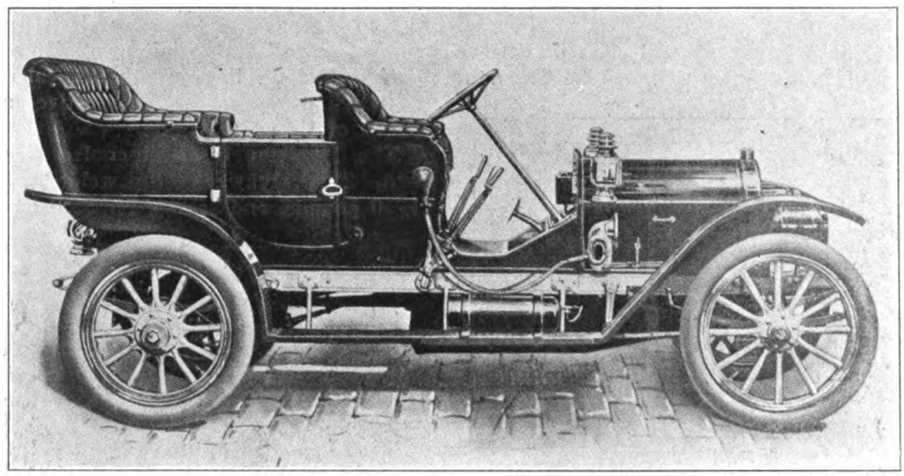
Foreign

Bayard-Clement	Hotchkiss
C. V. G.	Isotta
De Dietrich	Lancia
De Dion	Panhard
Delahaye	Renault
DeLaunay-Bellville	Sultan
Fiat	

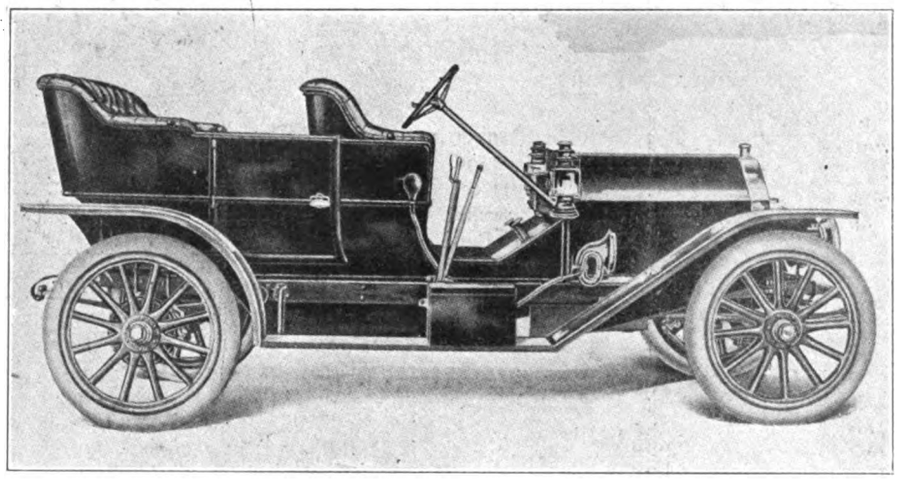
Commercial.

American	Lansden
Bristol	Manhattan
Cleveland	Pittsburg
Commercial	Rapid
Grabowsky	Reliance
Gramm-Logan	Sultan
Hart-Kraft	

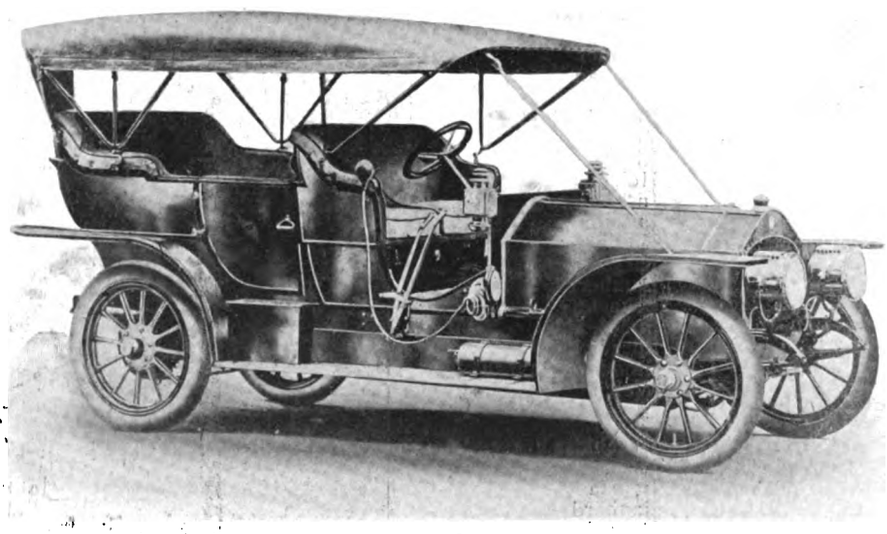
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MOON MODEL "C" TOURING CAR



INTER-STATE 35-40 H. P. TOURING CAR



ACME TYPE "20" SEXTUPLET

"completely equipped" cars, selling at a moderate figure, and possessing in addition to these inducements several structural details which are noteworthy.

Another of the newcomers, in this case a machine which never before has been exhibited in or out of New York, is the Inter-State. It is an unusually attractive offering of the medium-priced variety, but exceptional in that it is presented as a complete touring car or with a combination roadster, tourabout and demi-tonneau body—an innovation which is said to be of compelling ingenuity—at $1,750. When it is considered that it is driven by a 35-40 horsepower motor and is correspondingly robust in other particulars, the significance of the price quotation at once is made apparent.

The Bristol and Cleveland are commercial vehicles of the cab variety, the former possessing a number of unique features in the way of provisions for interchanging of parts with small loss of time. The Grabowsky, and Gramm-Logan, both are commercial vehicles which are new and both are the product of constructors who have become established within the year. The Hart-Kraft also is intended for commercial uses, but is distinguished by the use of high wheels, an interchangeable power plant, and a number of other features intended to render it especially suitable for light delivery work.

Another newcomer at the show is the Oakland, which though exhibited at other shows last spring, never before has come to New York. In the older of the two models, is to be found an unique system of balancing, which is altogether unusual and which makes possible an almost total suppression of vibration. The motor is unusual and original in other respects as well, and the vehicle as a whole displays an astonishing number of novel features. A second and larger model which is absolutely new, is equipped with a four-cylinder 40 horsepower motor.

Among the machines, already familiar as to name, but not displayed in new models this year may be mentioned the Acme, which in the main, follows its prototypes, but is shown with an engine of increased bore, enlarged valves, a rearrangement of the braking system and a marked reduction in weight.

The Cartercar, whose makers have recently undergone a change of name and a change of location, is produced in a brand new form at an even $1,000. the vehicle carries the usual friction drive feature which is characteristic of all machines of the same make, and has an 18-20 horsepower motor of the opposed type, also typical of Cartercar construction. The machine is fitted with a roadster type of body having a removable rear seat, and carries a full equipment.

The latest types of the Ford, Marmon, Maxwell, Mitchell and Pullman cars have been described in these columns within a short time, as have also the Jackson and Stoddard-Dayton. The Overland, which attracted considerable attention a year ago from the fact of its having an original system of speed control by means of pedals and was minus the usual side levers, again appears in practically the same form, the unique method of mounting the planetary change gear on the rear axle being retained. It also is accompanied by a second and entirely new model which has a four-cylinder motor and selective system of gear change operated by side levers in the conventional manner. The new Premier model,

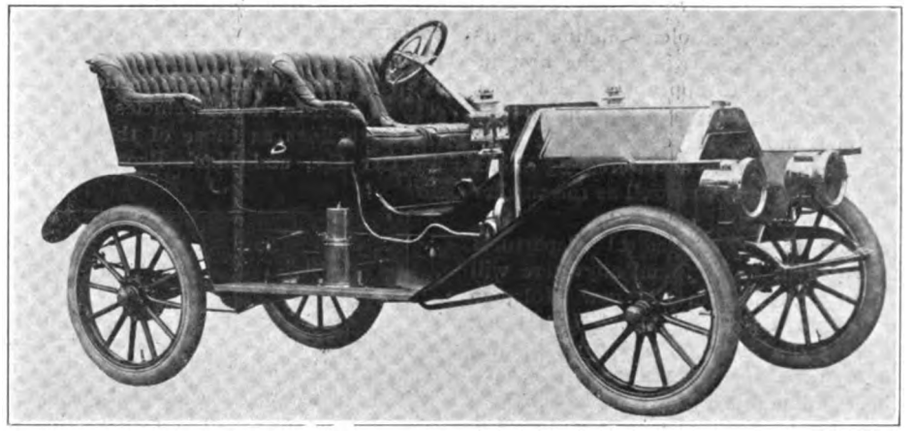
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to cite another example of a recent addition to a well known line, is of 30 horsepower and in many respects is identical with the corresponding type of the current season. The body design is entirely new, however, and sundry minor refinements have involved alterations in the construction of the chassis.

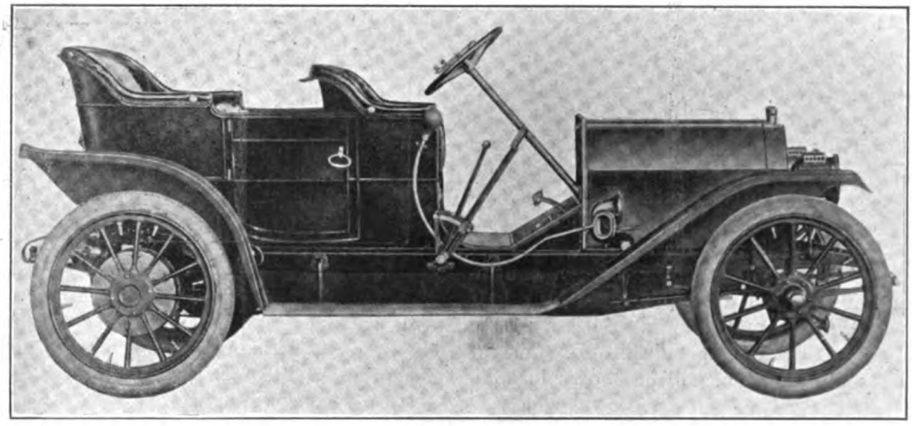
Of the "features" of the complete vehicle section of the show, it is sufficient to say that the dominant characteristic is the relation of selling price to the special elements which are most emphasized in each instance. Thus the little Maxwell Junior which embodies practically all the characteristics which have become identified with Maxwell construction as applied to the larger models which carry opposed motors, is rendered even more attractive than its compact design and small size otherwise would entitle it to be by the fact that it is offered at the $500 figure, inclusive of equipment. In a similar way, the $800 Lambert, with its friction transmission enclosed, single chain drive, three-passenger rumble runabout body and 18 horsepower motor, is said to be a remarkable concession to the requirements of the buyer affording a high value at a very low figure.

A machine noteworthy in a different way, though still made more interesting by the relatively low cost of the vehicle, is the Oakland, with its unusual construction all the way through. From the steering gear, which is arranged to give a very slight variation of leverage over the steering wheels when turned into extreme lock, to the planetary transmission with disc clutch, and shaft drive, this car will be found to reveal the original touch of the absolutely independent designer.

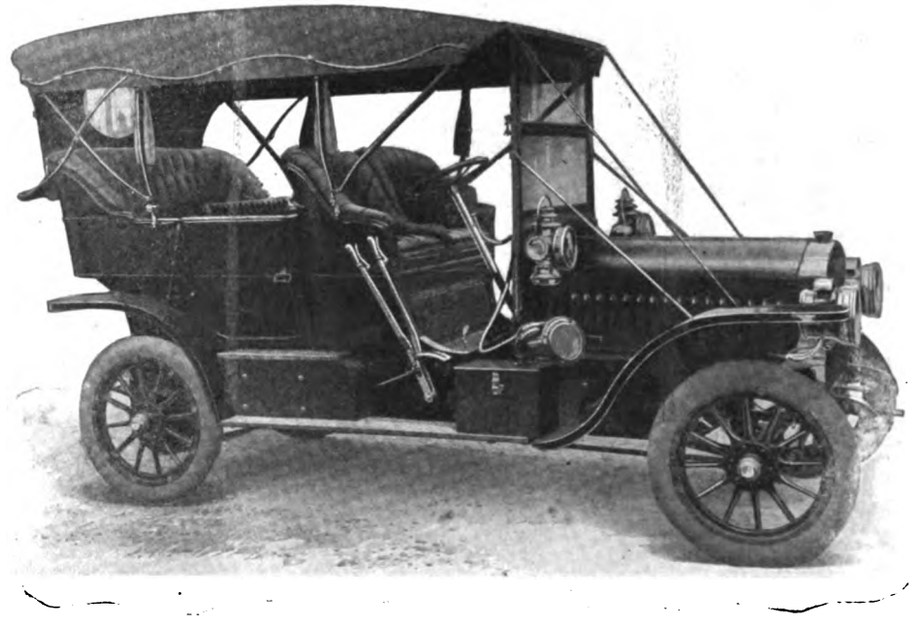
Of the Model "T" Ford, which is the most recent product of Henry Ford's genius and which though on view in New York City for some weeks, has not before been displayed at an automobile show, it may be said that aside from all other structural points, the method of design and assemblage of the power plant is most remarkable. The scheme of embodying the magneto in the fly wheel of the motor where it is perfectly protected from dust and dirt, as from injury due to violence from external sources, is perhaps its most interesting feature. The use of the combined underpan, bottom section of the crank case, and engine bed, the part being made of pressed steel and also being stretched to the rear to form a portion of the housing for the change gear, also is sufficiently radical in itself to excite comment. The motor is cast in block form, but the cylinder heads are removable, and are formed integrally in a single, water jacketed piece which may be lifted clear of the motor at slight expense of time or labor, thus giving free admittance to the tops of the pistons and the upper portions of the cylinder walls for the purpose of effecting repairs or removing the ever troublesome carbon deposit, which with ordinary construction is so hard to get at.



OVERLAND MODEL "31"



MARMON "THIRTY-TWO"



LAMBERT MODEL "B-2"

In respect to the single element of interchangeability of the power plant, the three commercial types of Bristol, Grabowsky and Hart-Kraft, already mentioned, are entitled to attention, is in each of the three cases special provision has been made for the ready removal of the complete power plant, motor, change gear and all, and its replacement after repairs have been effected, or the substitution of another, similar unit, and all with a minimum of effort and time loss.

The "toy" automobile referred to above though the first machine of its kind to be

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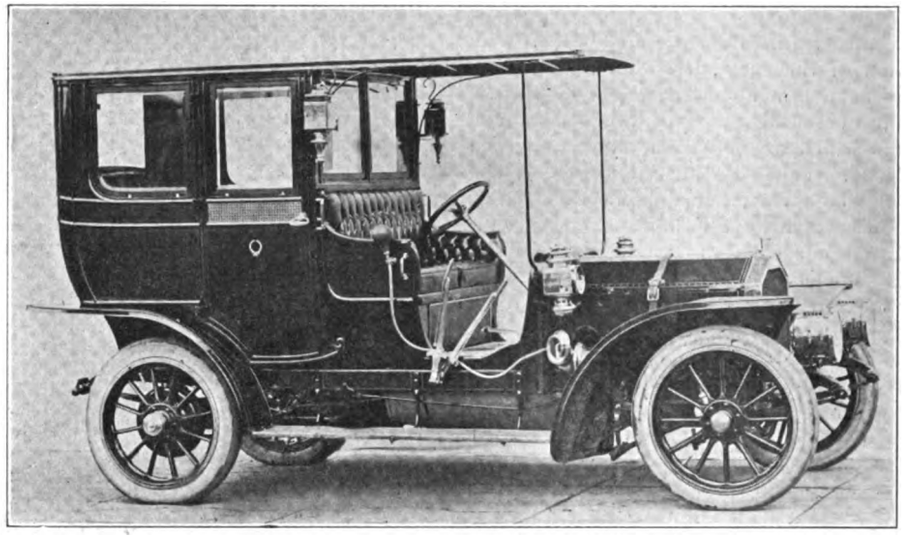
built using a tiny gasolene engine as its source of motor power, is not the first juvenile automobile to appear in the Palace, a tiny electric vehicle having been on view at the last show. Its construction, however, is likely to prove an interesting object for study to the larger as well as the smaller fry.

Probably the most radical departures from precedent to be found anywhere will be those embodied in the new Holsman "Gentleman's Carriage," which is making its bow to the automobile show-ging public at this time. Its motor, which is mounted throughout on annular ball bearings, is unusual in design to the extent of having a substitute linkage in place of the ordinary connecting rod and crank shaft construction, somewhat similar in principle to the Scotch yoke of other lines of engineering practice. The motor is of the four-cylinder opposed type, air-cooled, compacted into an astonishingly small amount of space and mounted on the jack shaft housing, which is moved toward the front or back of the carriage in order to adjust the tension on the driving cables—which are a well known Holsman feature.

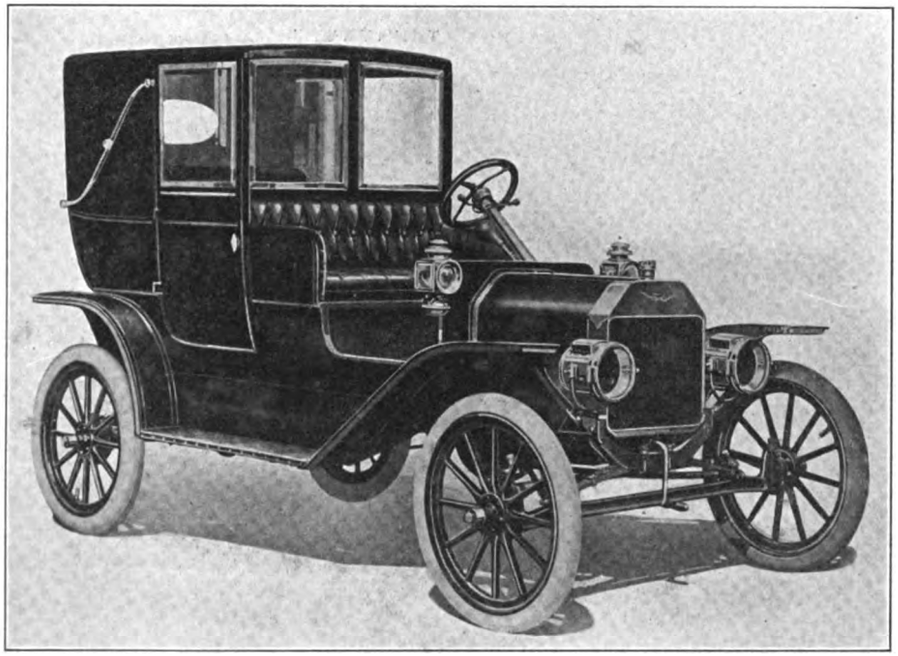
The high-wheeled motor buggy contingent this year will be represented by a half doxen different makers. In addition to the Holsman, the Kiblinger, Chicago, Schacht and Reliable-Dayton, will be shown in addition to the Hart-Kraft commercial vericle already referred to. That the latter may not stand alone, the Reliable-Dayton stand also will be graced with a commercial or delivery wagon never before shown at a New York show, though it made its appearance along with a number of other cars to be represented at the Palace when the National Carriage Dealers Protective Association held its vehicle show last fall in the same building.

The purely commercial section will display in addition to the vehicles named, such extensive lines as those of the Rapid Motor Car Co., and Mack Bros. Here also will be found the small representation of electric vehicle construction with a single exception in the Detroit Electric, which is staged also n the balcony. Those of the commercial vehicles which are electrically propelled are the Commercial trucks, the Pittsburg delivery wagons, light and heavy, and the Lansden ffuartet of vehicles, light and heavy, but all designed for commercial purposes.

"Tendencies" or "trends" in designs and construction are of far less interest to the show-goer this year than ever before because of the high degree of interchangeability which has been achieved by so many makers, itself tending to discourage any alterations in design except such as may be absolutely necessary or of minor significance, and because of the uniformity of the various products in so many respects. Nevertheless in the general adoption of certain standard types of vehicle, in the installation of certain important accessories and fittings, sufficient inclination among the makers to flock together is discoverable, to furnish ample opportunity for the thoughtful visitor to pursue his accustomed show avocation of studying the general movements of the mechanical side of the industry.



PULLMAN MODEL "M" LIMOUSINE



FORD TAXICAB

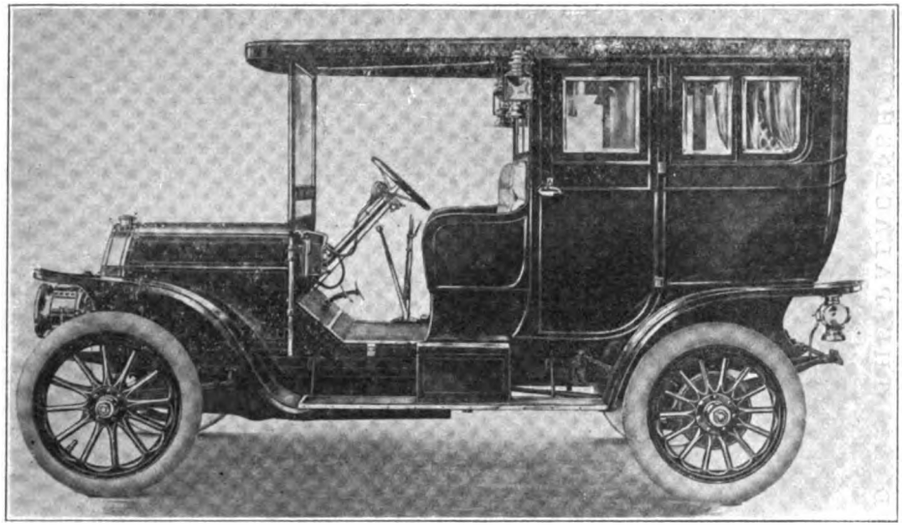
By way of characterization, it is sufficient to say that the Palace Show will reveal in astonishing proportions, the effect of the movement of the year which, beyond all question has been the development of the medium priced car. Besides, there will be the ever-growing display of closed vehicles, which, whether designated openly as taximeter cabs, or whether planned for the more ostentatious use of the calling and shopping town car, form a distinct and interesting class, and quite as much an indication of industrial trend as is witnessed in the low and medium priced touring car and runabout.

In body design, this same short, handy town car, with its close coupled chassis, will be found in many styles, and may be considered a feature of the show. Wheels larger than ever will be seen on every hand. On the heavier vehicles the 36-inch wheel has become practically standard, while 40 inches of wheel diameter on the American does not look as ungainly as did the 36-inch wheels of a few years ago. Tires have been silghtly increased in cross section in many instances, particularly on the larger vehicles.

In spring suspension the usual amount

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of ingenuity has been expended. The once all but universal semi-elliptic spring has been replaced in many cases by full elliptics and three-quarter platforms. Further springs have been improved in hidden structural details, such as by the use of the



STODDARD-DAYTON "9-F" LIMOUSINE

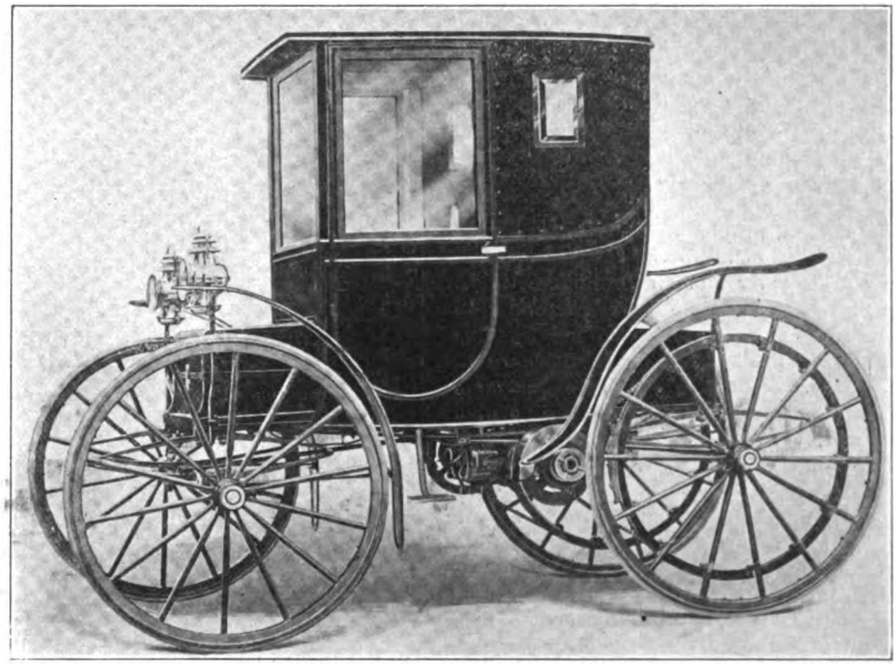
costly and high grade metals, which are capable of greater elasticity and longer life than ever was imagined by the pioneers of the carriage trade.

The tendency toward increasing the number of cylinders with no limit in sight, which was so noteworthy a few years ago, has ceased, and the pendulum is swinging back toward lighter and simpler constructions more suited to the needs of the masses. Of course, there are and will always be structures suited to a limited class who admire the smooth running of the multiple cylinder motor and to this class the big six cylinder machines, of which there are a goodly number, will appeal, but the lighter fours will attract the attention of the majority, with a limited number of two cylinder cars like the Jackson, Lambert and Maxwell which, though made in large numbers, do not form an impressive array at the show.

Perhaps one of the most remarkable developments, if not of the past year, certainly of the past two years, has been the growth among the makers in the popularity of the magneto. On a very large number of cars of medium price it is obtainable as an option, while on a smaller but correspondingly noteworthy group of cars it is found as a regular part of the stock equipment, and so featured by the manufacturer. As a matter of course, the use of the high tension system has been adopted by the makers of the more luxurious types of vehicle, almost without exception.

Among other items of simplification which this movement has aided very largely is the clearing of the dash, which this year will be more marked even than it was a year ago, when it was widely commented upon. Oiling systems have been simplified and placed on or near the parts they serve instead of on the dash. Speedometers and odometers and often clocks have been combined into one instrument, which is a serviceable ornament instead of a complicated clutter.

The two stroke cycle motor as used by the Atlas, will be shown in slightly increased numbers and will attract attention more than ever because of the possibilities of lower cost and still greater simplicity; both of which lead toward a larger use of the motor vehicle. The friction drive is another simple device which is capable of superior service. Shown for several years on the Lambert and Carter car it is winning recognition as a satisfactory drive for light vehicles where ease of manipulation and wide range of speeds is needed.



HOLSMAN "GENTLEMEN'S AUTOMOBILE"

While mechanical tendencies no longer form the attraction to the show-goer that they used to do, there are still a number of points about which no little interest hinges even for the layman. Furthermore, it is noteworthy that as time goes on, these questions concern more deeply the technical side of motor construction. Where a few years ago the number of cylinders employed, the relative advantages of shaft and chain drives, and the comparison of weights and powers absorbed the attention of the visitor very largely, now the use of the finer materials of construction, and other considerations which formerly appealed only to the designer and builder are coming to the notice of the ordinary observer.

One of these considerations is revealed in the wide divergence of practice in the use of ball and roller bearings. With the exception of the crank shaft, it is now customary to use some sort of anti-friction bearing on practically every journal of the high grade car. In respect to the exact type employed, however, there appears to be no general agreement among the designers. In some instances the advantages of the annular ball type are exploited with especial vigor by makers who employ them practically throughout their cars. Others, with equal eranestness sing the praises of the roller bearing and use it with commendable consistency. In still other cases "mixed" practice is found, rear axles being mounted in roller bearings, while the shafts of the gearsets are carried by ball bearings. Occasionally front and rear wheels are mounted on different types.

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Examples of the use of roller bearings on all four wheels are to be found in the case of the Acme, Stoddard-Dayton and some of the Lambert models, while ball bearings are used on the American, Brush, Moon, National, Pennsylvania, Premier, and some others. Other designers who employ ball bearings at one place and rollers at another, and, like the Marmon, employ rollers on the front wheel bearings and balls on the rear, or like the Mitchell, have balls in the front and rollers in the rear.

In general the use of roller bearings seems to be increasing, although the users of ball bearings have lost no enthusiasm and their use is rapidly extending, particularly to the smaller parts, where space and weight is of some importance. The fact that the roller depends upon a line of contact instead of a point renders it more able to carry a heavy load, and thus accounts for a preference in the certain places. The tendency toward the use of ball bearings on the motor shafts seems not to be increasing, although the new Holsman motor employs balls throughout.

In a word, the growing use of the antifriction type of bearing is a marked tribute to the general adoption of modern and improved methods of accurate interchangeable production and to the use of high grade metals. Without these features, the bearings would be practically useless, since any inaccuracy of alignment, any inequality in the temper of the material of either balls, rollers or races, or of any undue degree of hardness or softness would cause the load to be unequally divided on the tiny supporting units, causing their breakdown.

Another point which is still productive of no small amount of difference in the practices adopted by the various makers is the cooling problem. There is no longer the old question as to the relative supremacy of the water and air cooling methods, for those makers who have continued to retain the air-cooling system are by this time firmly fixed in their adherence to it. With rare exceptions, it will be observed, the motors of the larger cars are cooled by water, while the smaller machines, and notably in the case of the motor buggy type of vehicle, are more apt to be air cooled. Indeed in the latter type air cooling is almost exclusively encountered.

But if there is less rivalry between the types of water and air cooled motor than formerly, the different methods by which the two solutions of the cooling problem may be approached left sufficient divergency to afford no small amount of variety in the field. This in the simpler air-cooled type, the method of circulating the air around the cylinders, the method of forming and arranging the radiating flanges even the location of the flanges of the cylinders, will be found to vary considerably, if closely observed. In the case of the water cooled motor, on the other hand, practical differences which are of considerable im-

SPECIFICATIONS OF PLEASURE VEHICLES STAGED AT THE PALACE SHOW

Price.	Name of Car.	Style.	Model.	No. Pas-sengers.	H.P.	Cyls. No.	Arrange-ment.	Bore.	Stroke.	Ignition Source.	Clutch.	Change Gear.	No. speeds.	Drive.	Wheel base.	Tire sizes— Front.	Rear.	Weight.
$450	Kiblinger	Runabout	H	2	13½	2	Horizontal	4½	3¾	Dry cells	Disc	Planetary	2	Chain	69	—x1¼	—x1¼	1,100
500	Kiblinger	Runabout	L	3	13½	2	Horizontal	4½	3¾	Dry cells	Disc	Planetary	2	Chain	78½	—x1¼	—x1¼	.....
500	Maxwell	Runabout	A	2	10	2	Horizontal	4	4	Dry cells	Disc	Planetary	2	Shaft	82	28x3	28x3	1,100
500	Reo	Runabout	G	2	10	2	Horizontal	4¼	4	Dry cells	Disc	Planetary	2	Chain	78	28x3	28x3	.....
550	Brush	Runabout	B	2	7	1	Vertical	4	6	Dry cells	Disc	Planetary	2	Chain	74	32x2	32x2	900
550	Holsman	Runabout	4	2	12½	2	Horizontal	4	4	Dry cells	Special	Special	2	Cable	65	—x1½	—x1½	815
550	Kiblinger	Runabout	N	3	16	2	Horizontal	4¼	4½	Dry cells	Disc	Planetary	2	Chain	78½	—x1½	—x1½	.....
600	Kiblinger	Runabout	NN	3	16	2	Horizontal	4¼	4½	Dry cells	Disc	Planetary	2	Chain	89	—x1½	—x1½	.....
600	Kiblinger	Surrey	GG	4	16	2	Horizontal	4¼	4½	Dry cells	Disc	Planetary	2	Chain	78	—x1½	—x1½	.....
650	Holsman	Runabout	5	2	12½	2	Horizontal	4	4	Battery	Special	Special	2	Cable	65	—x1½	—x1½	845
675	Kiblinger	Surrey	P	6	16	2	Horizontal	4¼	4½	Dry cells	Disc	Planetary	2	Chain	100	—x1½	—x1½	.....
750	Holsman	Stanhope	10	2	12½	2	Horizontal	4	4	Battery	Special	Special	2	Cable	75	—x1½	—x1½	940
750	Kiblinger	Runabout	M	3	27	2	Vertical	4½	3¾	Battery	Disc	Planetary	2	Chain	100	—x1½	—x1½	.....
800	Holsman	Surrey	11	4	12½	2	Horizontal	4	4	Battery	Special	Special	2	Cable	75	—x1½	—x1½	1,055
800	Lambert	Runabout	A-1	3	20	2	Horizontal	5	4	Dry cells	.....	Friction	2	Chain	95	30x3	30x3	1,350
825	Maxwell	Runabout	LD	2	14	2	Horizontal	4½	4	Mag. & Bat.	Disc	Planetary	2	Chain	84	30x3	30x3	1,150
850	Ford	Touring	T	5	20	4	Vertical	3¾	4	Magneto	Disc	Planetary	2	Shaft	100	30x3½	30x3½	1,200
850	Jackson	Runabout	F	2	15-18	4	Horizontal	5	4	Battery	Disc	Planetary	2	Shaft	96	30x3½	30x3½	1,600
950	Ford	Taxicab	T	4	20	4	Vertical	3¾	4	Magneto	Disc	Planetary	2	Shaft	100	30x3	30x3	1,350
950	Jackson	Touring	K	4	16-18	2	Horizontal	5	4	Battery	Disc	Planetary	2	Shaft	96	30x3½	30x3½	1,600
1,000	Cartercar	Roadster	H	3	18-20	2	Horizontal	4¼	4	Dry cells	.....	Friction	2	Chain	94	32x3	32x3	.....
1,000	Ford	Town Car	T	5	20	4	Vertical	3¾	4	Magneto	Disc	Planetary	2	Shaft	100	30x3	30x3½	1,400
1,000	Holsman	Coupe	H-15	2	26	4	Horizontal	4	4	Battery	Special	Special	3	Chain	80	—x1½	—x1½	.....
1,000	Mitchell	Runabout	I	2	20	4	Vertical	4	4	Battery	Cone	Special	3	Shaft	92	32x3½	32x3½	1,700
1,000	Reo	Touring	D	5	20-22	4	Vertical	4¼	6	Dry cells	Disc	Planetary	2	Chain	96	32x3½	32x3½	.....
1,200	Oakland	Runabout	20-A	3	20	2	Vertical	4½	5	Mag. & Bat.	Disc	Planetary	2	Shaft	100	32x3½	32x3½	1,700
1,250	Atlas	Runabout	R	2	22	2	(2 cycle) Vert.	4½	4½	Dry cells	Band	Sliding gear	3	Shaft	90	30x3½	30x3½	1,500
1,250	Jackson	Touring	C	5	20-24	2	Horizontal	5¼	5	Accumulator	Disc	Planetary	2	Chain	104	32x3½	32x3½	2,000
1,250	Lambert	Roadster	27	4	28	4	Vertical	4	4	Accumulator	.....	Friction	3	Belt	110½	32x3½	32x3½	1,500
1,250	Lambert	Touring	30	4	28	4	Vertical	4	4	Accumulator	.....	Friction	3	Belt	110½	32x3½	32x3½	1,600
1,250	Oakland	Touring	20-B & 20-C	4	20	4	Vertical	4½	5	Mag. & Bat.	Disc	Planetary	2	Shaft	100	32x3½	32x3½	1,740
1,250	Overland	Roadster	30	3	30	4	Vertical	4	4½	Mag. & Bat.	Metal cone	Planetary	2	Shaft	105	32x3½	32x3½	1,700
1,250	Regal	Touring	A	5	30	4	Vertical	4	4½	Mag. & Bat.	Cone	Sliding gear	3	Shaft	105	32x3½	32x3½	1,900
1,300	Overland	Roadster	30	4	30	4	Vertical	4	4½	Mag. & Bat.	Metal cone	Planetary	2	Shaft	105	32x3½	32x3½	1,735
1,350	Cartercar	Touring	K	4	22-24	2	Horizontal	5¼	4½	Dry cells	.....	Friction	2	Chain	103	32x2½	32x2½	.....
1,350	Maxwell	Runabout	Doctor	2	20	2	Horizontal	5	5	Mag. & Bat.	Disc	Sliding gear	3	Shaft	96	30x3½	30x3½	1,700
1,450	Maxwell	Touring	HD	5	20	2	Horizontal	5	5	Mag. & Bat.	Disc	Sliding gear	3	Shaft	96	30x3½	30x3½	1,700
1,500	Mitchell	Touring	K	5	28-30	4	Vertical	4½	4½	Mag.& Dry cells.	Cone	Selective	3	Shaft	105	32x4	32x4	2,300
1,500	Moline	Touring	M	5	24	4	Vertical	3¾	4½	Accumulator	Cone	Selective	3	Shaft	106	34x3½	34x3½	2,000
1,500	Overland	Roadster	32	4	30	4	Vertical	4	4½	Bat. & Mag.	Cone	Selective	3	Shaft	110	34x3½	34x3½	2,000
1,500	Pullman	Runabout	L	3	20	4	Vertical	3¾	3¾	Accumulator	Disc	Selective	3	Shaft	102	32x3½	32x3½	1,750
1,500	Stoddard-Dayton	Roadster	9-H	4	25	4	Vertical	3⅞	4½	Bat. & Mag.	Disc	Selective	3	Shaft	110	32x4	32x4	2,400
1,600	Jackson	Touring	H	4	30	4	Vertical	4½	4½	Bat. & Mag.	Disc	Sliding gear	3	Shaft	110	32x4	32x4	2,300
1,600	Oakland	Run. or Tour.	40	5	40	4	Vertical	4½	5	Bat. & Mag.	Disc	Sliding gear	3	Shaft	112	34x4	34x4	2,100
1,750	Lambert	Touring	19	5	35-40	4	Vertical	4½	5	Bat. & Mag.	.....	Friction	3	Belt	105	32x3½	32x3½	1,900
1,750	Maxwell	Touring	DA	5	24-30	4	Vertical	4½	4½	Bat. & Mag.	Disc	Sliding gear	3	Shaft	104	32x4	32x4	2,100
1,800	Atlas	Run. or Tour.	F	4	33	3	(2 cycle) Vert.	4½	4½	Dry cells	Band	Selective	3	Shaft	110	30x4	30x4	2,400
1,800	Midland	Toy Tonneau	E	4	25-30	4	Vertical	4¼	5	Battery	Disc	Selective	3	Shaft	110	34x3½	34x3½	2,000
1,850	Mora	"Racy type"	"Light 4"	4	24-28	4	Vertical	4	5½	Battery	Inv. cone	Selective	3	Shaft	110	32x4	32x4	2,000
2,000	Jackson	Tour or Roadst.	E	5	35	4	Vertical	4¼	4¾	Bat. & Mag.	Disc	Sliding gear	3	Shaft	111	34x4	34x4	2,700
2,000	Lambert	Touring	B-2	7	35-40	4	Vertical	4½	5	Bat. & Mag.	.....	Friction	3	Chain	106	32x4	32x4	2,700
2,000	Mitchell	Touring	L	7	35-40	4	Vertical	4½	5	Mag.& Dry cells.	Cone	Selective	3	Shaft	122	34x4	34x4	2,700
2,000	Overland	Run. or Tour.	34	5	35	4	Vertical	3½	4½	Bat. & Mag.	Cone	Selective	3	Shaft	116	34x3½	34x3½	.....
2,000	Pennsylvania	Runabout	D-25	2	28	6	Vertical	4½	4½	Magneto	Cone	Selective	3	Shaft	110	32x4	32x4	2,200
2,000	Pullman	Touring	K	5	30	4	Vertical	4½	4½	Bat. & Mag.	Cone	Selective	3	Shaft	106	34x3½	34x3½	2,250
2,000	Stoddard Dayton	Touring	9-A	5	35	4	Vertical	4	5	Bat. & Mar.	Cone	Selective	3	Shaft	105	34x3½	34x3½	2,200
2,000	Stoddard Dayton	Roadster	9-C	2-4	35	4	Vertical	4	5	.....	.....	Selective	3	Shaft	110½	34x3½	34x3½	2,000
2,100	Pennsylvania	Touring	D-25	5	28	4	Vertical	4¼	4½	Magneto	Cone	Selective	3	Shaft	110	32x4	32x4	2,400
2,250	Midland	Tour or Roadst.	G	5	30-35	4	Vertical	4½	5¼	Mag.& Dry cells.	Disc	Selective	3	Shaft	112	34x4	34x4	2,650
2,400	Marmon	Tour or Roadst.	32	2-5	32-40	4	Vertical	4½	¼	Bat. & Mag.	Expanding	Selective	3	Shaft	112	34x3½	34x3½	1,975

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SPECIFICATIONS OF COMMERCIAL VEHICLES STAGED AT THE PALACE SHOW

Price.	Name of Car.	Style.	Model.	Carrying Capacity. lbs.	H.P.	No. Cyls.	Arrangement.	Bore.	Stroke.	Ignition Source.	Clutch.	Change Gear.	No. Speeds.	Drive.	Wheel base.	Tire sizes. Front.	Tire sizes. Rear.	Weight.
$475	Kiblinger	Mail wagon	R	.....	13.6	2	Horizontal	4½	3¾	Dry cells	Disc	Planetary	2	Chain	69	—x1¼	—x1¼	.....
600	Brush	Delivery	Deliv.	500	12½	2	Vertical	4	4	Dry cells	Disc	Planetary	2	Chain	74	32x2	32x2	950
700	Holsman	Light deliv.	12	.....	7	1	Horizontal	4	4	Dry cells	Special	Special	2	Cable	75	—x1¼	—x1¼	1,060
825	Kiblinger	Delivery	150	.....	16	2	Horizontal	4¼	4¼	Dry cells	Disc	Planetary	2	Chain	77	34x—	34x—	.....
1,400	Maxwell	Delivery	U-J	2,000	20	2	Horizontal	5	5	Bat. & Mag.	Disc	Sliding gear	3	Sh & Ch	90	30x3½	30x4	1,700
2,300 up	Grabowsky	Various	....	4,000 up	25-35	4	Vertical	5½	5	Bat. & Mag.	Cone	Planetary	2	Sh & Ch	102	—x3½	—x3½	2,900
3,750 up	Manhattan	Various	....	.....	50	2	Horizontal	5½	5½	Magneto	Cone	Individual	3	Chain	120-168	—x—	—x—	2,900
.....	Rapid	Various	....	.....	24-30	2	Horizontal	5¼	5	Dry cells	Disc	Planetary	2	Chain	100-111	—x3½	—x3½	.....
.....	Rapid	Various	....	.....	60	4	Vertical	5½	6½	Bat. & Mag.	Disc	Selective	2	Sh & Ch	160	34x6	34x6	7,000
2,500	Acme	Runabout	19	2	25	4	Vertical	4½	5	Bat. & Mag.	Cone	Selective	3	Shaft	96	34x4	34x4	2,500
2,500	Atlas	Town or Taxi.	T	6	22	2	(2 cycle) Vert.	4½	4½	Dry cells	Band	Sliding gear	3	Shaft	100	30x4	30x4	2,500
2,500	Moline	Tour or Roadst.	K	5	35	4	Vertical	4 7-16	5¾	Bat. & Mag.	Cone	Selective	3	Shaft	116	36x3½	36x4	2,200
2,500	Pullman	Taxicab	Taxicab	4	20	4	Vertical	3¾	5¾	Magneto	Cone	Selective	3	Shaft	102	30x4	30x4	3,000
2,500	Stoddard-Dayton	Tour or Roadst.	9-F & K	2-7	45	4	Vertical	4¼	5	Bat. & Mag.	Cone	Selective	3	Shaft	120	34x4	34x4	2,650
2,500	Premier	Tour or Roadst.	30	2-5	30-35	4	Vertical	4¼	4¼	Bat. & Mag.	Disc	Selective	3	Shaft	120	34x4	34x4	2,600
2,750	National	Touring	9-35	5	35	4	Vertical	4¼	4¼	Bat. & Mag.	Cone	Selective	3	Shaft	115	34x4	34x4	2,700
2,750	Mora	"Racy type"	"Large 4"	2-5	60	4	Vertical	6	4	Bat. & Mag.	Inv. cone	Selective	3	Shaft	118	34x4	34x4	2,250
2,850	Austin	Roadster	45-R	2-3	45-50	6	Vertical	4½	4½	Bat. & Mag.	Disc	Selective	3	Shaft	122	36x3½	36x3½	1,900
2,750	Pullman	Runabout	6-30	3	30	6	Vertical	3¾	3¾	Bat. & Mag.	Cone	Selective	3	Shaft	104	34x3½	34x3½	
3,000	Austin	Tourin~	45-T	5	45-50	6	Vertical	4½	4½	Bat. & Mag.	Disc	Selective	3	Shaft	122	36x3½	36x3½	2,350
3,000	Moon	Tour. or Roadst.	C	5	30-35	4	Vertical	4½	4½	Magneto	Disc	Selective	4	Shaft	112	34x3½	34x4½	2,700
3,000	Pennsylvania	Touring	C-50	5	36	4	Vertical	4¾	5¼	Magneto	Cone	Selective	3	Shaft	114	34x4	34x4½	2,800
3,000	Pullman	Runabout	4-40	3	40	4	Vertical	5	5¼	Mag. & Dry cells	Cone	Selective	3	Shaft	106	36x4	36x4	2,300
3,500	Acme	Touring	26	5	30	4	Vertical	4½	5	Bat. & Mag.	Cone	Select. or Prog	3	Shaft	102	34x4	34x4	3,100
3,500	Gaeth	Touring	23	4-7	38	4	Vertical	4⅞	5¼	Bat. & Mag.	Band	Progressive	3	Shaft	114	36x3½	36x4½	2,900
3,500	Marmon	Roadster	45	2-4	45-50	4	Vertical	5	5	Bat. & Mag.	Disc	Selective	3	Shaft	114	34x4½	34x4½	3,250
3,500	Moon	Touring	D	7	30-35	4	Vertical	4½	4½	Magneto	Disc	Selective	3	Shaft	121	36x4½	36x4½	3,100
3,500	Mora	Racytype	"Light 6"	3	42-50	6	Vertical	4	4½	Bat. & Mag.	Inv. Cone	Selective	3	Shaft	105	36x3½	36x3½	2,250
3,500	Premier	Tour. or Roadst.	45	2-7	45-55	6	Vertical	4½	4½	Bat. & Mag.	Disc	Selective	3	Shaft	124	34x4½	34x4½	3,150
3,500	Pullman	Touring	M	7	40	6	Vertical	5	5½	Bat. & Mag.	Cone	Selective	4	Shaft	119	36x4½	36x4½	3,000
3,600	Mora	Touring	"Light 6"	5	42-50	6	Vertical	4	5½	Bat. & Mag.	Inv. Cone	Selective	3	Shaft	115	36x4	36x4	2,500
3,700	National	Touring	9-40	7	40	4	Vertical	5	5	Bat. & Mag.	Cone	Selective	3	Shaft	125	36x4½	36x4½	3,000
3,750	Acme	Touring	27	7	35	4	Vertical	5	5	Bat. & Mag.	Cone	Selective	4	Chain	115½	36x4	36x4½	3,200
3,750	American	Roadster	50-R	3	50	4	Vertical	5	5½	Bat. & Mag.	Cone	Sliding gear	4	Shaft	124	36x4	36x4	2,800
3,750	Austin	Roadster	50	3	50-60	4	Vertical	5½	5½	Bat. & Mag.	Disc	Selective	3	Shaft	124	36x4	36x4	3,200
3,750	Marmon	Touring	50	4-7	50-60	4	Vertical	5⅝	5	Bat. & Mag.	Disc	Selective	3	Shaft	118	36x5	36x5	3,500
3,750	Mora	Roadster	"Light 6"	4	42-50	6	Vertical	4	5½	Bat. & Mag.	Inv. Cone	Selective	3	Shaft	115	36x4	36x4	2,400
3,800	Pennsylvania	Touring	E-50	7	36	4	Vertical	4¾	5¾	Magneto	Cone	Selective	3	Shaft	122	36x4	36x4½	3,300
3,850	Austin	Limousine	45-L	5	45-50	6	Vertical	4½	4½	Bat. & Mag.	Disc	Selective	3	Shaft	122	36x3½	36x4	2,550
4,000	Amer. Simplex	Tour. or Roadst.	D-50	2-7	50	4	Vertical	5	5	Bat. & Mag.	Disc	Selective	3	Shaft	110	36x4	36x4½	3,500
4,000	American	Tour. or Roadst.	...	7	50	4	Vertical	5¼	5½	Bat. & Mag.	Cone	Selective	4	Shaft	124	36x4	36x5	3,000
4,000	Austin	Touring	50-T	7	50-60	4	Vertical	5½	5½	Bat. & Mag.	Disc	Selective	4	Shaft	124	36x4½	36x4½	3,500
4,200	National	Touring	9-50	7	50	6	Vertical	4½	4¾	Bat. & Mag.	Cone	Selective	3	Shaft	130	36x4½	36x4½	3,100
4,500	Acme	Touring	20	7	48	6	Vertical	4½	5	Bat. & Mag.	Cone	Selective	4	Chain	126	36x4	36x4½	3,500
4,500	Gaeth	Limousine	20	7	38	4	Vertical	4⅞	5¼	Bat. & Mag.	Band	Progressive	3	Shaft	114	36x4	36x4½	3,300
4,500	Welch	Tour. or Run.	4	2-7	50	4	Vertical	4½	5½	Bat. & Mag.	Individual	Selective	3	Shaft	125	36x4½	36x4½	3,300
4,750	Austin	Roadster	60-R	3	60-90	6	Vertical	5½	5½	Bat. & Mag.	Disc	Selective	4	Shaft	134	36x4	36x4	3,500
5,000	Austin	Limousine	50-L	7	50-60	4	Vertical	5½	5½	Bat. & Mag.	Disc	Selective	4	Shaft	124	36x4½	36x4½	3,700
5,000	De Luxe	Tour. or Roadst.	C & D	5-7	50-60	4	Vertical	5	5¼	Bat. & Mag.	Cone	Selective	4	Shaft	121	36x5	36x5	3,750
5,000	National	Touring	9-60	7	60	6	Vertical	5	5	Bat. & Mag.	Cone	Selective	3	Shaft	137	36x5	36x5	3,850
5,500	Chadwick	Tour. or Roadst.	....	7	60	6	Vertical	5	6	Bat. & Mag.	Expand.	Semi-select.	4	Chain	130	36x4	36x5	3,500
5,500	Welch	Tour. or Lim.	4	7	50	4	Vertical	4½	5	Bat. & Mag.	Individual	Selective	3	Chain	125	36x4½	36x4½	3,800
6,000	Acme	Touring	25	7	60	6	Vertical	5	5	Bat. & Mag.	Cone	Selective	4	Chain	126	36x4½	36x4½	3,500
6,000	Welch	Tour. or Run.	6-L & M	7	75	6	Vertical	4½	5	Bat. & Mag.	Individual	Selective	3	Shaft	138	36x4½	36x4½	4,000
6,500	Chadwick	Runabout	Runabout	2	60	6	Vertical	5	6	Bat. & Mag.	Expand.	Semi-select.	4	Chain	112	36x4	36x4½	3,000
7,000	Welch	Land. or Lim.	6-D, H, I	7	75	6	Vertical	4½	5	Bat. & Mag.	Individual	Selective	3	Shaft	138	36x5	36x5	4,400

portance exist in the various ways in which the piping connections are arranged, the size, shape and construction of radiators and water water jackets, and finally the method of circulating the water.

Most of the makers agree in the use of the pump in one form or another, though there is still considerable difference of opinion as to what form of pump affords the most satisfactory service. This, with differences in the method of actuating it, differences in its location and differences in the way in which it is connected into the system afford ample opportunity for criticism and investigation.

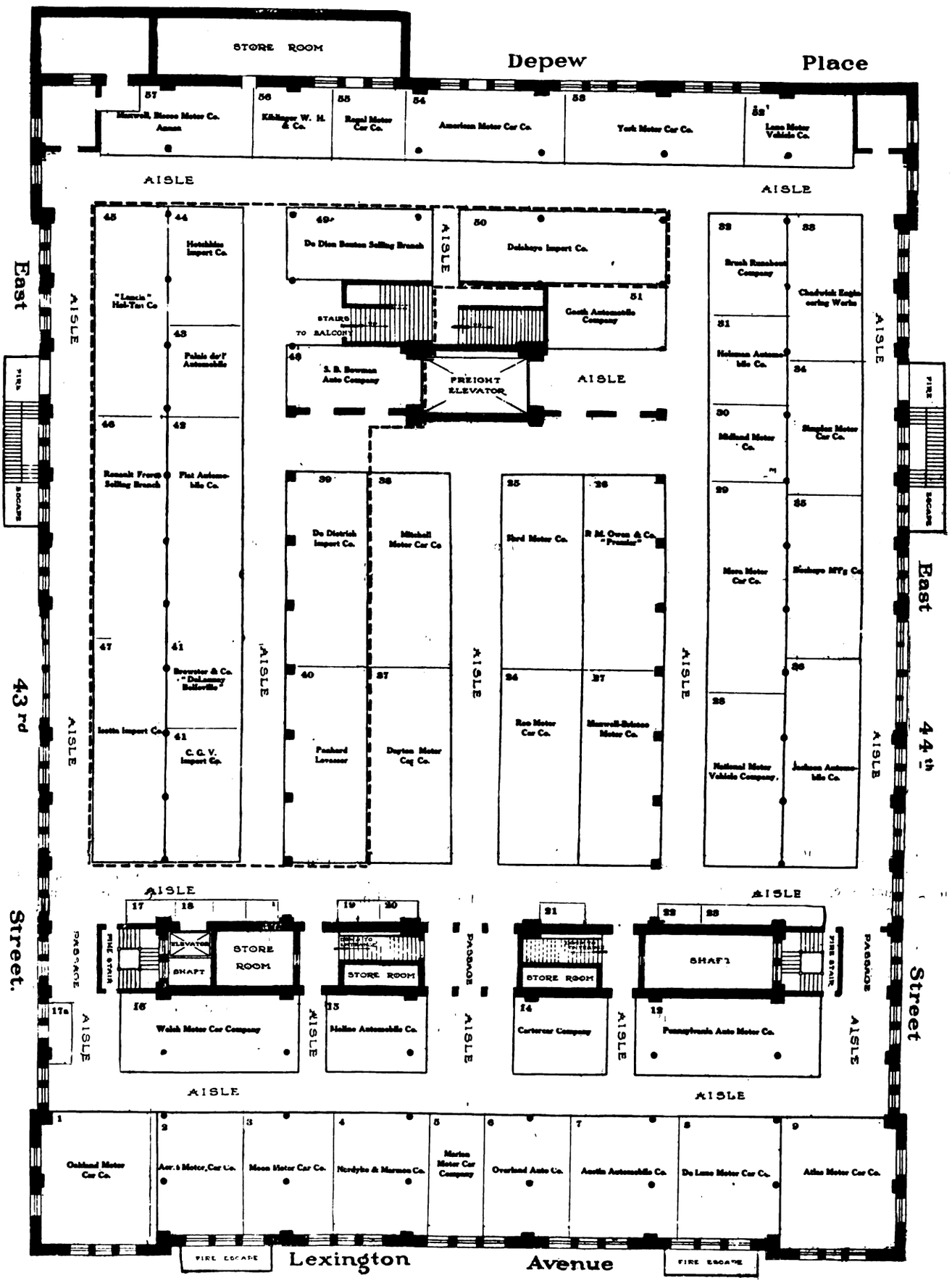
Although but little has been heard of the use of the thermo-syphon or gravity system of circulation, it is used to an extent which is probably much greater than commonly is imagined. At the show it will be found that the makers of the Brush, the Jackson, Lambert, Maxwell, Moline and several other cars use this natural circulation in some or all of their models. The advantage of thermo-syphon circulation is that the pump is omitted, the slight power required to drive it is saved, its elements of noise and trouble are eliminated and the first cost of the vehicle as well as its probable maintenance expense may be lower.

Uniformity in the production of cars of the medium priced type, has been mentioned as one of the features of the show, at the same time the variety of machines exhibited is so broad as to leave nothing to be desired in the way of vehicles at prices either very high or very low. As a matter of fact, from the $6,000 Acme, and the $5,000 types of the National and American cars, the descent to the $450 and $500 grades is remarkably uniform and it would appear that, even discounting all the mechanical features of the machines, the prospective purchaser desiring to secure a car at a certain fixed sum, would have little difficulty in finding satisfaction.

As a means of completing the study of the show, the serious-minded visitor cannot fail to take note of the price question, observing how the respective makers, animated by the desire to impress upon the purchaser the high rate of concrete return he is getting for the money spent on his car, are vieing with each other in the use of better equipments, better materials, better design, and always to make good the assertion that theirs is the most car for the least money. In many cases the result is truly remarkable from the bargain-counter point of view alone. Such cars as the little Maxwell, and the $850 Ford, or the $1,200 to $1,500 class, including such machines as the Cartercar, Oakland, Mitchell, Jackson, Lambert, Overland, and the "Doctor" Maxwell, all of them either just below or a great deal below the range of the so-called medium priced product, furnish ample opportunity for close inspection and profitable investigation, both as cars, and as sterling examples of highly economic mechanical production.

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PALACE SHOW—PLAN OF MAIN FLOOR



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Where Accessories, Tires and Parts Prevail.

From the amiable amblers who stand with wide-eyed interest when things are explained to them and are so very, very grateful at being shown even when it is certain that they understood no part of it, to the keen and eager technical inquirer, every visitor at a big automobile show finds the portions devoted to parts and accessories well worth while. The Palace show is particularly rich in the variety and number of its accessory exhibits, which embrace everything from demonstrations of how to keep coffee hot in a bottle forever to Graeco-Roman arguments on the ion valences of tertiary inductions. What is more, everybody is given a chance each night to win $5 and possibly $20, all that is required of the successful candidate for the cash being that he shall beat everybody else in a demountable rim changing contest.

And those who do not want to struggle against a stop watch for the $5 can have the fun of seeing a lot of other people make a play for the money. Tiring of the more frivolous side, it is possible to go in for pre-digested technical information. If the visitor never could understand how a thermo-syphon cooling system works, his case is provided for by a complete system of the sort in full operation and having glass tubes at different points, through which one may look and see just what happens inside and how the water insists on going downward when it cools. Similarly if the tangle of thick and thin wires on an automobile motor, connected up to various boxes, revolving contraptions and miniature steel dog houses, presents no clear and reasonable purpose to the mind beyond a hazy conviction that somehow it all helps the engine run, it is possible to take a 15-minute lesson in ignition and electricity that will elucidate the mystery so completely as to make all motor wiring appear to the graduate's eye as simple as a bone collar button.

In fact the whole spirit of the parts and accessories exhibits is one of welcome for the residents of the figurative Missouri, and if the investigator be technically equipped he has the rare pleasure of meeting demonstrators who are qualified to give him satisfactory reasons and answers to his inquiries, an experience he is far less likely to encounter when dealing with those whose duty it is to explain the merits of the complete cars.

Next to tires, ignition apparatus is one of the dominating elements in the accessories exhibit, although under a wider generalization the group of parts and materials offered for the consideration of designers and builders is perhaps the largest of all. The lesser classifications include speed indicators, wind shields, shock absorbers, and signals, and an extensive list of attachments and specialties contributing to the luxury of motoring.

Among the more prominent tire company exhibits, those of the Diamond Rubber Co., Hartford Rubber Works, Continental, Morgan & Wright, Michelin, Firestone, G & J, Empire and Goodyear, are naturally conspicuous, and are centers of interest as to the 1909 offerings which they disclose. In the Diamond space the newest thing is the improved and simplified Diamond demountable rim, which is supplied in both a touring car and a racing style. In principle it adheres to the usual type, but presents differences in detail which afford advantages. The Diamond "Grip" tires, with anti-skid treads, are the perfected products of the company's new construction. Great stress is laid on the exceedingly tough treads which characterize the Diamond line of tires for 1909.

It is at the booth of the Continental Caoutchouc Co., of New York, that the daily $5 prizes are offered to any automobile owner, prospective owner or chauffeur making the best time in changing the Continental demountable rim. At the end of the week a cash prize of $20 will be given to the person making the best time during the entire period of the show. The records are to be carefully tabulated and the books open for examination at all times. The Continental tires on exhibition include the round tread and AC flat tread, guaranteed for 3,500 miles; the flat tread type course, guaranteed for 4,500 miles; and the non-skid, steel studded type, having a 2,000 mile guarantee.

The new "Standard Universal Quick Detachable" rim, which has not been seen by show visitors before, is on view at the Hartford Rubber Works Co.'s space. In addition to the regular sizes, Hartford tires are shown in the new 31x4 and 33x4 sizes, for application to 30x3½ and 32x3½ rims, respectively. Morgan & Wright also stage the new "Standard Universal" rim. In the tires a new, heavy flat tread is featured, with claims for increased traction and puncture protection. A special tire for electric pleasure vehicles has been added to the line, its soft absorption of road irregularities being calculated to lessen current consumption and increase the service efficiency.

The Goodyear detachable and clincher tires and the Goodyear quick acting rim form the backbone of the exhibit of the Goodyear Tire & Rubber Co. The Goodyear air bottles, which made their appearance during the summer, but for which the Palace exhibition is a show debut, are represented in four sizes. The "bottles" are steel tanks filled with compressed air so that they may be used in filling tires. Each bottle is equipped with a pressure gauge by the readings of which the filling of the tire to the proper pressure may be controlled. The sizes run from the small motorcycle style to a big garage bottle.

Leather covered steel tires have been added to the Empire Automobile Tire Co.'s line, while the Republic Rubber Co. has produced a non-skid tire having rubber projections. At the Ajax stand a new non-skid is shown and members of the trade are given a hint of a valuable Ajax souvenir to come. In the class "unusual," is a cushion tire invented by Irving Snell, of Little Falls, N. Y., the tread of which is like a coarse herringbone gear.

Where different size wheels are used on a car for the front and back, a combination Stepney spare motor wheel that will fit either the front or back rims has been devised and is to be seen in the display of the Spare Motor Wheel of America, Ltd. The regular Stepney rims are revealed in various sizes and colors, and demonstrations are given as to how they may be applied to either clincher or quick detachable rims. Each Stepney carries a fully inflated tire which is ready for service immediately the rim is applied.

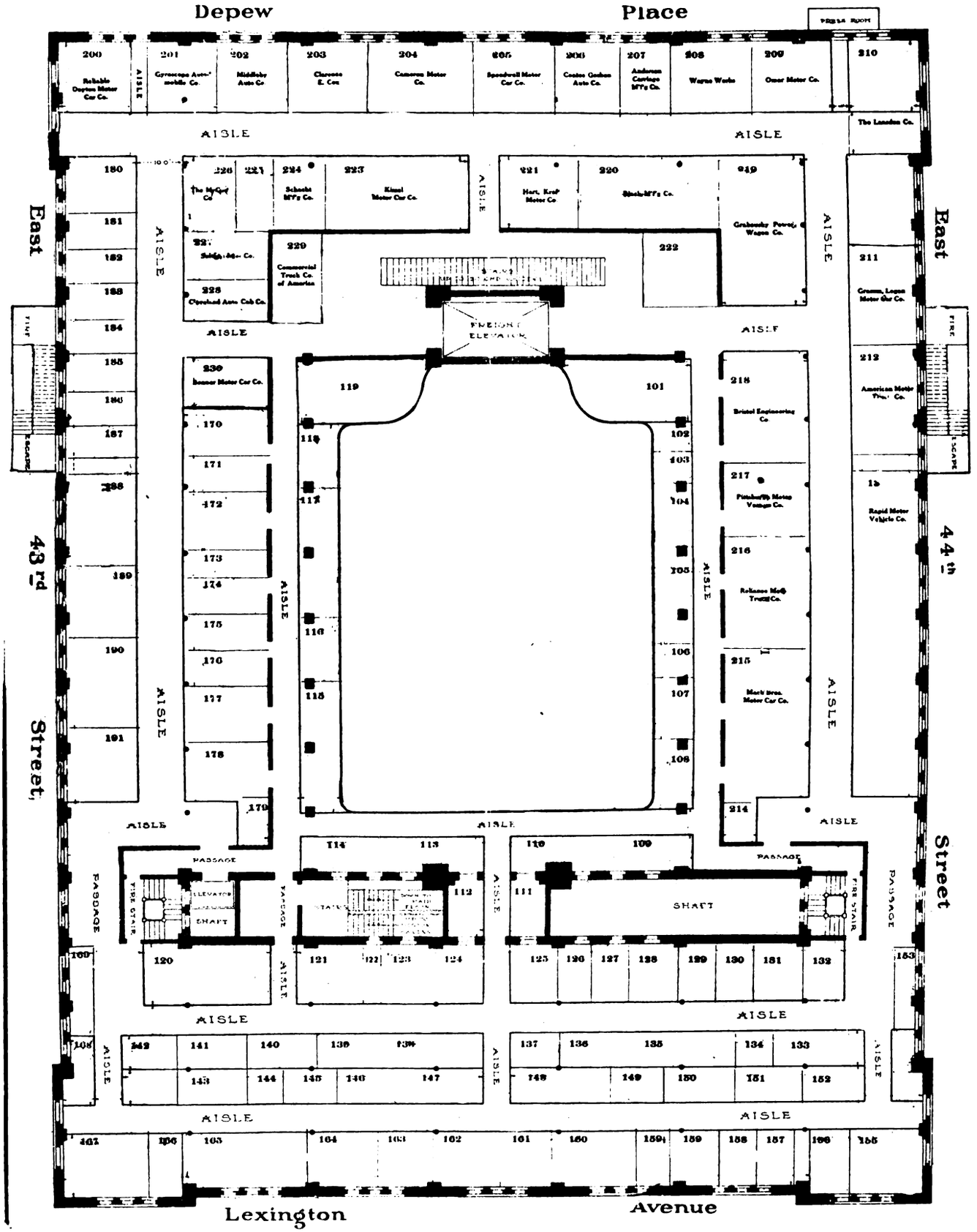
With the same interest that they watch magicians pound up gold rings and burn ladies' handkerchiefs, the crowds still respond to the fascination of seeing tacks and nails driven into Dow tubes, later to be withdrawn without the tubes becoming deflated. The stand of the Dow Tire Co. is destined to be a crowd center during the week. Weed grips, shown by the Weed Chain Tire Grip Co., present no external difference from last year, but the cross chains are now subject to a special treatment which affords two or three times the mileage that was formerly possible.

Magnetos are represented as never before, with such products as the Splitdorf, Remy, Bosch, U. & H., Volta and others. Wheeler & Schebler make their bow as magneto manufacturers, and the Pittsfield Spark Coil Co. is in the field, as is the Hess-Bright Co. The Connecticut Telephone & Electric Co., of Meriden, Conn., has prepared its usual excellent showing of switches, meters, indicators, terminals, coils, timers and distributors, with 1909 improvements. The distributer is decidedly new. The Witherbee Igniter Co., of New York, besides having a gasolene engine running day and night, equipped with one of its Volta magnetos, and all of the "Wico" products that can be applied to it, will show a Witherbee battery furnishing power for changeable electric signs.

A "battery saving" timer, in which the arc of dwell can be reduced from the usual 45 degrees to 15 degrees, is a novelty of the Autocoil Co., of Jersey City, the company also offering its coils. To explain the operation of the ignition system of a motor car the National Carbon Co., of Cleveland, has built a special and elaborate piece of

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PALACE SHOW—FIRST GALLERY



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apparatus, which analyzes the ignition system and shows the action of the spark and proves that the relation of current consumption to results varies considerably according to circumstances. It is said to be the only apparatus of its kind in existence.

"Patent leather lamps" are not such a startling innovation as they sound, because the racks in the display space of the Badger Brass Mfg. Co., of Kenosha, Wis., show them to be very substantial brass. The "patent leather" part of it refers to a black metallic, lacquer-like lustre or finish resembling that material in appearance. The Solar lamps are made up in a bewildering number of combinations of the "patent leather," polished brass and nickel exterior surfaces. Some of the lamps on exhibition will puzzle the uninformed to account for the movable levers they bear. It may be parts of a neat mechanism for eclipsing or reducing the amount of light the lamps project. On city streets it is rarely necessary to use the full strength of the more powerful "Solar" light projectors, and the eclipsing device reduces the light so that traffic coming in the opposite direction is not annoyed by the blinding glare. The array of Solars entends from the big lamps down to oil side and tail lamps, the line also including electric lamps and acetylene generators.

Entirely different in appearance irom previous models, the Warner Auto-Meter, made by the Warner Instrument Co., of Beloit, Wis., blossoms out for 1909 in much handsomer form. The exhibit discloses the fact that both the odometer and the speed indicating mechanism are contained in the one case, the latter being circular in form and having apertures in its face through which the speed and mileage readings appear. No change has been made in the vital parts of the speed indicator, the successful magnetic principle being retained. The odometer mechanism, however, is now of Warner manufacture, and has a trip register reading to 1,000 miles and a season register reading to 100,000 miles. Above the dial, but concealed inside of the bevel glass cover, is a miniature electric light which can illuminate the dial brilliantly on the darkest night.

A double tone whistle has been added to the Gabriel family of horns and signals. While resembling the three toned exhaust horns it is intended to be more shrill. The space of the Gabriel Horn Mfg. Co., of Cleveland, also contains demonstration apparatus for the Gabriel shock absorbers. The latter class of devices have suffered diminution rather than increase so far as the number of makers exhibiting is concerned. A new Richmond in the field, however, is Ernest Flentje, of Cambridge, Mass., with a glycerine recoil shock preventer.

The Jones Speedometer exhibit features the new models of low price. Three instruments, known as models 27, 28 and 29, and priced at $25, $40 and $50, are among the leaders. The complete Jones line embraces 20 different instruments, giving the purchaser the opportunity of wide selection, particularly as the prices range from as low as $15 up to $100.

"Oil and water won't mix," and the fact is taken advantage of in the Snell hydraulic system of handling oil and gasolene as exemplified in the apparatus of the Hydraulic Ooil Storage Co. The system also depends on the difference in specific gravity of water and oil. The tanks are always full of liquid, for when oil is drawn off, more water enters underneath the remainder. A model of the system being installed for the new York Taxicab Co., is shown, the absence of gasolene valves and other intricacies being emphasized.

Curiosity as to what is inside the new "multipolar induction type" speed indicator which the Stewart & Clark Mfg. Co., of Chicago, has added to its line this year may be satisfied at the company's stand by getting in the good graces of the attendant demonstrator. From the descriptive adjectives it is evident that the instrument differs radically from the centrifugal types which make up the balance of the Stewart line. A big exhibition case showing all the models in operation is the main feature of the exhibit.

Tire trunks, which sprang into favor during the past season as handy space savers with the virtue of easy access, are given a new construction for 1909 In the specimens which will be displayed during the week by the Nathan Novelty Mfg. Co. Instead of the paper and duck which have been used in this type, the styles shown are made of hard wood filled with a special waterproofing. An adjustable lock, which will well as the trunk, presents an improvement.

For the manufacturer of cars who is harnessed by production problems, great temptations to cast off a large part of his burdens on other shoulders exist in a trip around the Palace balconies. The William Cramp & Sons Ship & Engine Building Co., of Philadelphia, has rigged an enticing display of all kinds of automobile parts for which the company has supplied the metal, made the complete castings or delivered the finished product. The numerous ways in which Parsons' manganese bronze and Parson's white brass are forcefully indicated by the exhibit. Isaac G. Johnson & Co., of New York City, show a new metal known as Monel and containing from 60 to 70 per cent. nickel, which registers a tensile strength of 85,000 pounds per square inch, and which has remarkable non-corrosion qualities. It can be exposed to the atmosphere indefinitely without rusting. An unique exhibit of die castings, with specimens of pieces cast complete with finished keyways, slots, lugs, threads and clearance holes, is shown by the Wetherill Finished Castings Co., of Philadelphia. The work is done in either aluminum or Parson's white brass.

Front and rear axles complete with hubs and bearings are offered in such attractive forms and with such sureties of quality that resistance may be imagined to be difficult no matter how well the manufacturer is himself equipped to produce these parts. The Timken Roller Bearing Axle Co., of Canton, O., gives it first show view of the new pressed steel rear axle which was recently described at length in the Motor World. The exhibit also contains numerous suggestions of the great variety of ways in which Timken roller bearings may be and are employed in automobile practice.

A steel jacketed rear axle in oil, is a feature of the axle display which the American Ball Bearing Co., of Cleveland, O., has arranged. Many combinations for widely differing requirements are shown.

The Standard Roller Bearing Co., of Philadelphia, has new things to offer in this year's exhibit in its latest annular ball bearings and annular roller bearings, together with the improved Grant bearing. Axle production is a part of the concern's activities, too, as is indicated by the specimens of front and rear axles. Another Philadelphia concern, the Merchant & Evans Co. Mechanical Department, has entered the lists for front and rear axle business, displaying with some pride the "Evans" rear axle transmission. In addition to axles this company is offering, among other of its specialties, tire and tool cases of steel, which completely enclose the spare tire but utilize the space available in the center of the big diameter of the tire as a tool box.

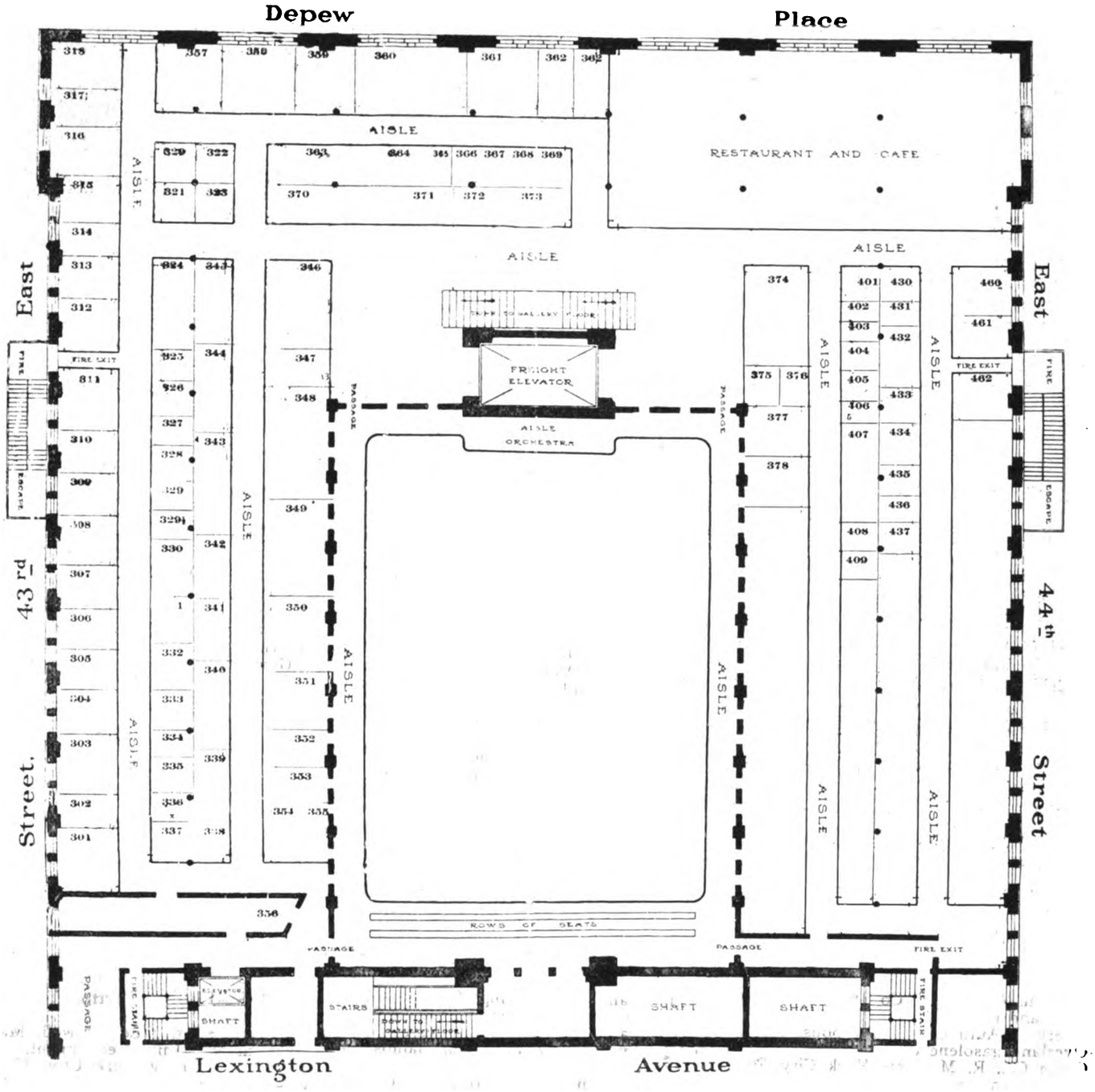
Chains, both imported and American, are to be found among the exhibits. Of the imported chains those handled by Charles E. Miller, of New York City, are by far the best known. For several years he has been the American agent for the Brampton chains made by Brampton Bros., of Birmingham, England, who were established in 1852 and who are said to be not only the oldest but the largest manufacturers of motor car, bicycle and machinery chains in the world. Several well known American cars use the Brampton chain, which has established a reputation throughout the country.

Whitney chains in many new forms make their initial appearance at the show. A number of improved roller chains for motor buggies and trucks have been evolved by the Whitney Mfg. Co., of Hartford, Conn., since the show last year. A "quiet chain," Schmidt patent, will be demonstrated, as will the Whitney chain belt. The full line of products will be represented, including samples of the new high speed vertical attachment for the Whitney hand miller, both in the plain and universal form.

No radical changes will be observable in the chains exhibited by the Diamond Chain and Manufacturing Co., of Indianapolis, Ind. Improvements in details have been made, however, and a decided advan-

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PALACE SHOW—SECOND GALLERY



tage over former production has been brought about by alterations in the quality and heat treatment of the steel from which the chains are made, giving an increase in tensile strength of from 25 to 100 per cent.

Baldwin detachable chains will be well shown by the Baldwin Chain & Mfg. Co., of Worcester, Mass., but the regular lines mark no differences from last year. The company is exhibiting a steering gear which is declared to be entirely novel and which has not been put on view before.

Motors ready to go into a car are to be met at almost every turn in the Palace balconies. Of the veterans in the field, the Western Motor Co., of Logansport, Ind., is to be considered a leader. Four of its "Rutenber" motors will be on view for the week, including a new 6-cylinder.

A 6-cylinder, 2-cycle motor is being put on exhibition by the Leather Tire Goods Co., of Newton Upper Falls, Mass. The motor operates with a single carburetter and exhausts into one muffler. It has no valves and only thirteen moving parts. The makers say that it can be throttled down to as low as 80 r.p.m. without backfiring or missing. By a simple cut-out arrangement three cylinders alone can be used without entailing complications or negative work on the part of the idle cylinders, a possibility which is very promising for low speed work. Investigators are promised every opportunity to satisfy themselves as to whether the motor in actual practice can perform according to the representations.

A pot-pourri of small things, such as the famous Columbia lock nuts, copper asbestos gaskets, seamless flexible copper hose, pump pressure registers, etc., add a flavor to the accessory and parts mixture which the technical epicure enjoys.

AUTOMOBILE EXHIBITS.

Main Floor.

Acme Motor Car Co., Reading, Pa., 2—Acme gasolene cars.

American Motor Car Co., Indianapolis, Ind., 54—American gasolene cars.

Atlas Motor Car Co., Springfield, Mass., 9—Atlas 2-cycle gasolene cars.

Austin Automobile Co., Grand Rapids, Mich., 7—Austin gasolene cars.

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Brewster & Co., New York City, 4½ Delaunay Belleville gasolene cars.
Brush Runabout Co., Detroit, Mich., 32—Brush gasolene cars.
Buckeye Mfg. Co., Anderson, Ind., 35—Lambert gasolene cars.
C. G. V. Import Co., New York, 41—C. G. V. gasolene cars.
Cartercar Co., Pontiac, Mich., 14—Cartercar gasolene cars.
Chadwick Engineering Works, Pottstown, Pa., 33—Chadwick Great Six gasolene cars.
Dayton Motor Car Co., Dayton, O., 37—Stoddard-Dayton gasolene cars.
De Dietrich Import Co., New York, 39—De Dietrich gasolene cars.
De Dion Bouton Selling Branch, New York City, 49—De Dion gasolene cars.
Delahaye Import Co., New York City, 50—Delahaye gasolene cars.
De Luxe Motor Car Co., Detroit, Mich., 8—De Luxe gasolen cars.
Fiat Automobile Co., New York City, 42—Fiat gasolene cars.
Ford Motor Co., Detroit, Mich., 25—Ford gasolene cars.
Gaeth Automobile Co., Cleveland, O., 51—Gaeth gasolene cars.
Holsman Automobile Co., Chicago, Ill., 31—Holsman motor buggies.
Hol-Tan Co., New York City, 45—Lancia gasolene cars.
Hotchkiss Import Co., New York City, 44—Hotchkiss gasolene cars.
Isotta Import Co., New York City, 47—Isotta gasolene cars.
Jackson Automobile Co., Jackson, Mich., 36—Jackson gasolene cars.
Kiblinger, W. H., Co., Auburn, Ind., 56—Kiblinger motor buggies.
Lane Motor Vehicle Co., Poughkeepsie, N. Y., 52—Lane steam cars.
Marion Motor Car Co., Indianapolis, Ind., 5—Marion gasolene cars.
Maxwell-Briscoe Motor Co., Tarrytown, N. Y., 27 and 57—Maxwell gasolene cars.
Midland Motor Co., Moline, Ill., 30—Midland gasolene cars.
Mitchell Motor Car Co., Racine, Wis., 38—Mitchell gasolene cars.
Moline Automobile Co., East Moline, Ill., 15—Moline gasolene cars.
Moon Motor Car Co., St. Louis, Mo., 3—Moon gasolene cars.
Mora Motor Car Co., Newark, N. Y., 29—Mora gasolene cars.
National Motor Vehicle Co., Indianapolis, Ind., 28—National gasolene cars.
Nordyke & Marmon Co., Indianapolis, Ind., 4—Marmon gasolene cars.
Oakland Motor Car Co., Pontiac, Mich., 1—Oakland gasolene cars.
Overland Auto Co., Indianapolis, Ind., 6—Overland gasolene cars.
Owen Co., R. M., New York City, 26—Premier gasolene cars.
Palais De l'Automobile, New York City, 43—Imported gasolene cars.
Panhard & Levassor, New York City, 40—Panhard gasolene cars.
Pennsylvania Auto Motor Co., Bryn Mawr, Pa., 12—Pennsylvania gasolene cars.
Regal Motor Car Co., Detroit, Mich., 55—Regal gasolene cars.
Reo Motor Car Co., Lansing, Mich., 24—Reo gasolene cars.
Renault Freres Agency, New York City, 46—Renault gasolene cars.
Simplex Motor Car Co., Mishawaka, Ind, 34—Simplex gasolene cars.
Welch Motor Car Co., Pontiac, Mich, 16—Welch gasolene cars.
York Motor Car Co., York, Pa., 53—York Pullman gasolene cars.

First Gallery.

Anderson Carriage Co., Detroit, Mich., 207—Detroit electric cars.

American Motor Truck Co., Lockport, N. Y., 212—American gasolene trucks.
Benner Motor Car Co., New York City, 230—Benner gasolene cars.
Black Mfg. Co., Ft. Wayne, Ind., 220—Chicago motor buggies.
Bristol Engineering Co., New Britain, Conn., 218—Rockwell taxicabs.
Cameron Motor Co., Beverly, Mass., 204—Cameron gasolene cars.
Cleveland Autocab Co., Cleveland, O., 228—Taxicabs.
Coates-Goshen Automobile Co., Goshen, N. Y., 206—Gasolene cars.
Commercial Truck Co. of America, Philadelphia, Pa., 229—Electric trucks.
Grabowsky Power Wagon Co., Detroit, Mich., 219—Gasolene commercial trucks.
Gramm-Logan Motor Car Co., Bowling Green, O., 211—gasolene commercial trucks.
Gyroscope Automobile Co., New York City, 201—Gyroscope gasolene cars.
Hart-Kraft Motor Co., York, Pa.—Gasolene cars.
Interstate Automobile Co., Muncie, Ind., 203—Interstate gasolene cars.
Kissel Motor Car Co., Hartford, Wis., 223—Kisselkar gasolene cars.
Lansden Co., The, Newark, N. J., 210—Lansden electric cars.
McCue Co., The, Hartford, Cann., 226—Unfinished gasolene chassis.
Mack Bros. Motor Car Co., Allentown, Pa., 215—Manhattan gasolene truck.
Middleby Auto Co., Reading, Pa., 202—Middleby gasolene cars.
Omar Motor Co., Newark, N. Y., 209—Juvenile gasolene cars.
Pittsburg Motor Vehicle Co., Pittsburg, Pa., 217—Electric commercial vehicles.
Rapid Motor Vehicle Co., Pontiac, Mich., 213—Rapid gasolene trucks.
Reliable-Dayton Motor Car Co., Chicago, Ill., 200—Reliable-Dayton motor buggies.
Reliance Motor Truck Co., Detroit, Mich., 216—Reliance gasolene trucks.
Schacht Mfg. Co., Cincinnati, O., 224—Schacht motor buggies.
Speedwell Motor Car Co., Dayton O., 205—Speedwell gasolene cars.
Sultan Motor Co., Springfield, Mass., 227—Taxicabs.
Wayne Works, Richmond, Ind., 208—Richmond, Ind., 208—Richmond gasolene

ACCESSORY EXHIBITS.

First Gallery.

Ajax-Grieb Rubber Co., New York City, 172-F—Ajax tires.
American Ball Bearing Co., Cleveland, O., 123-O—Ball bearings.
American Electrical Novelty & Mfg. Co., 168-Q—Ever Ready Batteries, lamps and tire specialties.
Atwater-Kent Mfg. Works, Philadelphia, Pa., 144-R—Igniters and timers.
Atwood-Castle Co., Amesbury, Mass., 164-V—Lamps.
Autocoil Co., Jersey City, N. J., 140-R—Coils and ignition systems.
Auto Improvement Co., New York City, 169-Q—Self starting devices and motor specialties.
Badger Brass Mfg. Co., New York City and Kenosha, Wis., 116-J—Solar lamps and acetylene generators.
Baldwin Chain and Mfg. Co., Worcester, Mass., 152-S—Baldwin chains and recoil check.
Bowser & Co., S. F., Ft. Wayne, Ind., 120-N—Tanks, measuring pumps and gasolene storage systems.
Briscoe Mfg. Co., Detroit, Mich., 127-P—Radiators and fittings.
Brown-Lipe Gear Co., Syracuse, N. Y., 108-K—Transmissions, differential and steering gears.
Byrne, Kingston & Co., Kokomo, Ind., 154-T—Kingston carburetters.
Coes Wrench Co., Worcester, Mass., 159½-V—Adjustable wrenches.
Columbia Nut and Bolt Co., Bridgeport, Conn., 122-O—Lock nuts.
Connecticut Telephone and Electric Co., Meriden, Conn., 129-P—Spark coils, switches, and ignition specialties.
Consolidated Rubber Tire Co., New York City, 162-V—Tires.
Continental Caoutchouc Co., New York City, 170-F—Continental tires.
Cowles & Co., C., New Haven, Conn., 149-S—Accessories.
Cramp & Sons Ship & Engine Co., Wm., Philadelphia, Pa., 139-R—Bronze castings and automobile parts.
Diamond Chain and Mfg. Co., Indianapolis, Ind., 128-P—Axles, chains, transmissions, sprockets.
Diamond Rubber Co., Akron, O., 101-I—Diamond tires.
Dixon Crucible Co., Joseph, Jersey City, N. J., 183-B—Graphite and lubricants.
Dow Tire Co., New York City, 185-B—Dow tires.
Edmunds & Jones Mfg. Co., Detroit, Mich., 141-R—Lamps and specialties.
Electric Storage Battery Co., Philadelphia, Pa., 175-76-F—Accumulators.
Empire Automobile Tire Co., Trenton, N. J., 178-F—Empire tires.
Firestone Tire & Rubber Co., Akron, O., 113-L—Firestone tires.
Fisk Rubber Co., Chicopee Falls, Mass., 117-J—Fisk tires.
G & J Tire Co., Indianapolis, Ind., 105-K—G & J tires.
Gabriel Horn Mfg. Co., Cleveland, O., 163-V—Gabriel exhaust horns.
Gemmer Mfg. Co., Detroit, Mich., 171-F—Steering gears and parts.
Gilbert Mfg. Co., New Haven, Conn., 158-V—Tires, jackets, lamps, covers, and rubber cloth specialties.
Goodrich Co., B. F., Akron, O., 119-H—Goodrich tires.
Goodyear Tire & Rubber Co., Akron, O., 109-M—Goodrich tires.
Gray & Davis, Amesbury, Mass., 104-K—Lamps.
Gray-Hawley Mfg. Co., Detroit, Mich., 150-S—Chime whistles and muffler cut-outs.
Ham Mfg. Co., C. T., Rochester, N. Y., 166-U—Lamps.
Harris Oil Co., A. W., Providence, R. I., 126-P—Lubricants.
Hartford Rubber Works, Co., Hartford, Conn., 115-J—Hartford Tires.
Hartford Suspension Co., Jersey City, N. J., 135-S—Truffault-Hartford shock absorbers.
Heinze Electric Co., Lowell, Mass., 132-P—Coils and ignition equipment.
Herz&Co., New York City, 151-S—Timers, plugs and ignition specialties.
Hess-Bright Mfg. Co., Philadelphia, Pa., 191-B—Annular ball bearings.
Hoffecker Co., The, Boston, Mass., 184-B—Speedometers.
Hyatt Roller Bearing Co., Harrison, N. J., 102-K—Roller bearings.
Jones Speedometer, New York City, 160-V—Speedometers, annunciators, odometers and specialties.
Kokomo Electric Co., Kokomo, Ind., 154½-T—Ignition specialties.
Leather Tire Goods Co., Newton Upper Falls, Mass., 187-B—Non-skid covers and leather inner tubes.
Light Mfg. & Foundry Co., Pottstown, Pa., 148-S—Aluminum parts and castings.
McCord Mfg. Co., Chicago, Ill., 181-B—Radiators.
Mezger, C. A., New York City, 142-R—"Soot-proof" spark plugs.
Michelin Tire Co., Milltown, N. J., 190-B—Michelin tires.

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Miller, Charles E., New York City, 225-C—Brampton chains, supplies and accessories.
Morgan & Wright, Detroit, Mich., 121-O—Morgan & Wright tires.
Mosler & Co., A. R., New York City, 159-V—Spark plugs.
Motsinger Device Mfg. Co., Pendleton, Ind., 157-V—Ignition systems.
Motz Clincher Tire and Rubber Co., Akron, O., 161-V—Clincher tires.
National Battery Co., Buffalo, N. Y., 112-L—Accumulators.
National Carbon Co., New York City, 157-R—Dry batteries.
National Coil Co., Lansing, Mich., 179-F—Spark coils.
Newmastic Tire Co., New York City, 214-G—Tire filling compound.
N. Y. & N. J. Lubricant Co., New York City, 131-P—Lubricants.
Oliver Mfg. Co., Chicago, Ill., 103-K—Jacks and accessories.
Pantasote Co., New York City, 189-B—Top and upholstering materials.
Pennsylvania Rubber Co., Jeannette, Pa., 133-S—Pennsylvania tires.
Pittsfield Spark Coil Co., Dalton, Mass., 180-B—Ignition systems.
Randall-Faichney Co., Boston, Mass., 156-W—Oil guns.
Rands Mfg. Co., Detroit, Mich., 125-P—Tops and accessories.
Remy Electric Co., Anderson, Ind., 186-B—Magnetos.
Republic Rubber Co., Youngstown, O., 188-B—Tires.
Sager Co., J. H., Rochester, N. Y., 145-R—Supplementary springs.
Shaler Co., C. A., Waupum, Wis., 153-T—Electric vulcanizers.
Shelby Steel Tube Co., Pittsburg, Pa., 118-J—Cold drawn steel tubing.
Smith Co., A. O., Milwaukee, Wis., 134-S—Gears and parts.
Spicer Universal Joint Mfg. Co., Plainfield, N. J., 130-P—Universal joints.
Splitdorf, C. F., New York City, 107-K—Timers, distributers, coils and ignition specialties.
Sprague Umbrella Co., Norwalk, O., 167-U—Tops and wind shields.
Standard Roller Bearing Co., Philadelphia, Pa., 155-W—Roller bearings.
Standard Welding Co., Cleveland, O., 124-O.—Tubing and electrically welded parts.
Stewart & Clark Mfg. Co., Chicago, Ill., 143-R—Speed indicators.
Swinehart Clincher Tire & Rubber Co., Akron, O., 137-S—Swinehart tires.
Timken Roller Bearing Axle Co., Canton, O. 110-M—Roller bearings and axles.
Veeder Mfg. Co., Hartford, Conn., 114-L—Odometers and speed indicators.
Warner Gear Co., Muncie, Ind., 138-R—Gears and parts.
Warner Instrument Co., Beloit, Wis., 136-S—Speed indicators and odometers.
Weed Chain Tire Grip Co., New York City, 177-F—Non-skid tire chains.
Westchester Appliance Co., Yonkers, N. Y., 173-F—Batteries and coils.
Wheeler, F. H., Indianapolis Ind., 165-V—Shebler carburetters.
Whitney Mfg. Co., Hartford, Conn., 106-K—Whitney chains and keying systems.
Witherbee Igniter Co., New York City, 146-R—Witherbee storage batteries and Wico ignition specialties.
American Metal Hose Co., New York City, 329½-C—Metal specialties.

Second Gallery.

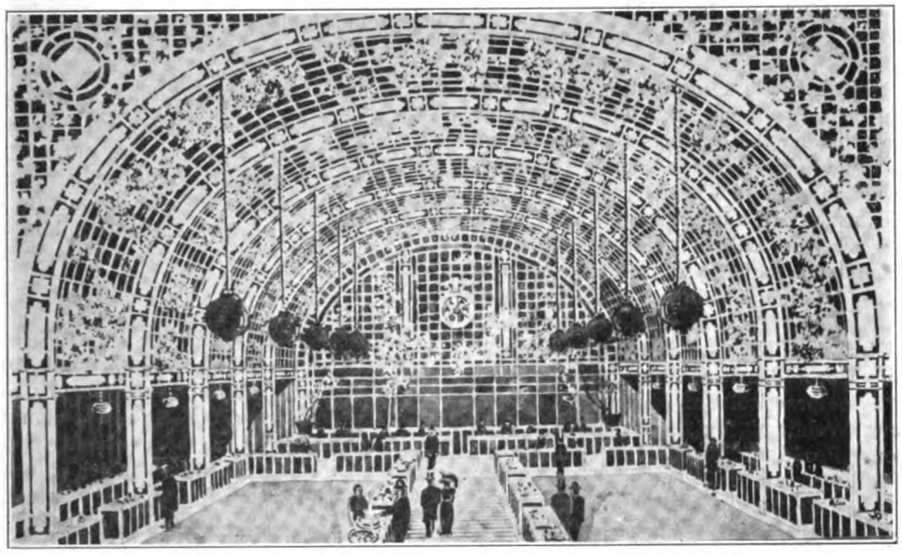
Alexander & Co., H. T., New York City, 317-B—Lubricants.
Allen Auto Specialty Co., New York City, 363-F—Tire jackets and specialties.
Allen Fire Dept. Supply Co., New York City, 433-T—Fire appliances.
American Thermos Bottle Co., New York City, 308-A—Thermos bottles.
American Thermo Ware Co., New York City, 337-C—Goggles, hydrometers.
Anderson Forge Machine Co., Detroit, Mich., 339-C—Crankshafts, gears.
Automobile Supply Mfg. Co., Brooklyn, N. Y., 357-E—Horns, tubing and brass specialties.
Auto Tire Inflating Co., Brooklyn, N. Y., 436-J—Tire pumps.
Austro-American Separator Co., Cleveland, O., 362-E—Gasolene funnels.
Bosch Magneto Co., Robt., New York City, 348-G—Ignition systems.
Bretz Co., J. S., New York City, 324-C—Ball bearings and high tension magnetos.
Briggs, Wm. M., Brooklyn, N. Y., 404-J—Batteries.
Brown Co., The, Syracuse, N. Y., 333-C—Gauges and tools.
Brown Mfg. Co., John W., Columbus, O., 327-C—Lamps.
Brownell Motor Co., F. A., Rochester, N. Y., 432-T—Gasolene motors.
Buda Foundry & Mfg. Co., Chicago, Ill., 332-C—Jacks.
Bunnell & Co., J. H., New York City, 435-J—Batteries.
Burnett Compound Spring, Incorporated, Newark, N. J., 331-C—Suspension springs.
Burrowes Co., E. T., Portland, Me., 309-A—Wind shields and emergency wheels.
Brandenburg & Co., New York City, 346-G—Coils and ignition specialties.
Comptoir d'Innovation Pour Automobiles, Paris, 374-H—Tire inflators and French specialties.
Dayton Rubber Mfg. Co., Dayton, O., 316-B—Airless tires.
Downing, Charles J., New York City, 343-C—Supplies.
Driggs-Seabury Ordnance Corporation, Sharon, Pa., 360-E—Crank shafts and frames.
Duffy Grease Co., New York City, 431-J—Lubricants.
Eastern Carbon Works, Jersey City, N. J., 338-C—Dry cells.
Elite Mfg. Co., Ashland, O., 326-C—Jacks and pumps.
Ennis Rubber Mfg. Co., Newark, N. J., 321-D—Tires.
Empire Auto Top Co., New York City, 313-B—Tops.
Excelsior Storage Battery Co., New York City, 325-C—Accumulators.
F. R. V. Auto Parts Co., New York City, 358-E—Shock absorbers and differential clutches.
Flentie, Ernest, Cambridge, Mass., 334-C—Shock preventers.
Federal Mfg. Co., Lowell, Mass., 367-F—"Rex" batteries.
Geiszler Bros., New York City, 307-A—Batteries.
Garage Equipment Co., Milwaukee, Wis., 305-A—Specialties.
General Storage Battery Co., New York City, 301-A—Batteries.
Gloversville Auto Glove Co., Gloversville, N. Y., 377-H—Gloves.
Guaranty Faultless Auto Tube Co., 378-H—Tubes.
Healy Leather Tire Co., New York City, 349-G—Healy leather tires.
Havoline Oil Co., New York City, 408-J—Lubricants.
Hill Mfg. Co., Buffalo, N. Y., 323-D—Oilers.
High Wheel Auto Parts Co., Muncie, Ind., 352-G—Parts for motor buggies.
Hydraulic Oil Storage & Distributing Co., Detroit, Mich., 315-B—Tanks, "Snells" storage systems.
Jeffrey-Dewitt Co., Newark, N. J., 366-F—Spark plugs.
Johnson & Co., Isaac G., Spuyten Duyvil, N. Y., 340-C—Forgings and castings.
Keystone Lubricating Co., Philadelphia, Pa., 320-D—Lubricants.
Lavalette & Co., New York City, 370-F—Magnetos.
Lutz-Lockwood Mfg. Co., New York City, 353-G—
Long Island Auto Supply Mfg. Co., Brooklyn, N. Y., 328-C—Supplies.
Merchant & Evans Co., Philadelphia, Pa., 341-C—Multiple disc clutches and automobile fittings.
Monitor Mfg. Co., Boston, Mass., 401-J—Timers and distributors.
Miller & Sons, Wm. P., Long Island City, N. Y., 342-C—Lubricants.
Metal Stamping Co., New York City, 314-B—Radiators.
Marko Storage Battery Co., Brooklyn, N. Y., 430-J—Batteries.
Myers, J. L. & A. J., New York City, 244-C—Carburetters.
Nathan Novelty Mfg. Co., New York City, 359-E—Tire covers and cases.
National Auto Top Co., New York City, 351-G—Tops.
New Departure Mfg. Co., Bristol, Conn., 407-J—Ball bearings.
New York Coil Co., New York City, 434-J—Spark coils.
Noonan Tool & Machine Works, A. S., Rome, N. Y., 405-J—Tools.
Philadelphia Timer & Machine Co., Philadelphia, Pa., 354-G—Timers.
Perfection Wrench Co., Port Chester, N. Y., 403-J—Wrenches and tools.
Pneu l'Electric Co., New York City, 345-G—Tires.
Polson, W. F., Buffalo, N. Y., 303-A—Accessories.
Quincy-Manchester-Sargent Co., Plainfield, N. J., 335-C—Auto Wrenches.
R. I. V. Co., Inc., New York City, 373-F—Annular ball bearings.
Reeves & Son, Paul, Philadelphia, Pa., 356—Bearings, castings.
Royal Equipment Co., Bridgeport, Conn., 330-C—Brake lining materials.
Rubly Mfg. Co., Tuckahoe, N. Y., 437-J—
Rushmore Dynamo Works, Plainfield, N. J., 347-G—Acetylene lamps and generators.
Safety Device Co., Indianapolis, Ind. 368-F—Electric sundries.
Salman & Co., John A., Boston, Mass., 402-J—
Seamless Rubber Co., New Haven, Conn., 302-A—Rubber goods.
Shore Instrument & Mfg. Co., New York City, 406-J—
Sireno Co., New York City, 329-C—Electric horns.
Smith Mfg. Co., I. J., New York City, 376-H—
Snell, Irving, Little Falls, N. Y., 365-F—Tanks, gasolene storage systems.
Spare Motor Wheel of America, Ltd., Chicago, Ill., 311-A—Stepney spare wheels.
Standard Leather Washer Mfg. Co., Newark, N. J., 322-D—Leather washers.
Stanley & Patterson, New York City, 371-F—Batteries and tools.
Stromberg Motor Device Co., Chicago, Ill., 304-A—Carburetters.
Troy Carriage Sun Shade Co., Troy, O., 350-G—Tops.
Travers Blow-out Patch Co., New York City, 336-C—Tire repair outfit.
U. S. McAdamite Metal Co., Brooklyn, N. Y., 462-L—Bronze, brass and aluminum castings.
Union Battery Co., Belleville, N. J., 409-J—Batteries.
Vanguard Mfg. Co., Joliet, Ill., 364-F—
Wetherill Finished Casting Co., Philadelphia, Pa., 369-F—Castings.
Wilkinson Co., John S., Newburgh, N. Y., 362½-E—
Zeglin Bullet-proof Cloth Co., Chicago, Ill., 306-A—Non-puncturable tires and fabrics.

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WHO WILL SHOW AT THE GARDEN

List of Exhibitors Numbers 280—Where Cars Will be Staged—Distribution of the Other Departments.

Showing a total of 294 displays, the list of exhibitors at the show of the Association of Licensed Automobile Manufacturers, which is to open in Madison Square Garden on Saturday, January 16th, has just been announced. Of individual exhibitors, manufacturers and dealers, there will be 280, the difference being caused by deductions for stands devoted to publications, and for the several manufacturers of cars who will stage displays in more than one of the three main departments to be devoted to the exhibition of cars, comprising the gasolene pleasure vehicles, electrics and the commercial types.



DECORATIVE SCHEME OF CONCERT HALL FOR THE GARDEN SHOW

As in former years, the main floor and elevated platform at the sides of the great arena will be devoted to the purposes of the automobile manufacturers who are producers of complete, gasolene-driven vehicles. In the restaurant in the Madison avenue end of the Garden, the displays of electric vehicles will be staged. The basement will be divided between the makers exhibiting commercial vehicles of all motive powers, the manufacturers of motorcycles, and a number of accessory exhibitors. The upper regions of the Garden, of course, will be given over wholly to the displays of parts and accessories. Space allotments to exhibitors of this class include locations in the Concert Hall, with its novel scheme of decoration in which the setting of the exhibits will be under a giant trellis covered with vines and illuminated by concealed incandescent lamps.

The roster of the show reveals 40 exhibitors of complete cars, seven of whom will show vehicles on more than one stand; 26 exhibitors of motorcycles, and 214 exhibitors of parts, accessories and sundries. The complete exhibitors' list, together with the general location of the displays, is as follows:

Main Floor.

Knox Automobile Co.
Matheson Motor Car Co.
Elmore Mfg. Co.
Cadillac Motor Car Co.
Pope Motor Car Co.
Royal Motor Car Co.
Autocar Co.
Everitt-Metzger-Flanders Co.
Corbin Motor Veh. Corp.
Studebaker Automobile Co.
Electric Vehicle Co.
F. B. Stearns Co.
Packard Motor Car Co.
Geo. N. Pierce Co.
E. R. Thomas Motor Co.
Chalmers-Detroit Motor Co.
H. H. Franklin Mfg. Co.
Locomobile Co. of America.
Pope Mfg. Co.
Winton Motor Carriage Co.
Stevens-Duryea Co.
Peerless Motor Car Co.
Lozier Motor Co.

Elevated Platform.

Selden Motor Vehicle Co.
Haynes Automobile Co.
Simplex Automobile Co.
Hewitt Motor Co.
Walter Automobile Co.
Woods Motor Vehicle Co.
The White Co.
Apperson Bros. Automobile Co.

Exhibition Hall, Madison Avenue Front.

The Waverley Co.
The Electric Vehicle Co.
The Rauch & Lang Carriage Co.
S. R. Bailey & Co., Inc.
The Anderson Carriage Co.
Babcock Electric Carriage Co.
Studebaker Automobile Co.
Baker Motor Vehicle Co.

Basement, Commercial Vehicle Department.

Knox Automobile Co.
General Vehicle Co.
Champion Wagon Co.
H. H. Franklin Mfg. Co.
Studebaker Automobile Co.
E. R. Thomas Motor Co.
Alden Sampson, 2d.
Hewitt Motor Co.

Elevated Platform, Accessories.

The B. F. Goodrich Co.
The Diamond Rubber Co.
C. F. Splitdorf.
The Goodyear Tire & Rubber Co.
Shelby Steel Tube Co.
The Brown-Lipe Gear Co.
G & J Tire Co.
Briscoe Mfg. Co.
Gilbert Mfg. Co.
Automobile Improvement Co.
Auto Improvement Co.
Vacuum Oil Co.
Herz & Co.
S. F. Bowser & Co., Inc.
Gray & Davis
The Veeder Mfg. Co.
R. E. Dietz Co.
Atwater-Kent Mfg. Wks.
Baldwin Chain Mfg. Co.
N. Y. & N. J. Lubricant Co.
Warner Instrument Co.
Light Mfg. & Fdy. Co.
Empire Automobile Tire Co.
The Autocoil Co.
The Swinehart Clincher T. & R. Co.
Remy Electric Co.
Dow Tire Co.
Jones Speedometer.
Conn. Tel. & Elec. Co.
Morgan & Wright.
Continental Caoutchouc Co.
Spicer Universal Joint Mfg. Co.
J. H. Sager Co.
The R. E. Hardy Co.
Ajax-Grieb Rubber Co.
Weed Chain Tire Grip Co.
Consolidated Rubber Tire Co.
F. H. Wheeler.
Witherbee Igniter Co.
The Republic Rubber Co.
The Duff Mfg. Co.
The Chandler Co., Inc.
Michelin Tire Co.
Leather Tire Goods Co.
Adam Cooks Sons.
Avery Portable Lighting Co.
Fox Metallic Tire Belt Co.
The Globe Machine & Stamp Co.
Janney-Steinmetz & Co.
Firestone Tire & Rubber Co.
Oliver Mfg. Co.
The Timken Roller Bearing Axle Co.
Hartford Suspension Co.
Penn. Rubber Co.
Manufacturers Fdy. Co.
Motsinger Device Mfg. Co.
Atwood Castle Co.
Byrne-Kingston & Co.
The Wm. Cramp & Sons Ship & Engine Bldg. Co.
A. W. Harris Oil Co.
Brennan Mfg. Co.
The Warner Gear Co.
Phineas Jones & Co.
The Standard Welding Co.
The American Ball-Bearing Co.
The Badger Brass Mfg. Co.
The Fisk Rubber Co.
Diamond Chain & Mfg. Co.
Pittsfield Spark Coil Co.
Rose Mfg. Co.
Whitney Mfg. Co.
The Hartford Rubber Wks. Co.
A. R. Mosler & Co.
Gabriel Horn Mfg. Co.
Joseph Dixon Crucible Co.
Heinze Elec. Co.
C. T. Ham Mfg. Co.
Valentine & Co.
Hyatt Roler Bearing Co.

Balcony.

McCord Mfg. Co.
Geo. A. Haws.
C. A. Shaler Co.
Wm. C. Robinson & Sons Co.
Cook's Standard Tool Co.
A. C. Smith Co.
Eastern Carbon Wks.
Allen Auto Specialty Co.
Jeffery-Dewitt Co.
Morrison-Ricker Mfg. Co.
N. Y. Sporting Goods Co.
Metal Stamping Co.
Hydraulic Oil Storage Co.
Hopewell Bros.
I. S. Bretz Co.
Pierson Motor Supply Co.
Havoline Oil Co.
Apple Elec. Co.
Isaac G. Johnson & Co.
The Auto Pump Co.
The Rushmore Dynamo Wks.
English & Mersick Co.
E. M. Benford.
K. W. Ignition Co.
Austro-American Separator Co.
Wm. R. Winn.
N. Y. Coil Co.
Voorhees Rubber Mfg. Co.
American Thermos Bottle Co. of N. Y.
L. J. Mutty Co.
The A.-Z. Co.
High Frequency Ignition Coil Co.
H. H. Franklin Mfg. Co.
Keystone Lubricating Co.
Leon Mann Co.
P. Rielly & Son.
Philadelphia Timer & Machine Co.
Jarman & Baker.
R. I. V. Co.
Atlas Rubber Co.
Champion Ignition Co.
Burnet Compound Spring, Inc.
Buda Fdy. & Mfg. Co.
Chas E. Miller.
Trenton Rubber Mfg. Co.
O. W. Young.
Anderson Forge & Machine Co.

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M. H. Cormack & Co.
Geiszler Bros.
Wm. P. Miller Sons.

Concert Hall.

The Sprague Umbrella Co.
L. C. Chase & Co.
Noera Mfg. Co.
Columbia Lubricants Co. of N. Y.
The Hess-Bright Mfg. Co.
National Carbon Co.
The Lunkenheimer Co.
National Battery Co.
The Hoffecker Co.
Westchester Appliance Co.
Standard Roller Bearing Co.
The Randall-Faichney Co.
The Edmund & Jones Mfg. Co.
The Pantasote Co.
Elec. Storage Bat. Co.
Manhattan Screw & Stamping Wks.
Springfield Metal Body Co.
Gemmer Mfg. Co.
C. Cowles & Co.
Coes Wrench Co.
Never Miss Spark Plug Co.
Stewart & Clark Mfg. Co.
C. A. Mezger, Inc.
American & British Mfg. Co.
Rands Mfg. Co.

Second Tier Boxes.

Bosch Magneto Co.
Columbia Nut & Bolt Co., Inc.
H. A. Allers & Co.
Travers Blowout Patch Co.
Paul S. Reeves & Son.
The Seamless Rubber Co.
Sampson Leather Tire Co.
Davis-Bournonville Co.
The Perfection Wrench Co.
Erie Foundry Co.
Ernst Flentje.
The Sireno Co.
Duffy Grease Co.
Coloris Mfg. Co.
Union Battery Co.
Chicago Wind Shield Co.

Third Tier Boxes.

Vesta Accumulator Co.
The Mica Core Mfg. Co.
Nadall Mfg. Co.
Elite Mfg. Co.
Auto-Tire Inflater Co.
Amer. Elec. Fuse Co.
John Lucas & Co.
H. & C. Bottle Mfg. Co.
A. O. Brictson.
The Standard Leather Washer Mfg. Co.
The "Lux" Auto Lamp Mfg. Co.
Quincy, Manchester, Sargent Co.
Marko Storage Battery Co.
Patterson, Gottfried & Hunter.
Healy Leather Tire Co.
C. J. Downing.
Kitsee Storage Battery Co.
Albert Champion Co.
E. T. Burrows Co.
Stromberg Motor Devices Co.
Julius King Optical Co.
Livingston Radiator Co.
The White & Bagley Co.
The Vehicle Apron & Hood Co.
Hill Dryer Co.
Amer. Thermo-Ware Co.
Automobile Supply Mfg. Co.
Lavelette & Co.
Perfection Spring Co.
The New Departure Mfg. Co.
Stanley & Patterson.
Vanguard Mfg. Co.
Merchant & Evans Co.
Motz Clincher T. & R. Co.
The Post & Lester Co.

Basement, Motorcycle Department.

Merkel-Light Motor Co.
The Consolidated Mfg. Co.
Excelsior Supply Co.
N. S. U. Motor Co.
American Motor Co.
Hendee Mfg. Co.
F. A. Baker & Co.
The Pierce Cycle Co.
Bicycling World Co.
Ovington Motor Co.
Reading Standard Co.
The Thornecker Motor Mfg. Co.
Harley-Davidson Motor Co.
The Auto-Bi Co.
Thiem Mfg. Co.
The Motor Car Equipment Co.
Walton Motor Co., Inc.
H. & F. Mesinger Mfg. Co.
G. H. Curtiss Mfg. Co.
Eclipse Machine Co.
The New Era Gas Engine Co.
Reliance Motor Cycle Co.
Crouch Motor Co.
The Persons Mfg. Co.
Aurora Automatic Machine Co.

Basement, Accessories.

G. L. Economizer Co.
Comptoir D'Innovations Pour Auto.
Nathan Novelty Mfg. Co.
Noonan Tool & Machine Wks.
Pratt & Whitney Co.
Philadelphia Storage Battery Co.
The Troy Car. Sun Shade Co.
The Garvin Machine Co.
Faultless Auto Tube Co.

Program for the Engineers' Meeting.

As already announced, the fourth annual meeting of the Society of Automobile Engineers will convene at the Automobile Club of America on Tuesday morning, January 5th. The complete program shows that the entire forenoon will be devoted to making tests with various cars on the club dynamometer, under the supervision of Henry Souther, head of the technical committee of the club. Following this there will be the usual business meeting and a technical session during the afternoon, the subjects to be discussed being the "Economics of Weight Reduction," by F. D. Howe; "The Factor of Reliability in Ignition Apparatus," by A. Atwater Kent; "Requirements of Automobile Brake Construction," by Thos. J. Fay and Lawrence Whitcomb. Immediately following the readings the annual dinner will be held. After the dinner the meeting will adjourn to Tuesday, January 19.

On the date of adjournment a number of motor car tests will be made on the club's dynamometer, while in the afternoon papers on the following subjects will be read: "An Improved Type of Compression Coupling," by W. S. Noyes; "Standardizing Automobile Motor Bearings," by S. P. Wetherill, Jr.; "Some practical Considerations in Autogenous Welding," by Henry Cave; "Continuous Form of Engine Indicator," by S W. Rushmore and H. L. Towle. The afternoon meeting at which the papers will be presented will be held at the Engineering Societies Building, and the annual dinner at the Engineers' Club.

Studebaker to Have Big Individual Show.

During show time New York City will be rich in individual, independent shows conducted by various makers and agents. The latest announcement in this line is that of the Studebaker Automobile Co., which will devote the entire ground floor of the big Studebaker building at Broadway, Seventh Avenue and Forty-eighth street to a display of the various type of motor cars and vehicles made and sold by the company. The exhibit, in its variety, will be the largest ever assembled by an individual firm, since it will include gasolene cars from small runabouts to large limousines, a full line of electric pleasure vehicles, and electric commercial vehicles of types ranging from light delivery wagons to the heaviest trucks. Free bus service will be provided visitors to and from the Palace and Garden shows.

Motor Vehicles in the British Isles.

Statistics compiled by the Royal Automobile Club of England show that in the United Kingdom there were registered, up to September 30, 1908, a total of 154,391 motor vehicles, divided as follows: Private cars in England and Wales, 63,240; trade vehicles, 11,172; public conveyances, 5,461; motorcycles, 57,472; total for England and Wales, 137,345. Private cars in Scotland, 5,231; trade vehicles, 810; public conveyances, 384; motorcycles, 4,482; total for Scotland, 10,907. Pleasure vehicles in Ireland, 2,910; trade vehicles, 122; public conveyances, 5,880; motorcycles, 3,072; total for Ireland, 6.139. The total of each class of vehicles in the United Kingdom are: Private cars, 71,381; trade vehicles, 12,104; public conveyances, 5,880; motorcycles, 65,026.

America's Extensive Use of Automobiles.

It has been estimated that there are at present no less than 150,000 automobiles in use in America, and another estimate places the probable production of the forthcoming year at 75,000 new cars. On this basis, the parent industry is made to loom very large. But when it is considered that in the heydey of the carriage industry no less than 1,000,000 buggies a year were turned out during four consecutive seasons, it appears that the business of vehicle production enjoys possibilities which the automobile section of it has by no means begun to exhaust even yet.

Oregon Show Scheduled for March.

An automobile show for Portland, Ore., will be held next March, in the armory. Several of the Pacific Coast cities are planning shows and efforts are being made to provide for making a circuit which can use more elaborate decorative and attraction features than would the possible in any one of the cities undertaking to run a show wholly on its own account.

Buffalo to Hold February Show.

Buffalo's automobile show has been determined upon for the week beginning February 15, at Convention hall. The show will be held under the direct management of the Automobile Club of Buffalo, with the co-operation of the dealers and local manufacturers.

March Dates for Rochester Show.

The Rochester Automobile Dealers' Association, of Rochester, N. Y., has set its show for March 15 to 20, in Convention Hall. The executive committee of the show includes W. C. Barry, Jr., T. J. Northway, A. H. Zimbrich and George J. Bauer.

Kansas City Fixes Show Dates.

Dates for the automobile show at Kansas City, Mo., were chosen at the last meeting of the local dealers. The affair will be held at Convention hall, March 8 to 13.

Maine Show Opens February 22.

Portland, Me., will hold its show Feb will manage it. This will be the easternmost of all the local shows.

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Makers Explain Their Products' Salient Points

With scarcely an exception, the motor cars at present in the market possess sufficient potential mileage, or "go" in other words, to make them a paying investment to the owner. Their actual worth in terms of passenger miles per dollar of cost and maintenance outlay, however, varies widely according to the type of vehicle and the purpose for which it is designed as well as the manner of its use. Those who are intimately acquainted with the industry are sufficiently familiar with the characteristics of the various cars to be able to make a sound discrimination, should they be called upon to choose a machine for their own individual use. To those who are beyond the pale—the rank outsiders—the task is a far more difficult and entirely bewildering one.

The would-be purchaser of a car, who knows nothing of motor car construction, is forced to rely largely upon the statements of the manufacturers and their agents in making his selection. Brought face to face with these in the course of a canvass of the field, a surprising amount of confusion is engendered in his mind, and frequently a vague impression that whatever the individual merits of the different machines, the question of price aside, the efforts of most salesmen are based upon the use of a few stock recommendations which appear to apply to the entire trade with astonishing generality.

It is not that a car must be radically different from others of its general class in order to be particularly worthy of the buyer's consideration. Indeed, the opinion is held by some manufacturers that the era of the efficacy of "talking points" is past, and that those special levers no longer possess their former power of persuasion in inducing sales. It is not necessary that the machine shall be fabricated of rare materials, put together under extraordinary conditions of shop administration, nor that it shall be accompanied by unusual "inducements" in the shape of free equipment or guarantee. The real essence of the successful marketing of a car lies in the manner in which its adaptibility to the wants of the individual owner may be demonstrated, and—to a surprising degree—to the success of the salesman in presenting his arguments in a brief and forceful style calculated to penetrate the haze of uncertainty which surrounds the prospective customer as a result of interviews with other salesmen.

It has been observed with increasing frequency that the task of selling automobiles constantly is becoming more difficult. In other words, the idea is growing that the personal equation of the salesman is becoming a more potent factor in the administration of the sales department. This being admittedly so, it is interesting to make observation of the various weapons with which the modern motor car salesman arms himself, or, in other words, to compare the selling points exploited by the different manufacturers in disposing of their wares.

With this object the Motor World wrote to a number of well-known American manufacturers who are members of the American Motor Car Manufacturers' Association, asking this question: "Wherein and in exactly what details does your car differ from others? In endeavoring to make sales, upon what points do you lay the most stress?

From the score and more of replies, the following excerpts have been taken:

Maxwell-Briscoe Motor Co.—"The principal differences between our product and that of other manufacturers are, moderate price, all-around utility and reliability in exacting service. In endeavoring to make sales, we point to past performances, arguing that the Maxwell, a car of moderate price, performs the same service as the higher priced competitor, is operated more economically, not liable to disorders on account of its constructional advantages, such as three-point suspension, thermo-syphon cooling, multiple disc clutch, unit construction, etc."

Nordyke & Marmon Co.—"The Marmon differs from most other cars on the market in that it is entirely of our own design and entirely of our own construction. The motor differs from others in its oiling system and this is one of the points upon which we lay the most stress. The rear axle, transmission and brake system differs from others, possessing certain superior features and especially the feature of easy access to the parts. We lay claim to easy riding qualities, due to our system of full elliptic springs and method of suspension. We lay claim to a superior steering gear and connections; to high class body construction and finish."

Pennsylvania Auto Motor Co.—"'Pennsylvania' cars do not materially differ from any other high-grade car. We, of course, have proven and feel that a hemispherical or valve in the head engine has many advantages over the standard types of inverted 'T' or 'L' head engines, since we get the explosion directly over the pistons, and get an absolute utilization of all the gas contents. The arrangement of the valves and cages in the head permit of the easy removal of foreign matter on the pistons and in the combustion chambers, without disturbing any conections whatever. We lubricate all of our motors internally through a hollow crank, by means of a mechanically driven mechanical lubricator. We do not in any way depend upon splash lubrication. We, like many others, use nickel steel throughout, and annular bearings. We have proven again that the unit axle and transmission system is not only practical but desirable. We also lay particular stress on the fact that we have in our factory as complete a line of modern jigs as there is in any factory in the world. This is interchangeability; and another very important thing, that there is not one part of the Pennsylvania car that is made on the piece-work plan. We have absolutely no piece-work in our factory, every man being on a salary."

Mitchell Motor Car Co.—"While there are, of course, numerous differences between our machines and those of other make, still, we use no particular feature that is not common to a great number. In other words, everything about our car is of approved design and according to the best general practice. If there is any one thing that has created sales for us more than any other and because of which we would naturally place stress upon it in selling, it would be the fact that our cars are more stoutly built than the average make and have a reputation for standing up in rough country and under hard service and of delivering a great amount of mileage with very little care."

The Dayton Motor Car Co.—"One point which is always emphasized, is the very large percentage of the entire make-up of the car being made in our own factory, under our direct supervision. Having direct supervision over the raw materials and all structural labor, 99 per cent. of the complete car, we believe is largely responsible for the success of the complete product. In taking under consideration the structural features of the Stoddard-Dayton, it must be borne in mind that all of these features as to principle, material and workmanship are identical in the three principal models, the only difference in these respective models being in the dimensions."

Points further enumerated are: Valve-in-the-head construction of motors, offset crank shafts and automatic, internal lubrication; the use of roller, thrust load bearings throughout the car in all transmission and axle mountings.

Brush Runabout Co.—"So far as we can inform ourselves, the Brush has the only single cylinder vertical engine operating in an automobile in the United States. The transmission is of the planetary type and

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the only one in which multiple disc clutches are used on all three speeds. In making sales, reference is made to the transmission which is self-adjusting, having few wearing parts; also its simplicity, the light weight of the car (900 pounds), the ratio in which the car is geared, making it almost impossible to stall the engine on any grade or in traversing any road."

York Motor Car Co., Inc.—"Our cars differ in construction in many ways. The cylinders are cast separate, with wide ports or openings on each side, and they are put against each other with a light paper packing between, and held by bolts. This gives the advantage of a short engine—the same as the bloc system—each cylinder can be inspected individually, it is only necessary to remove one cylinder in case of replacement, and water pipe connections between the cylinders are eliminated, as the water enters at the rear and leaves at the front. Our integral oiling system in the base of the crank case is operated by a sliding vane pump, of which our point is that the oil level is controlled by an eccentric valve on the inside of the base with the stem running through to the outside and carrying a hand or pointer which registers on a dial by which more or less oil may be secured as desired. We believe this is the only integral oiling system, with practically micrometer adjustment.

"We also lay particular stress on the parts used in Pullman cars, as we do our own manufacturing in our plant, with the exception of the axles, and other articles as lamps, rims, etc. By making our complete car in our own factory, including our own wheels and body, we are able to give a better value than would be otherwise possible in a high grade car."

National Motor Vehicle Co.—"We use a double ignition system on all of our cars, of which the wiring is a feature. We use a crank case oiler of our own design, which is exceptionally efficient and which we think is entirely original with ourselves. We use ball-bearings on the crank shaft and cam shafts of all our cars and have been strong advocates of that type of construction for several seasons past. Our company was one of the very first to exploit that type of construction in this country. The rear system of National cars is another special feature. In general design it is not unlike several others, but the construction of the rear axle housing is such that all of the parts can be inspected, adjusted or removed without disturbing the wheels and without tearing down any other parts of the car. We use sheet aluminum or cast aluminum bodies on all of our cars and either type of construction is a feature as compared with ordinary sheet metal bodies."

A brief summary of the points upon which special stress is laid by other manufacturers follows:

Jackson Automobile Co.—Thermo-syphon water circulation, full-elliptic spring suspensions on all models, brake rods carried inside the frame, unit-power plant design with enclosed fly wheel and on the latest model overhead cam shaft, inclined valves placed in the cylinder heads, adjustable timing gears, special design of clutch linkage, and in a second new model standard magneto ignition.

Inter-State Automobile Co.—The use of a torsion tube which eliminates the use of all struts or torsion rods, complete double ignition with two sets of plugs, unusually large tires, and a complete equipment of accessories, calculated to relieve the retail buyer of any embarrassment in connection with the outfitting of his car.

American Motor Car Sales Co. (Overland)—Silent motor, exclusive design of planetary transmission enclosed completely and mounted as a unit with the live rear axle, absence of side levers and control of the speeds by means of two pedals, clutch adjustment without the use of tools other than a screwdriver, high tension magneto, complete equipment. In larger, four and six-cylinder models, special ball bearing change gear, and, in the latter, low price.

Oakland Motor Car Co.—Special design of two-cylinder vertical motor, with original balancing device and removable cylinder heads, thermo-syphon cooling, one pedal and one side lever in control system, small amount of attention required in connection with maintenance. On the new four-cylinder model, three-point suspension of motor, inclined alignment making lubrication effective as well as assuring straight line drive, epicyclic steering gear having slight differential action.

Reliable-Dayton Motor Car Co.—Direct application of the principles of ordinary motor car construction to the carriage type of vehicle, applied as requirements develop upon experimentation; absence of radical departures from commonly accepted practice, solid and enduring construction.

Ford Motor Co.—Vanadium steel employed in every part of the car, from lamp bracket to axle, magneto incorporated in engine design, block type motor with removable water jacketed cylinder heads, lower half of crank case made of pressed steel and extended to form seamless oil-tight housing and enclosing lower half of entire power plant, every bolt locked securely in place.

W. H. Kiblinger Co.—Air-cooled motor construction, with fan incorporated into fly wheel, special provision for cooling valve springs and preserving their temper, original method of chain adjustment, high road clearances, solid tires and light, graded, resilient springs, non-skidding advantages of high-wheel mounting, hill-climbing ability, general acessibility of mechanical parts.

Hart-Kraft Motor Co.—Exclusive use of unit power plant in 1,000-pound commercial car, all parts of mechanism accessible from driver's seat, simplicity of plant, assured reliability in service due to adoption of solid tires, improved ignition, simple mechanism and fool-proof construction.

The Bristol Engineering Co.—Interchangeability in any unit—that is to say, engine, transmission and rear axle constructions replaceable independently and readily—only two sizes of studs and nuts employed in assemblage, only two socket wrenches required in tool kit, hardening carried out in all small parts, left side control.

Most suggestive, as showing how it is possible to expand the complete selling platform from a single key-feature, was the reply received from the Atlas Motor Car Co., and embodying the radical claims which they make for their two-cycle engine. The name "Atlas perfected, two-cycle engine," is bracketed against the three claims for supremacy, that it is the "Simplest automobile engine built; the most flexible automobile engine built; and indestructible." Developments of these three claims explain that "No adjustment is necessary or possible, hence the easiest to care for"; that it "will throttle down lower and accelerate quicker than any other engine built, hence the easiest car built to handle"; and that "No engine parts replacements ever necessary, hence upkeep expense lowest of any automobile engine built. Will last longer than any other automobile engine and improves constantly by use instead of rapidly deteriorating after a few thousand miles use, like the four-cycle engine."

Investigating Radiator Efficiency.

By plotting curves from the results of an exhaustive series of tests, experimenters connected with the Bush Manufacturing Company, of Hartford, Conn., have obtained data concerning air cell and water space sizes in radiator practice calculated to show that it is desirable to make the air cells small and the water spaces thin, but the extension of the principle beyond a certain point results in a decrease of efficiency. The experiments made it clear that there is little to be gained by making the air cells smaller than one-fourth inch square, giving a one-sixteenth square inch area. Smaller than this, the air cells showed a lessened heat radiation in proportion to area.

The tests also included determinations of such points as air velocities at various car and fan speeds, the most efficient radiator thickness from front to back, the rate of water flow resulting from thermo-syphon effects, and the best practical proportions of air cell to water space sizes. The information thus obtained has been utilized in the construction of the Bush radiators which the company is now marketing. Vertical tubes with fins are employed, the tubes being flat and of small section. They are spaced three deep from front to back, while the rows of fins are separated by vertical strips, the fins being soldered to the strips to give strength. Many advantages are claimed for the vertical tube and fin type, particularly for a thermo-syphon system, since the water is given a free and unrestricted flow in a vertical line.

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From the standpoint of racing events, the past year has been a notable one. It produced new records for various distances, brought to light a number of conspicuous drivers hitherto unknown, revived the famous Vanderbilt Cup contest, and inaugurated the now celebrated Grand Prize event in addition to various other features of minor interest. In connection with the return of the Vanderbilt race, one of the most noteworthy achievements of the year was the completion of the first section of the Long Island Motor Parkway, a cement course which is destined to play an important part in future speed events in America. Handicapped at the start by business depression, during which time many manufacturers were forced to curtail expense as far as possible, the year 1908 nevertheless has had a goodly quota of events and its racing season ended in a brilliant flourish at Savannah.

New York-Paris Race Starts.

The first race of 1908, which started on January 12, proved in many respects the most momentous as well as the longest of the year. It was 22,000 miles in length, and in order to complete it, the contestants were carried clear around the world. The New York to Paris contest created wide international interest, inasmuch as it was such a stupendous undertaking and generally declared at the outset, to be practically impossible. Few people ever thought that some nine months later two of the six starters would actually reach the French capital. Six contestants set out in the dead of winter on this wild expedition: the Thomas, representing America; a German, Prothos, an Italian, Zust, and three contestants representing France—Sizaire et Naudin, Moto Bloc and De Dion. Of these, the three former eventually reached Paris.

Florida's Annual Sandfest.

The first of the season's speed contests at reasonable distances, was the annual Ormond Beach (Fla.) meet, held March 3-6, under the auspices of the Automobile Club of America. As a sporting carnival it was a weak end to a long diminuendo, the only redeeming feature being that a few world's records were broken. Lack of sufficient entries resulted in lack of interest, and as there were no really exciting brushes or close finishes at any time, enthusiasm was almost an unknown quantity. On the first day of the meet, the late Emanuel Cedrino, driving the Fiat "Cyclone," won the initial 100 miles event for the Minneapolis trophy, driving much of the race minus two tires, when he could not make tubes stay on his front rims. His time was 1:50:20, but he fell short of the record made by Walter Clifford-Earp in 1906 by 35 minutes.

The second race on the same day, 150 miles for stock cars, was won by Louis J. Bergdoll, the Philadelphian, in his Benz, his time being 2:40:53.

If the opening day was disappointing, the second day was equally so, when the 125 miles event for "gentlemen drivers," also was placed to the credit of Bergdoll.

Cedrino Establishes a Record.

Thursday, March 5, the third effort, produced the best race of the meet, when Cedrino, in the Fiat, established a record for 256 miles and won the Automobile Club of America's trophy. His time for the distance was 3:21:27⅖, an average of 77 miles per hour. R. G. Kelsey, in the Christie car, was second in this evnt, while Maurice Bernin, who experienced tire trouble, was third with the Renault. Bernin, however, on the final day of the meet, won the 100 miles match race against S. B. Stevens in the Fiat Cyclone, and broke the world's record for the distance. His time was 1:12::56⅕, as against the mark of 1:15:40⅖ made by Clifford-Earp in the Napier in 1906.

On this occasion also, a number of mile trials against time were made; the fastest being that of Cedrino, who slid over a mile in 35 seconds flat. While the record of 0:28⅖, made by Marriott in the Stanley steamer two years before, was not touched, nevertheless a most notable performance was given by David Bruce-Brown, an amateur, who broke the old amateur record of 0.39, held by Wm. K. Vanderbilt, by covering a mile in 0:35⅕. Bernin made the next best time with the Renault in 0:39⅕.

No sooner was the meet over, than the indefatigable W. J. Morgan, who has been concerned in many southern ventures, immediately started his Jacksonville-Miami race, a personally conducted affair, in which four or five cars started. A 10 horsepower Cadillac, driven by Dr. W. N. Stinson, won this 371 miles race, C. F. Wheeler's Peerless also arriving, after it had been rescued by the winner, when stuck in a swamp 70 miles from the nearest town.

Savannah's First Road Race.

Some of those who attended the beach meet stopped over on their northbound trip at Savannah, which made its first attempt at holding a road race a few days later, on Wednesday, March 18, and the day following. A fine, smooth 18 miles circuit had been prepared for the occasion, the road well oiled and a grandstand erected. Inasmuch as the coals of the A. A. A.-A. C. A. fire were slowly kindling, and as the Ormond meet had proved a failure in many respects, under the A. C. A.'s management, the officials of the Three A's were particularly anxious to make Savannah's initial attempt a success, and in so far as the management of the affair was concerned, they were well rewarded for their pains. The first day upon which the 180 miles race for stock runabouts was run, and also the race at the same distance between two six-cylinder machines, a Stearns and a Thomas, proved a big disappointment to Savannah, as well as its visitors.

In the former, Herbert Lytle, at the wheel of an Apperson car, won in 3:35:41, beating J. B. Lorimer in the Thomas-Detroit, by more than a lap. A third starter, Zengle, in a Pennsylvania, broke a rear axle after making the fastest circuit of the race, in 18:54. In the race between the "sixes," George Salzman, in the Thomas, finished a lone race; Leland in the Stearns, breaking a connecting rod when the race was but half finished.

When Strang Achieved Fame.

The Savannahians on the following day however, saw a rattling good race. It was upon this occasion that Lewis Strang mounted in an Isotta car, rose to prominence by winning the race of 20 laps, a distance of 342 miles, in 6 hours 21 minutes 30 seconds—an average speed of 53.83 miles an hour. Close on Strang's heels in this contest was Herbert Lytle in a 50 horsepower Apperson, while Malcolm Newstetter.

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Enthusiasm hit the top notch during this race, the Governor of the State, the Mayor of Savannah, and other distinguished guests, lending no little prestige to the occasion. Practically the entire city turned out to witness the contest and so satisfactory was the race generally that it was obvious that Savannah was at once encouraged to make a strong play for a still bigger race over its magnificent course.

Briarcliff and Its Sequel.

A little more than a month later, April 24, Strang won the Briarcliff road race in the same Isotta car. This contest, held on one of the most dangerous courses ever selected for a race, made up of a series of treacherous turns and choppy hills that were none too smooth, was a surprise to every one. Many well qualified to judge had predicted that accidents would be numerous and that in all probability more than one driver would come to a sad end. From start to finish, the contestants set up a pace that forced a race with death throughout the 259 miles, but the gods were kind and there were no fatalities or bad accidents. Strang's victory was clean-cut and decisive, especially notable in that he set out from fourth position, passed those ahead of him, took the lead early and was never headed. He sent the Italian car over the 8 laps in 5:14:13⅕, at an average speed of 48 miles an hour—a speed which astounded those who were familiar with the condition of the course. Emanuel Cedrino, in a Fiat, was second, while third and fourth places were captured by American drivers in American cars. Guy Vaughan, at the wheel of a Stearns, followed close upon Cedrino's heels, and Herbert Lytle, in the Apperson entry, was fourth. The Automobile Manufacturers' Committee, principally composed of Robert Lee Morrell and T. Francis Moore, who promoted the contest, were in difficulties from the very beginning in arranging things so that the contest could start. On the day before the race, State Engineer Skene demanded that the promoters put up $4,600 to go for road repairs necessitated by the race. Skene would not even take a bond on a reliable surety company, but insisted upon cash—and he got it. All that was ever returned to Morrell was a trifle over $500. A sequel to the incident is Morrell's suit against the State official, who, Morrell claims, had no right to exact the money.

Summer Contests and Tours.

Between Briarcliff time and the first of June, particularly on Decoration Day, there were numerous hill climbing contests, a couple of track meets, together with several short endurance and reliability runs, among them, the meet at Pimlico track on May 29, during practice for which Emanuel Cedrino met with the accident which caused his death. A 300 miles road race took place at Denver, Col., on May 30, and Linn Matthewson, the driver of the Thomas Forty entry won it, the bad road conditions being responsible for the slow average time of 38 miles per hour.

On June 5, the day before ground was broken in the construction of the Long Island Motor Parkway, a series of one mile speed trials took place at Jamaica, L. I. Twenty-six fast events were run off on the Hillside avenue course and road records at the mile and kilometer distances were shattered. The fastest performance of the afternoon, was that of Harry Kilpatrick in the Vanderbilt Cup Hotchkiss car. He scored a kilometer in 24⅖ seconds in the free-for-all, which was at a rate of 90 miles an hour, while his time for the mile was 0:38⅖—a rate of 93.3 miles. George Robertson, in the Fiat Cyclone, and numerous drivers in the stock car events, made creditable showings.

July 4 was celebrated with the usual number of local holiday events, track races taking place at Elkwood Park, Long Branch, N. J., Baltimore, Md., and other places throughout the country. The interest turned from racing toward the annual Glidden tour which started from Buffalo, N. Y., on July 9.

America Wins Race to Paris.

About a week after the tour ended, word was telegraphed from abroad that the Thomas car contestant in the New York-Paris race had reached the French capital on July 30, winning the great globe-circling contest by 26 days. Although it did not reach Paris first, it was declared the winner on a 30 days allowance for time lost in attempting to reach Asia via Alaska, a plan which had to be abandoned by the Thomas crew and which the other foreign contestants did not so much as venture upon. On Saturday, August 15, the victorious car reached New York once more and was given a most enthusiastic reception. Of the six original contestants in this race, only three ever reached Europe. The French Sizaire et Naudin retired after running only 100 miles two days after the start; the French Moto Bloc retired in Iowa after traveling 1,300 miles, while the third French entry, the De Dion got as far as Vladivostok, Siberia, before dropping out of sight. The German Prothos car, after having been rebuilt several times en route, succeeded in arriving at Paris first, four days ahead of the Thomas (then driven by George Schuster). Having been shipped by rail for a portion of the distance, the time allowance set the Prothos back to second place. Some weeks later, the Italian Zust entry arrived at the finish, after much difficulty.

Considerable interest was aroused over the Lowell, Mass., Labor Day road race, on September 7. Here it was that Lewis Strang scored his third triumph by piloting J. H. Tyson's Briarcliff Isotta to victory. In a field of seven starters, Strang took the lead in the very first lap and never relinquished it, driving the 24 laps, or 254 miles in 4 hours 42 minutes 35 seconds. Banking on Michelin tires, as he had done in his two previous victories at Savannah and Briarcliff, he had no tire trouble, a remarkable characteristic of his lucky driving in all three of these events. At Lowell, Strang beat his nearest competitor, H. F. Grant, in an American Locomotive, by more than 1½ hours. William Bourque, in a Knox, was third.

Two days previous to the Lowell event, a race meet took place at St. Paul, Minn., and Ralph De Palma's performance there was one that must not be overlooked. Driving the Fiat 'Cyclone" around the mile track in 51 seconds flat, he broke all world's records for the circular mile, lowering the 52 seconds mark held by Walter Christie and made on the same course.

The A. A. A. and A. C. A. War.

Around this time, the "flare-up" between the American Automobile Association and the Automobile Club of America was reaching serious proportions. How the failure of the former to recognize the Ostend rules in completing the arrangements for the forthcoming Vanderbilt race, how the club decided to hold a second and spite race under the international rules and especially for the foreign contingent, and how there came from the conflict the famous "treaty of peace" which gave to the A. C. A. the control of all "international" competitions, hardly need be recapitulated here. The organization of the Motor Racing Association, and its announcement that it was going to control local racing around New York City, and that it contemplated holding a 24 hours race at Brighton Beach, without asking a sanction of the A. A. A., caused a little flurry of excitement. The Motor Racing Association did hold its outlaw 24 hours race at Brighton on September 12, and Ralph Mulford and Harry Cobe alternating at the wheel of a Lozier car, won it. Then when, a few days later, the Three A's retired from the field and relinquished the control of international races to the A. C. A., the Motor Racing Association no longer wanted to play "outlaw," but desiring to run another 24 hours race on October 2 and 3, applied to the A. C. A. for an "international" sanction and got it.

It was in this twice-around-the-clock contest that George Robertson began his winning streak, when alternating with Frank Lescault at the wheel of a Simplex, he reeled off 1,177 miles, breaking all records for dirt tracks with a stock car. In this race the Lozier came in for second honors and the Thomas for third.

Opening of the Motor Parkway.

On Saturday, October 10, two big racing events occurred—the Long Island Sweepstakes, which served to open the new Motor Parkway, and the big road race in Fairmount Park, Philadelphia, under the Quaker City Motor Club's auspices. Herbert Lytle, in an Isotta, was the start of the

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Sweepstakes event; winning the principal race, 234.6 miles in 3.39:10. Strang, driving a Renault, was a close second. Events for the lighter cars in the four other classes were won respectively by H. Hughes (Allen-Kingston); W. H. Sharp (Sharp-Arrow); W. R. Burns (Chalmers-Detroit), and Hugh Easter (Buick). This race gave some idea of what was to be expected in the way of speed at the Vanderbilt Cup contest on the 24th .

At the Philadelphia 200 miles race, which was the wind-up of the annual Founders' Week celebration, George Robertson in a stock Locomobile, won the chief laurels and lifted the $2,000 prize cup, when he got over the 25 laps in 4:02:30. Cyrus Patschke in a six-cylinder Acme, gained second honors, and Ralph Mulford, the Lozier pilot, third. This race, which was remarkable inasmuch as it was held in Fairmount Park, was so successfully run that it is expected to become part of the annual celebration at that city in the future.

Vanderbilt Cup Race Revives.

Then came the Vanderbilt Cup contest on October 24, which had been awaited for two long years and in it Robertson, driving the 1906 Locomobile Vanderbilt racer, added the third big victory to his string. Robertson drove a fast and exciting race, covering the eleven lapped circuit, a distance of 258.06 miles in 4 hours, 48⅕ seconds. Lytle, in an Isotta, drove in second, but was disqualified a couple of months later on account of the car being over weight. Second place would undoubtedly have been awarded to James Florida in the second Locomobile, had the race not been officially called off before he crossed the tape after colliding with a touring car at the finish.

Wagner Wins the Grand Prize.

As the climax of 1908 racing, came what was beyond all doubt, the biggest contest of the year—the Grand Prize race at Savannah. The memories of this notable contest promoted by the Automobile Club of America and the Savannah Automobile Club, are still fresh in mind. The international light car curtain raiser of the Georgia event was an interesting race, Hilliard in the little Lancia "Lampo," proving the victor in the 196 miles flyer over the special 9.8 miles course in 3 hours 43 minutes 43 seconds. When on the following day, Wagner, in the Italian Fiat, fought out the struggle for the Grand Prize with Hemery in the Benz, and the former won by the small margin of 56⅖ seconds, the throngs who witnessed the victory and the millions who read about it that night, were satisfied that the closing contest of the racing year was a notable one. Wagner's time for the 400.02 miles was 6:10:31⅗, a rate of 65.1 miles per hour—remarkable in view of the several hundred turns encountered on the winding course. Nazzaro, in another Fiat, followed Hemery into third place; Hanriot, in a Benz, was fourth, and Hautvast, mounted in a Bayard-Clement, fifth. The only regretable feature of the race was that the American entrants could not have made a better showing. Of these, Seymour, in the Simplex, who finished eleventh, made the best time. The fastest lap of the contest was made by Ralph De Palma, the American driver of the third Fiat entry, who covered the second and seventh rounds of the 25.13 miles course in 21:36.

Many Local Racemeets.

Throughout the year the distribution of local events throughout the country has been more uniform than ever before, the middle and western sections getting fully as good a share of contests as the East. How much of this has been due to the tireless activities of the ubiquitous Barney Oldfield, who with Walter Christie and Charles Searles has overlooked all previous announcements of retirement and steadfastly turned his face toward the fleshpots that hang within the precincts of county fairs, cannot be told. His movements have been often too rapid and abrupt to be overtaken by the pen of the chronicler. Be that as it may, it is perhaps significant of the widespread interest in automobile contests and of the tendencies in various localities that the last track meet of 1908 should have been held at Tanforan Park, San Francisco, Cal., and the last endurance contest, at Worcester, Mass., while New Year's Day is programmed for a 24 hours race at Ascot Park, Los Angeles, Cal., and the start of a two days' endurance run from Philadelphia, Pa., to Wilkes-Barre and return.

Twenty Entries for Quaker City Run.

That considerable interest is being taken in the Quaker City Motor Club's annual two days' endurance and reliability run, is evidenced by the fact that no less than 20 entries have been made. The contest to Wilkes-Barre and return, which is to start in the early hours of January 1, is to be a strict and exacting affair and not essentially a pleasure outing. The schedule to be maintained has been set at 20 miles per hour, although this may be reduced somewhat, on account of the difficult condition that will be encountered on the road, especially if the snow is at all deep. A rigid technical committee will endeavor to eliminate as many cars as possible from the "clean score" list when penalizations are warranted and the general opinion of those connected with the run is that the list of perfect contestants will be very small, when the cars return to Philadelphia on the following day.

The route starts out from the Club's headquarters on Broad street and is exactly the same as that of the Glidden tour last summer as far as Delaware Water Gap, then it branches off and runs to Stroudsburg, through the Poconos to Wilkes-Barre. The first control on the tour is to be at Sellersville, 33 miles out; the second is at Allentown, 54 miles from the starting point. From Allentown, where the checking station is at the Hotel Allen, the run goes straight through Bethlehem, Easton, Martin's Creek, Portland and the Delaware Water Gap to Stroudsburg, where the third control is at the Hotel Fulmer, 104 miles. From Stroudsburg to Wilkes-Barre one of the most beautiful parts of the whole tour is encountered and in parts the roads are splendid, there being 15 miles of State road through the Pocono Mountains, which is the finest on the run in the whole 300 miles. The run from Stroudsburg to Wilkes-Barre, the fourth control, is at once about as difficult and at the same time as pleasant as any part of the tour. In good weather the roads through this region are all that could be desired, but in the dead of winter they are very likely to be hard traveling, whether it is wet or dry.

The hardest and really the only dangerous section along the whole route is from Hazleton to Hamburg, a distance of 36 miles through roads so narrow that two cars cannot pass upon them in many long stretches. Should any contestants break down on this part of the route, a complete tie-up of the whole line is liable to result and a few of the drivers will doubtless wax petulant.

Briarcliff Racing Committee Organizes.

Another step was made in the troublesome practice of clearing the Briarcliff road race situation, when the racing committee met and elected permanent officers on Monday last, 28th inst. Percy Owen was made chairman and C. F. Wyckoff, who has been acting in this capacity temporarily, was elected vice-chairman. The Wagner-Field Company, composed of Fred J. Wagner and Russell Field, was appointed permanent secretary. In place of the suggested audit committee, a finance committee was chosen, consisting of three members—S. B. Bowman, J. S. Josephs and H. A. Lozier. Chairman Owen assisted greatly in electing himself, inasmuch as he, with E. Rand Hollander and H. A. Lozier, composed the nominating committee. Of the eleven members present at the meeting, seven are said to have announced that they would positively enter the race next May, for which a course is still wanted.

Women's Inter-City Run Postponed.

The Woman's Automobile Club, which so unexpectedly made its appearance a few days ago, near Columbus Circle, New York, did not engage in the heralded reliability run to Philadelphia and return on Tuesday and Wednesday last. The mere men who are engineering the affair decided that there was too much snow on the road for comfortable driving and in consequence postponed the event until January 11-12. Meanwhile, and in response to inquiries, the club's press bureau is authority for the statement that Mrs. Alice H. Ramsey was elected president of the club on December 11 and that other officials probably will be chosen this week.

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FACTORS OF FIRST COST OF CARS

The Proportions in Which the Maker's Charges are Divided Up—Tires the Most Costly Element.

Various ideas are entertained by motorists and even by those directly connected with the trade, but more or less unfamiliar with the manufacturing end of the business as to how the first cost of a car is constituted and in what proportion the makers' charges are divided up. It is safe to say, however, that it would scarcely be expected that the item of tire cost would rise to as great a proportion as a fifth of the total original worth of the material embodied in the finished product. That such is the case, in foreign practice at least, is shown in a resume presented by the Autocar.

"As a majority of makes of motor cars are now being marketed at a normal value, and the buying public appear to be seeking after cheap cars rather than expensive ones, it may be interesting to classify the heads under which the total value of a motor car is made up," he remarks. "It should be noted that in the present instance the cost of experiments, tools, patterns, etc., necessary to establish the actual type of car supplied by a manufacturer, is not taken into consideration, but a model is dealt with the initial costs in the production of which have been written off by virtue of its standardization and popularity.

"On a powerful car, which has a small clientele, and, of course, a comparatively limited output, these items are of considerable importance. In the cost of a motor car one has to consider:

"The raw material.

"The workmanship.

"The genral expenses and normal profit of the manufacturers and retailers.

"The general expenses and normal profit made the following table showing for their principal type of car, viz., the 14 horsepower chainless, the cost of raw material and parts, which must be purchased before commencing to manufacture:

Parts	Per cent. of cost.
Tires	21.7
Steel	10.6
Aluminum castings	9.2
Axles	8.4
Rubber tubing, aprons, nuts, bolts, etc.	8.2
Magneto and fittings	8.2
Ball bearings	7.4
Radiator	5.4
Chassis	3.8
Bronze castings	3.4
Forgings	2.8
Springs	2.6
Cast iron	1.8
Steel tubing	1.5
Paint work	1.4
Lubricating materials	1.4
Wood work	1.2
	100.0

"From an examination of this table, one can deduce some very interesting points," the author continues. "The proportion of tire cost is somewhat astonishing, and it will therefore be realized that the first question to be taken into consideration is that of the weight of a car, this weight being the criterion of the initial cost of tires as well as of their upkeep afterwards. The second item of cost is steel. In a car of the 14 horsepower Germain type, 1,300 pounds of steel of various types and qualities in the rough are required. A penny saved in the cost of each pound would therefore reduce the cost by £ 8s. 4d. ($26.30). The price of steel can vary from a few pence per pound to 2s. (50 cents) and more per pound, and one can imagine what difference it can make in the cost of a car to use good or common steel.

"By replacing aluminum with cast steel or iron, a new economy would be realized, but again the important question of weight would intervene, and the economy would only be for the manufacturer.

"Then comes the front axle—a point on which rests the safety of the occupants of the car. A good axle costs anything up to £20 ($100), some racing axles costing £70 ($350) or more, whereas a cheap axle can be bought for £2 or £3 ($10 or $15). To all outward appearances they are identical, and nobody would be able to recognize the good one from the cheap one by mere inspection.

"An expensive magneto and a good radiator can be replaced by common and cheap types, but with this reduction in price there would be a proportional increase of possible breakdown.

"The sundries and other parts come to a more moderate proportion, and certainly an economy could be realized on most of this material. After the material comes the cost of workmen's time in manufacturing. Of course, absolute standardization is presupposed, without which one cannot have a perfect motor car. With a well-equipped works, well-designed tools, and the cost of labor not excessive, the men's time expended on a chassis amounts to about 10 per cent. of its value.

"What is more expensive and important is the case-hardening and tempering, and then the necessary rectification of all the working parts. If these operations are not made, which is often the case in cheap cars, the machines at the beginning would certainly look identical, and the cheap one would run as well as, if not better and more silently than, a car more conscientiously made, but after a time all the soft moving parts would start to wear, and then the car would rapidly go to pieces, and it would be impossible to have it repaired. Case-hardening, tempering, and rectification are expensive operations, but they are the only guarantees against wear and tear.

"The general expenses, advertisement, and normal trade profit which then come add to the price of a car. There are generally in good firms in proprotion to amount of output, and are points which it is more difficult to account for. It is not surprising to find, therefore, that two cars absolutely identical to outward appearances, and running equally well, may vary in value and price up to about 40 per cent."

Weight of the Car's Equipment.

Some little time ago considerable stir was created abroad by the publication of an article showing the relative weights of various accessories and the way in which they were distributed about the average touring car. Up to this time, no effort has been made by the American manufacturers to show the corresponding figures for local practice, nor how with good judgment in design a properly and amply equipped car may be put out without being overloaded in this respect. Figures just issued by the George N. Pierce Co., as covering the standard practice in equipping their cars, however, reveal that the total equipment, including supplies totals 581 pounds, or more than the equivalent of two passengers' weight. This equipment, however, is more complete than the average, so that the total amount probably exceeds that found in ordinary practice.

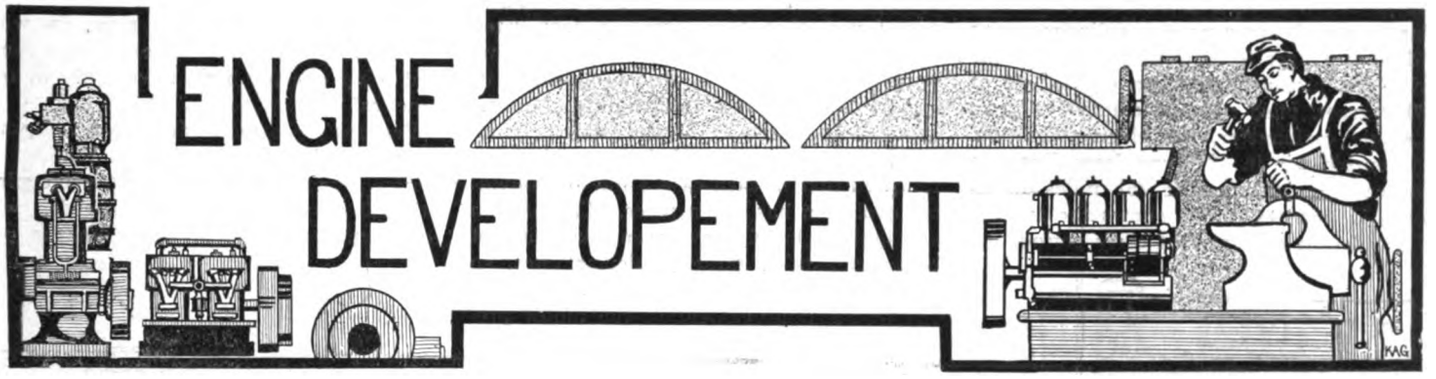
Among the details of the equipment not always found in cars of stock construction are included the following, which form a regular part of the Pierce inventory: Shock absorbers, 28 pounds; odometer and fittings, 2 pounds; footrest, 7 pounds; robe rail and brackets, 5 pounds; dash cabinets, 3 pounds; luggage carrier in rear, 17 pounds; tool box in rear under frame, 26 pounds; sprag, 12 pounds; rubber bumpers, 5 pounds; rear axle straps, 2 pounds; gasolene gauge, 1 pound. Total, 124 pounds.

In addition to this with every Pierce Arrow is given tools and spare parts amounting to 55 pounds, making the total 179 pounds.

Aside from the actual mechanism and body of the car there are extras such as cape top, 138 pounds, and the glass front, 44 pounds that count in the actual weight of the car. Water, oil, gasolene and grease add another 220 pounds, making a total with the accessories of 581 pounds.

The ignition outfit of a Pierce Arrow adds a further element to the total weight. Two separate systems are used, a high tension magneto and storage batteries, working through two sets of spark plugs. The magneto system weighs 32 pounds and the battery system 70 pounds, or 102 pounds in all. While the battery system is a convenience, it could under certain circumstances be dispensed with and 70 pounds of weight saved. Aside from the mechanical parts of the car are the lamps, lamp-brackets and horn, weighing 87 pounds, which with the batteries make 157 pounds. This added to the total of 581 pounds for accessories and supplies give a total of 738 pounds of the total weight of the car in running condition.

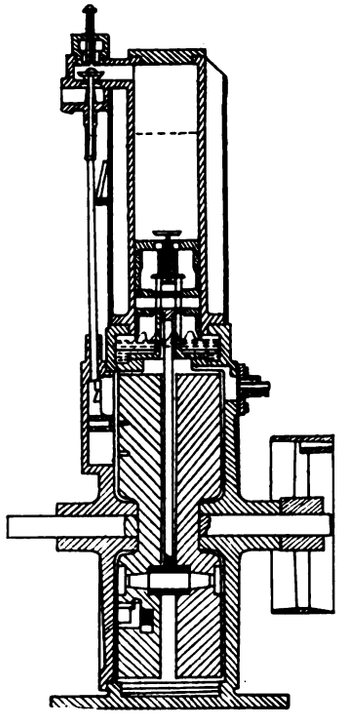
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It is a long story, which tells the full history of the development of the internal combustion engine from its earliest beginning to the present day. But the most interesting and important portion of it is that which deals with the evolution of the type commonly known as the automobile motor. This is so because in that type is presented the lightest and most supple form of gas engine known, one which is capable of assuming varying loads under all sorts of service conditions and of doing so with fuels which though nominally uniform in quality actually vary not a little in thermal value and consistency.

Outwardly, the automobile engine may be said to have undergone but slight modification during the 24 years since Gottlieb Daimler produced the first really successful type of high speed motor. The present day types, working upon the same Otto cycle and possessing exactly the same organs actuated in almost exactly the same manner appear superficially, to reveal but slight marks of progress save that they are larger and that they manifest a higher degree of flexibility. That these two points involve the secret of automobile engine development, of course escapes the casual observer. As a matter of fact, practically all efforts at perfecting this type of engine have involved one of these two considerations. Questions of silence in operation, of reliability, of weight to power ratio, and of efficiency have been subordinated to them in the evolution of the automobile type of motor.

Daimler's original engine, which was patented in Germany on April 3, 1885, differed from the most prevalent of present types mainly in that it was air-cooled. This function was secured by surrounding the cylinder with a sleeve of thin metal, separated from it by a liberal air space, and directing a current of air upward through it by the aid of a fan attached to the crank case. Other characteristics of the motor may be observed from the accompanying illustration which shows that the inlet valve was automatic in action and that a certain amount of air was admitted to the cylinder during the suction stroke through a supplementary valve mounted in the piston and admitting air through the crank case. This feature has since become obsolete along with the method of valve actuation and of governing. The exhaust valve, it will be observed, was operated by a feather carried on the lower end of the tappet rod and traveling in a cam groove cut in the face of one of the two enclosed fly wheels. Governing was secured by causing the feather to travel in an approximately circular path during one or more cycles, thus preventing the exhaust valve from opening. The later



EARLY DAIMLER MOTOR

Daimler engines differed in this point, a small trip lever being made to cause the tappet to miss engagement with the valve stem when governing was required, the action otherwise being the same. Though this motor had but one cylinder, a later type had two, placed at an angle and thus constituting the first example of "V" construction.

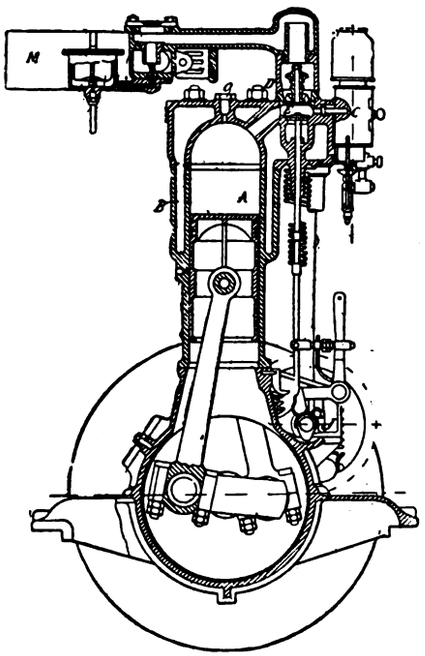
Although Daimler's service to the industry in embryo was a useful one, and he is beyond a doubt entitled to all the credit which he commonly receives as the "Father of the Automobile," one of his early associates, William Maybach, also is entitled to no small share of credit for the development of the float feed and spray principle of carburation. Daimler's method of carburetting the charge for his engine had been to draw a certain amount of air up through a quantity of the liquid fuel thus gassifying and carburetting it by actual contact. But his bubbling or filtering carburetter failed to produce wholly successful results. Maybach introduced the method of float regulation of the supply now in constant and successful use, as a means of accomplishing a direct atomization of the fuel by injecting it into a current of air. Crude as was his first attempt, the present day carburetters, with perhaps one exception, in the case of the so-called "puddle" type, follow its lead.

In the early types of Phoenix-Daimler engines, which were made by the firm of Panhard and Lavassor under license from Daimler's company, considerable strides were made. The two-cylinder type was an early feature, following the plan of Daimler's second attempt at cylinder multiplication with the cylinders parallel and acting on a 180° crank. Here, water cooling, the spherical combustion chamber, the exhaust cutout governor and a number of other features were improved upon until the motor became practically what it has remained ever since with four noteworthy exceptions. The Maybach carburetter was supplanted by the Phoenix and later by the Longuemere, the exhaust governor was reluctantly abolished in favor of the throttle type, hot tube ignition gave way to the electric spark, and finally, mechanical inlet valves were adopted. It is a remarkable fact, however, that despite the retention of some of these features long after other constructors had given them up, the Panhard motors, many of them ten or a dozen years old, continue in service to-day, and on a basis of piston displacement, continue to compare favorably with many others of more modern attainments.

Significant as being the prototype of a number of successful engines of later date, and, indeed, of the entire type which up to within four or five years was considered distinctly the American style of engine formation, the construction of the Henroid

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motor should be considered. As shown in the picture it is seen to consist of the regular opposed arrangement cylinders with radiating flanges formed integrally with the cylinders, pistons acting on cranks set at 180 degrees, push rod and cam valve gear, a single carburetter, the electric ignition. A Henroid car in 1899 ran from Paris to Bordeaux, a distance of 351 miles in 19 hours 15 minutes, which shows the success of the design even at that early period.



PHOENIX-DAIMLER MOTOR

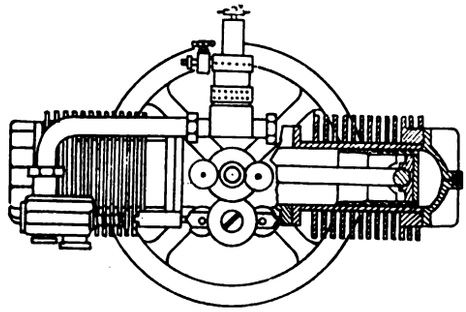
Paralleling the development of the Panhard motor, which must be considered in many respects the first milestone in automobile development, a number of other constructors were at work upon engines which later achieved more or less prominence in the foreign field. Carl Benz, in the same year as Daimler, patented his first gasolene-driven motorcycle. His later activities were carried out contemporaneously with those of Peugeot, De Dion and Mors.

In America, practical automobile motors did not begin to materialize until the early 90's, when, in 1893, Elwood Haynes first commenced work on the automobile idea, which in 1894 was crystalized in his first car, built for him by the Apperson Brothers, and graced by a single-cylinder vertical two-cycle motor of 1 horsepower. The following year, 1895, was marked by the appearance of the first double-opposed automobile motor, built by the Appersons; the appearance of the first car built by Charles E. Duryea, and by the granting of the Selden Patent, which since has figured so largely in the industry.

Without attempting to trace further the progress of evolution from the standpoint of the pioneers and their efforts individually, it may be sufficient to follow roughly the steps which were taken in arriving at the perfection of the present types. In studying the numerous difficulties encountered by the experimenters of the later 80's it was found that they readily segregated themselves into such shortcomings as improper carburation, improper ignition, irregular torque and inflexibility. Consequently, and because of the extremely involved nature of each of these problems, it followed that in each case a line of individual evolution has taken place. Carburation and ignition laterly have been taken care of by specialists in these particular lines, so that the engine designer himself has been left to the improvement of the motor proper, while the organs in question have come to be regarded as auxiliaries.

From the bubbling carburetter through the various types of surface vaporizer in which gasification was induced by ordinary evaporation, to the first of the spray types was a big step progressively. But it soon was learned that the mere spraying of the liquid fuel into a stream of air on its way to the engine was not all that was required. The proportions of gas and air must be very delicately adjusted, it was found. Furthermore, it developed that the proportions must be varied in accordance with different operating conditions in the engine, such as differences in load, speed, and even in accordance with varying atmospheric conditions, to a limited extent. Hence the appearance of various methods of compensation, as it came to be known, by means of which the natural tendencies to unsatisfactory working of the simple jet were counteracted with greater or less success. It was not until 1903, however, that Arthur Krebs invented and patented the diaphragm system of regulation which proved so successful.

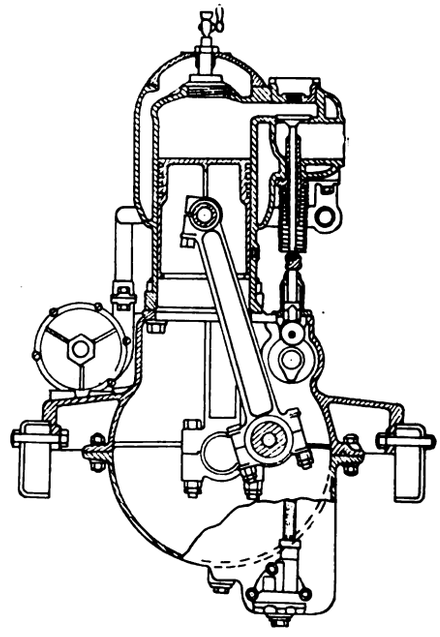
In this connection it may be observed that no part of the motor has undergone a wider variety of experiment than the carburetter. Countless methods of regulation have been tried and many ingenious systems of construction attempted in an effort



HENROID MOTOR

to secure the delivery of a uniform quality of gas irrespective of running conditions. The float regulated spray or jet always has proved the most popular. Its regulation has been accomplished automatically and by means of the varying suction or by the varying pressure of the water circulating through the coiling system, by means of fly-ball governors manually or by fixed adjustment according to the theories of the experimenter. One of its most interesting forms is the multiple jet type, in which the idea of a little carburetter for low speeds and a big one for high, is carried out on a practical scale.

Perhaps the most significant development of recent date in this line is that of the puddle type, in which the jet principle is utilized only at very high speeds, while for starting and at low speeds what is practically a reversion to the old surface type is employed. As used in several different instruments, it has proved remarkably effective with the advantage very unusual in carburetters, that it renders starting easy and certain without the necessity of resorting to excessive "flooding," throttling of the air supply or otherwise upsetting the regular action of the device.



MODERN AMERICAN TYPE

Turning to the subject of ignition, the trials of the early experimenters with hot tube and flame devices contrast oddly with the successes of modern ignition specialists, though the former had the unquestionable advantage of simplicity in their favor. The complexities of the modern systems, however, lie more on the side of theory than of practice as known to the motorist who, where the modern, high tension type of magneto is employed rarely has occasion to remember what ignition is, whereas the hardy motorists of earlier days were required to be expert electricians before they could begin even to keep their machines in running trim.

The plain spark coil of the Rhumkorf type together with mechanical make and break on the primary circuit were employed in the earlier systems, improvements in the shape of vibrator coils, storage batteries, the transient dynamo, and finally the magneto, being introduced in turn. Methods of wir-

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ing, the development of the industry of spark plug production and finally the simplification of the magneto systems have combined to do away with the old ignition difficulties very largely. The make and break system, though not as generally employed to-day as it was at one time predicted it would be, still possesses a number of staunch adherents and yields a degree of reliability in service which is remarkable.

In connection with the obvious need of higher powers, it early became evident that the desideratum of increased flexibility in the motor might be obtained to a degree at least, by increasing the number of cylinders. Improvements in carburation and ignition brought about changes for the better, but not until the four-cylinder and later the six-cylinder motor came into use, did the ideal of flexibility begin to be attained in any really notable degree.

Coincident with these developments the motor proper was undergoing wonderful changes of the sort which, for the most part make little or no appeal to the eye. The position of the spark plugs, the arrangement of the valves, the shape of the combination chamber, relation of bore to stroke, rate of piston speed, design of the crank shaft and fly wheel, and even the design and arrangement of the valve gear, all represent problems which have had to be studied out in detail, and largely with the aid of actual experiment.

In this connection, the importance of the improvements in lubrication cannot be emphasized too strongly. From the old, simple method of splash lubrication, or, in the case of the early Daimler motor, the use of an oil well into which the lower end of the piston dipped at each stroke, down through the various intermediate steps to the most highly developed and expensive form in use to-day in which the oil is circulated through the hollow crank shaft to the various bearings under regulated pressure, is a long stride.

Methods of cooling both by air and water have been wrought out with the same degree of patience which has been employed in every other case, the transition from the early chain driven pumps to the centrifugal gear driven devices of the present day being only one instance of the progress which has been made. The use of new and improved materials of construction, the readjustment of the bearings, fittings and methods of mounting which have followed in their train; the adoption of methods of interchangeable production with their structural benefits as well as their economies; and the establishment of fixed ideas as to the proper relation between the weight of the vehicle to be propelled and the power of the motor as a result of which the average motor no longer is apt to be overtaxed, all have combined to produce the old-time requirement of reliability, silence and durability in service, which for a while seemed actually unattainable to a really practical degree.

HOW SPRINGS NEUTRALIZE SHOCK

Principles that Affect the Suspension System—Their Operation in Distributing Stresses of Motion.

Though it is sometimes charged that even automobile designers as a class know very little about spring design, and are forced to rely upon the superior technical knowledge of the spring maker himself in securing for their machines the proper sort of equipment, it is equally true, if less commonly recognized, that the average user

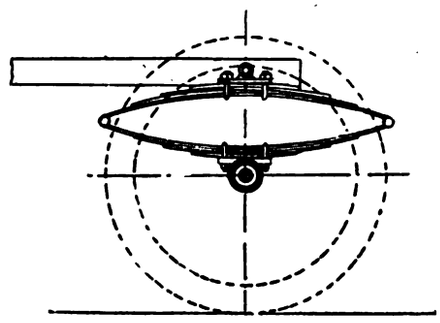


Fig. 1

has but small comprehension of what the requirements of the spring suspension are, even in the most elementary degree. It is probably true that of the many thousands of users who are constantly familiar with the action of the springs, only a small proportion actually understand how the suspension acts in distributing the stresses which exist between the body and the wheels, and between the body and the

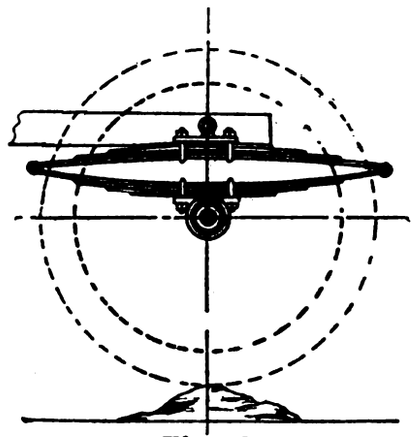


Fig. 2

ground. In condensed and primer form, the Co-Operator, which is the periodical exponent of the Maxwell-Briscoe Motor Co., explains what these actions and reactions are, and how they are absorbed by some of the various types of suspension in common use.

"It is a common error to suppose that the spring serves merely the purpose of absorbing the shocks coming from the load above the wheels," remarks the authority in question. "It is just as effectual in neutralizing the shocks coming from the running gear and forms, in fact, a common center in which the jolting produced by the inequalities of the road surface find their adjustment.

"The springs of a vehicle moving along on a level road will be, as shown in Fig. 1, the amount of compression being proportionate to the load carried. If the inequalities of the road be only slight the opening and closing of the springs will compensate for the bumps and hollows and the load will travel substantially in a straight line. When a bump is encountered, however, the inertia of the load will resist the tendency of the vehicle to raise the load and this force expended in altering the vehicle's motion causes the spring to close with a consequent absorption of the shock that otherwise would be imparted to the vehicle.

"Fig. 2 illustrates how the closing of the spring practically permits the load to travel in the same horizontal direction as before, a result brought about by the compensating action of the spring that has absorbed the rise of the wheel in mounting a road obstruction.

"Any material that is highly elastic—capable of considerable distortion upon application of force, and certain to return to its original form upon being relieved of the influence of the force that distorted it—is suitable for spring construction.

"Tempered steel, being the most elastic of all metals, furnishes the most suitable material for automobile springs and is practically the only metal used for this purpose. The spring almost universally used in automobile construction is the so-called laminated spring, consisting of several thin laminae, leaves or blades which are fastened at their middle to the axle and support the vehicle at their ends. As a rule the longest of the leaves is fastened to the vehicle, while a plurality of successively shorter leaves are used to reinforce the longest leaf as the flexion increases. The commonest form of automobile spring, one that is used also extensively in railroad construction and in horse-drawn transportation is the half-elliptic spring shown in Fig. 3. As a rule the axle is attached to the center of the spring and the load is carried on the two ends. When made of proper material this spring gives most satisfactory results, combining flexibility with sufficient rigidity to transform road shocks into a soft, undulating motion.

"The inverted half-elliptic spring is illustrated in Fig. 4. Used on motor trucks and on touring cars of more than ordinary weight it is generally utilized in combination with other springs.

The full- elliptic spring—Fig. 5—is used more extensively in horse-drawn vehicles and on runabouts of light weight, where in view of the lighter loads carried it gives excellent service. Though the full-elliptic

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spring has a greater range of motion than the half-elliptic spring it is considered of less value in railroad service and on heavier automobiles, chiefly on account of the unavoidable lateral motion that causes the load to rock from side to side.

"In Fig. 6 is shown the three-quarter-elliptic spring which constitutes simply a half-elliptic spring with a quarter-elliptic spring supporting it, the latter taking the place of the more customary spring horn.

"Well designed springs . . . . . are built up of thin, broad leaves, of a number that is sufficient to give ample strength. Besides the length between the points of attachment, the number of the leaves and their width, thickness, and the quality of



Fig. 3

the steel determine the efficiency of a spring as a shock equalizer. It is easy to see that thin leaves will bend and return to their former shape more readily than thick leaves; for this reason it is customary to multiply the number of leaves rather than to increase the thickness of the individual blades.

"The curvature of the spring leaves should be the arc of a circle, since in this manner the longer and shorter leaves will

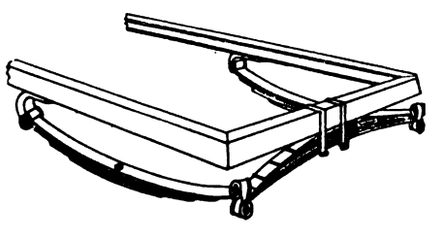


Fig. 4

fit closely upon one another and bend in either direction without leaving gaps between any two leaves. If such gaps are left the different leaves do not remain in contact throughout their full length and the danger of breakage will be imminent. A half-elliptic spring of faulty design is shown, extended, in Fig. 7, where the unequal curvature of the leaves will be seen.

"To prevent the leaves from separating in case of toss, clips are passed over them, as is seen in Fig. 8, and a bolt is passed through the center of all the leaves, not as a means of fastening the spring to the axle, but to prevent the laminae from sliding away from each other.

"Since when the wheel passes over an obstruction the rise of the axle necessarily lengthens the springs the latter are fastened to the frame by means of shackles. . . . . If, for instance, a spring fastened in the manner shown in Fig. 9, straightens out on mounting an obstruction it is inevitable that the load is thrown upward, while on the other hand if the shackles work under the ends of the spring any jolt imparted to the wheels causes the load to fall, with a consequent reduction in the loss of mechanical energy. . . . .

"A properly designed spring is the result of much experimenting, it being im-



Fig. 5

possible to use the same kind of spring on cars differing in weight, wheelbase and other features. Even with all these factors settled it is no easy matter to construct a spring that will support a vehicle and ride as well with one or two passengers as it will with the full quota of five occupants.

"Like many other parts of the automobile the spring comes in for its fair share

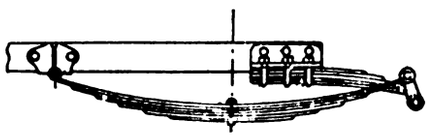


Fig. 6

of abuse, and many breakages of springs might be avoided could the driver be prevailed upon to pass over holes, ruts and ditches at a somewhat slower gait than is often done. As a general rule a spring does not break because the weight of the car bears down upon it with too great a force, but it gives way on the rebound, when the segments of the springs become



Fig. 7

separated and cease to support one another—a condition illustrated in Fig. 7."

One frequent cause of breakage of springs, the article goes on to recite, arises from the neglect of owners to look over their spring clips occasionally and draw up the nuts which hold them upon their beds. Any relaxation of the tension of these nuts, must result in the loosening of the binding



Fig. 8

which they exert upon the spring centers bringing about a tendency for them to bend upward as shown to an exagerated extent in Fig. 10. Frequent inspection of all the spring fittings, of course, tends to eliminate any and all troubles which might emanate from this or kindred sources.

"In a well balanced automobile," the article concludes, "it is necessary that the springs be mated, that is of nearly equal resiliency all around. Yet is it Maxwell practice to have the right hand springs just a trifle stiffer than those supporting the left side. The practicality of this scheme is seen in the fact that tools, extra tires and other accessories usually are carried on the right side of the car. The right side also carries the weight of the driver when the car travels without passengers and proper balance is restored by selecting slightly stiffer springs for the right side.

"To judge the efficiency of springs by

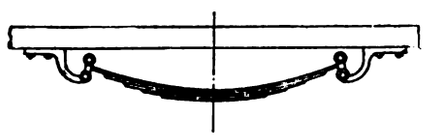


Fig. 9

guess work or crude means is impossible. In consequence Maxwell springs are tested by a novel contrivance designed by J. D. Maxwell for the purpose. This machine . . . . consists of a rectangular platform bearing inverted spring hangers. The shackles bear upon knife edges instead of upon the usual bolts. In the testing of springs the platform is raised by hydraulic pressure until the spring is opened a certain pre-determined distance. At this distance the pressure which is read on the graduated scale beam, must conform to a

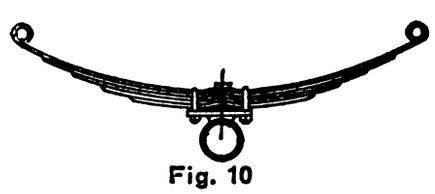


Fig. 10

certain standard with regard to each car. For instance, the springs used on the four-cylinder 30 horsepower model "D" are opened 3 inches while supporting a load of approximately 650 pounds."

Squeaks Call for Investigation.

Squeaks should be avoided in cars of all sizes, types and vintages, but most of all in new cars, and whenever encountered, should be followed out to their source and stopped with religious zeal. As a matter of fact the squeaks which are most apt to develop in new cars are those which come from parts which are stiff from being newly assembled and painted, arising mostly from reluctant springs and joints which are not properly secured. At the same time, they are as needless as they are annoying, and as they sometimes point to errors in construction, they should be traced out at once. Squeaks in cars which have been used for some little time always are important to locate and eradicate, as they arise from parts which are in need of lubrication.

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WASHINGTON WANTS GOOD ROADS

Movement to Amend the State Constitution to Permit Issue of Bonds—$20,000,000 the Sum to be Named.

Members of the legislative committee of the State Good Roads Association of Washington are planning to submit a proposition to the Legislature to amend the Constitution, authorizing the State to issue bonds of $20,000,000 for State highway improvement. The purpose is to complete as rapidly as possible the various road projects now under way. If the bond issue meets with opposition the Legislature will be urged to increase the levy for the highway fund to one mill.

When the Highway Commission was created a public highway fund was established to be kept up by a direct tax levy, the levy being fixed at one-fourth of a mill. The last Legislature increased this to one-half a mill, and a revenue of $132,553 for 1907 and $286,536 for 1908 resulted from this scurce. The estimated revenue for 1909 is $374,296. From this amount the last Legislature appropriated $225,000 for State roads, and it is estimated that this sum will hardly be sufficient to complete the contracts alread let, although there will be but a small deficiency. The State now has 13 road projects.

Under the present plan of making appropriations it would take 24 years to complete the road work on the surveys which have already been made, without considering improvements and repairs. It is also estimated that if the $20,000,000 bond issue were made it is doubtful if it could be expended judiciously in much less time.

Chauffeur Becomes a Legislator.

Just how a chauffeur, who is privileged to make his own laws to some extent, will act in the matter of speed control and good roads legislation, remains to be seen when Representative "Tom" Davis takes his seat in the Massachusetts Legislature on the first of the year. Davis was formerly employed by the Matheson Automobile Company as a tester and in other capacities and later went with a private family as a chauffeur. Not long ago he quit work to make an effort at breaking into the Legislature and was beaten the first time he ran for office, two years ago, by 40 votes. This election he threw in his high speed and won handily in the stretch. For the past 16 years he has been a resident of Holyoke, which city he will represent.

Detroit Proposes to Limit Light.

In Detroit, Mich., the common council is wrestling with a proposed ordinance limiting the candle power of motor car headlights. At just what degree a light shall be declared illegally luminous and blinding to other occupants of the city's highways, is the point that is puzzling the aldermen, and the corporation counsel is conducting a number of experiments with several makes and models of lamps to ascertain just how much candle power they develop. In view of the fact that the ordinance provides for a fine not to exceed $500 or imprisonment for not more than six months, as a penalty for each violation, just where to draw the line is an important feature.

Bridge Roadway for Automobiles.

In view of the fact that the new Queensboro Bridge across the East River will soon be the chief route of New York automobilists touring Long Island, it has been decided by Commissioners of Bridges, to set aside, if possible, a section of the structure for the exclusive use of automobiles. A change in the plans has been proposed, so that the two trolley tracks now on the lower deck of the span will be removed to the upper thoroughfare, to make room for a motorists' right of way. If the change can be accomplished, it will prove a boon to the many owners of automobiles, who, at present, have to be content with slow passage on ferry boats, or else risk blocks and delays on the Brooklyn and Williamsburg bridges, in order to reach, in roundabout manner, the smooth touring country of Long Island, or the Motor Parkway.

Hartford Forbids Parking in Streets.

Under a new ruling of the Hartford (Conn.) police department, automobile owners must "hire a hall" or rent a garage in which to keep their motor cars while attending the theater. No more free parking space is to be allowed along Prospect street, upon which many theater patrons used to leave their cars between the hours of 8 and 11 p. m. The police department held that the partial obstruction of lines of cars on each side of the street, was dangerous in case of fire, as it tended to retard the passage of fire apparatus.

Imposes Road Tax Upon Himself.

A strange case of enlargement of the motorist heart has been reported in Belmont, Mass. Henry O. Underwood, a resident of that place, sent a check for $100 to the town treasurer for damage done to the roads in that section by the donor's large automobile. The act was wholly voluntary and is without precedent in New England history. However, the local authorities are not sanguine enough to hope that this will become a general or regular custom among the resident motorists.

Memphis to Have Taximeter Cabs.

The Business Men's Club, of Memphis, Tenn., through its industrial department, is backing a company to operate taximeter cabs in that city. Representatives from various makers have appeared before the club, and a selection of ten machines has been made.

NEW JERSEY AFTER BETTER LAW

Active Canvass in Progress to Obtain Views of Motorists—Committee Appointed to Frame Amendments.

With the avowed intention of checking the activities of Joseph Frelinghuysen, resident of New York State, and Senator in New Jersey, and also to deal his miserable automobile law a crushing blow, the New Jersey Automobile and Motor Club, in common with the local trade association, has taken active steps toward securing a less repressive measure during the forthcoming legislative session. An active canvass among motorists is to be instituted at once for the purpose of obtaining their views, which data will be used in framing the new amendments that are destined to take the place of the many bad and objectionable features of the Frelinghuysen law. At a special meeting of the club, held last week, a special committee was appointed to investigate existing conditions and make a report in time to present the proposed amendments in the Legislature next month. The committee consists of Richard C. Jenkinson, George H. Simonds, Joseph H. Wood, W. C. Crosby, H. D. Bowman and W. B. Kinney.

Want the Punishment to Fit the Crime.

The fact that a number of automobiles have been stolen in Milwaukee, Kenosha and other Wisconsin cities, has led the motorists of Racine to demand a more drastic law in regard to thefts of this sort. Many owners of cars favor putting this crime in the same class with horse stealing, for which the penalty in that State is by no means light. Owners think that inasmuch as a motor car is worth several times the value of a horse and that as the maximum penalty for horse stealing is 15 years, the maximum penalty for purloining a car should be more than 5 years.

Satterfield Head of Buffalo Club.

More than 400 members of the Automobile Club of Buffalo, N. Y., attended the annual smoker and election of the organization on Tuesday last, 22nd inst., and elected the following officers for 1909:

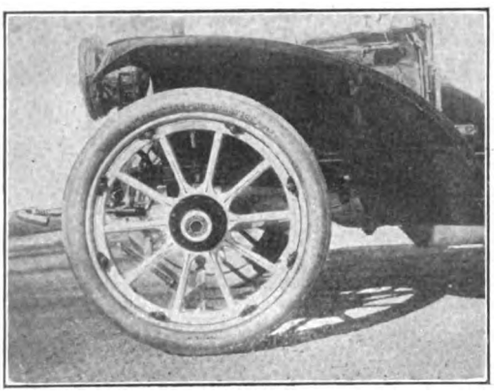
President, John M. Satterfield; vice-president, Laurens H. Enos; treasurer, Harry Thorpe Vars; secretary, Dal H. Lewis; directors, Edward H. Butler, E. R. Thomas, George C. Diehl, J. N. Byers, Maurice M. Wall and George P. Urban.

Lower License Fee for Cabs Wanted.

A petition for a rudection in the licenses required for taximeter cabs has been made to the city council by the Los Angeles Taxicab Co. The present fee is $5 per month, which the company asks to be lowered to $1 per month.

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Continental Ready-Flated Tires



1—Ready-Flated Tire in Position on Wheel

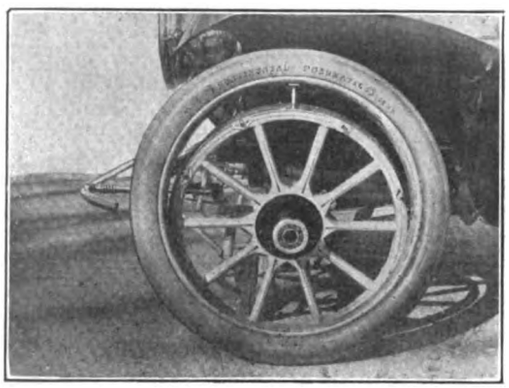
Permit the carrying of tires already

INFLATED ON SPARE RIMS

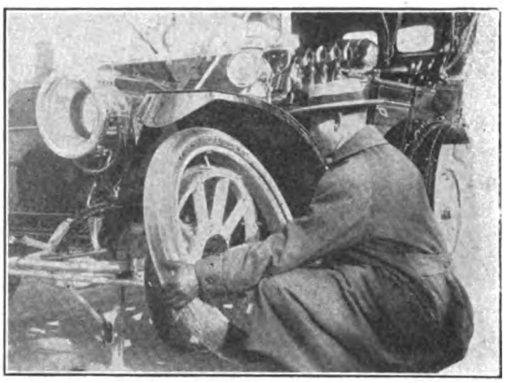
Reduce tire expense and make motoring a pleasure



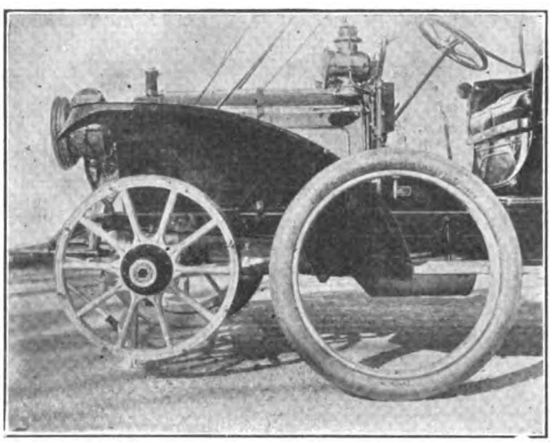
5—The Finishing Touch



2—Ready-Flated Tire Partly Removed



4—Placing Ready-Flated Tire on Wheel



3—Wheel Fitted to Receive Continental Tire—"Ready-Flated"

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The Week's Patents.

899,699. Wheel for Vehicles. William D. McNaul, Toledo, Ohio. Filed April 29, 1907. Srial No. 871,005.

1. A cushion wheel for vehicles comprising an inner and an outer felly, a plurality of chairs on one of the fellies and a plurality of substantially V shaped flexible sections, each having its ends secured in adjoining chairs together with the ends of the adjoining sections, and having its middle portion secured to the opposite felly.

899,708. Connection for Electric Conductors. Frank H. Ball, North Plainfield, N. J. Filed Aug. 6, 1906. Serial No. 329,-357.

1. A connection for electric conductors comprising an electric conductor; a spring clamp having jaws actuated by the clamp to detachably engage the conductor with a spring pressed contact; and a second conductor clamped and permanently held by the jaws of the clamp in position to receive greater pressure from the jaws as the clamp is placed in engagement with the first conductor.

899,770. Ignition Systm for Explosion Engines. Richard Varley, Englewood, N. J., assignor to Varley Duplex Magnet Company, a Corporation of New Jersey. Filed Nov. 8, 1907. Serial No. 401,191.

1. In an ignition system having a prinary circuit, a circuit controller having a plurality of contacts of different angular extent and located in different transverse planes, a continuously rotating shaft having metallic plungers in different planes corresponding to said contacts and equiangularly spaced apart, said plungers being spring-pressed radially outward and all grounded on said shaft, and a switch for putting one or any number of said contacts simultaneously into said circuit, the initial engagement of said contacts and said plungers occurring simultaneously when more than one is in the circuit.

899,809. Acetylene Gas Generator. Edwin M. Rosenbluth, Philadelphia, Pa. Filed Jan. 24, 1907. Serial No. 353,805.

1. An acetylene gas generator bracket, comprising a condenser in unitary relation therewith, detachably connected in rotatable relation with the generator, having a separate inlet and outlet for the gas and a drip outlet for the condensate, substantially as set forth.

899,822. Clutch. Heinrich Ast, Vienna, Austria-Hungary, assignor to The Firm of Vulkan Maschinefarbiks-Actien-Gesellschaft, Vienna, Austria-Hungary. Filed June 15, 1906. Serial No. 321,868.

1. In electric magnetic clutches: a shaft, a clutch member fixed thereon; a loose clutch member; a running sleeve free to turn upon said shaft and of greater length than said loose clutch member, and connected thereto in such a manner as to allow the latter only longitudinal motion with respect to the former; a collar on said running sleeve; and means exerting a yielding pressure between said collar and said loose clutch member.

899,856. Convertible Pneumatic Tire Rim. Erle K. Baker, Chicago, Ill., assignor of one half to Charles Gilbert Hawley, Chicago, Ill. Filed July 27, 1906. Serial No. 328,052.

1. A clencher rim having a removable flange and a filled ring adapted to fill the space in one of said flanges and extending above or beyond the edge thereof to protect a non-clencher tire from said edge, substantially as described.

899,876. Automobile Wheel. Joseph Laus, Jr., Oshkosh, Wis. Filed March 11, 1908. Serial No. 420,308.

In a device as set forth, a hub, an axle stub or spindle therefor, an interior spool shaped hub member positioned rotatably immovable adjacent to and upon said spindle, a pneumatic cushion extending about said hub member, casings therefor, means to allow the cushion to be inflated through the said spindle, said casings having bores to allow sufficient movement therefor to relieve the jar upon a vehicle, said interior casing having inwardly projecting portions to engage said cushion to hold the cushion and interior casing against a lateral or rotary movement.

899,891. Axle for Motor Road Vehicles. Jules Niclausse and Albert Niclausse, Paris, France. Filed April 18, 1906. Serial No. 312,483.

1. In a motor vehicle, the combination, with an axle comprising a tubular body with an enlarged middle portion having oppositely disposed lateral openings, power transmission gear mounted on a suitable support, the gear support arranged to be passed together with the transmission gear through one of the openings and secured on the inner opposite side of the tube to close the other opening, and a cap arranged to close the first opening, of a drive shaft extending longitudinally with the axle with one end connected with the transmission gear and the other with the drive wheel of the vehicle.

899,913. Power Transmission Universal Joint. Hugh R. Shaw, Rosseau, Ontario, Canada. Filed Dec. 13, 1907. Serial No. 406,294.

1. A power transmission joint or coupling comprising a ball member, a segment of a ring secured on the ball member and extending over more than one-half of the circumference of the same, and a socket member having the interior thereof in excess of a hemisphere and provided with an arc-shaped groove located on a plane through the axis of rotation and extending from edge toedge of said socket member so as to form a continuous bearing surface for the segment on the ball from end to end as it adjusts itself in the groove during rotation as specified.

899,934. Wheel. George Wolke, Jacksonville, Ill. Filed Feb. 17, 1908. Serial No. 416,401.

A vehicle wheel comprising a hub and a felly, a plurality of flat springs spokes carried by the hub, a plurality of pairs of clamping plates secured to the felly and projecting inwardly therefrom, opposing flanges on the clamping plates adapted to form a channl way, and flat springs secured in the channel ways formed by the clamping plates and having pivotal connection with the flat spring spokes adjacent the next preceding clamping plate.

899,953. Clutch Mechanism for Automobiles and the Like. Lee S. Chadwick, Philadelphia Pa., assignor to Chadwick Engineering Works, Philadelphia, Pa. Filed April 21, 1908. Serial No. 428,352.

1. A clutch comprising a main clutch member, a split clutch band, means for operating said band, and means independent of the operating means for connecting the end of the band to the main clutch member and for adjusting it circumferentially thereon, said band being removable and replaceable in respect to the main clutch member and the adjusting means, which latter maintains its adjusted position in readiness to receive the band, when replaced, under the same adjustment as before its removal.

899,974. Variable Speed and Reversing Mechanism. Noah S. Harter, Waukegan, Ill. Filed Dec. 2, 1907. Serial No. 404,689.

1. In a variable speed and reversing mechanism, the combination of a driving member, a driven member concentric therewith, and provided with a geared portion, planetary gearing carried by said driving member and engaging said geared portion of said driven member, shafts mounted adjacent and at right angles to said driving member, friction discs mounted upon said shafts, gearing connecting said driving member between said shafts and said driven member, and provided with a geared portion engaging with said planetary gearing of said driving member, and a friction wheel splined upon said sleeve in engagement with said friction discs, substantially as described.

900,063. Carriage Top. Joseph P. Fillingham, Lansing, Mich., assignor to Reo Motor Car Company, Lansing, Mich., a Corporation of Michigan. Filed March 25, 1908. Serial No. 423,081.

In the horizontal bow of a carriage top, the combination of a bow member and a pair of base members, couplings uniting the said members provided with a pair of pins around either of which the two members may swing, the said pins being adapted to hold the members in rigid arrangement when both are inserted, but to permit the swinging of one member with respect to the other when either of said pins is removed, substantially as described.

900,098. Carburetter. Frank H. Heotger, Indianapolis, Ind. Filed April 14, 1905. Serial No. 255,586.

1. In a device of the class described, a mixing chamber having an air inlet at its bottom and a mixture outlet at its top, in combination with a valve in said chamber and seated about the inlet opening therein, for automatically controlling the admission of air at said inlet, a spring resisting the movement of the valve, means for adjusting said spring, a vapor tube formed on said valve, a nozzle of less diameter than said tube and rising therein to a point above said valve, anda suitable reservoir wherewith said nozzle is connected, substantially as described.

900,163. Fender Clip. William C. Groehn, Detroit, Mich., assignor to Briscoe Manufacturing Company, Detroit, Mich., a Corporation of Michigan. Filed Nov. 25, 1907. Serial No. 403,690.

1. A clip comprising a shank, a bifurcated member having open recesses formed in the furcations thereof forming seats for said shank, a bolt engaging said shank between said furcations, a clamping nut for engaging the shank of said bolt and a bearing for said nut on said bifurcated member opposed to the bearings for the shank in said furcations.

900,234. Vehicle Spring Structure and Frame. Harry T. Tillotson, Chicago, Ill. Filed Dec. 21, 1906. Serial No. 348,922.

1. A supporting structure, a member fulcrumed intermediate of its ends on said structure, and springs mounted on said structure at each end of said member and normally urging both ends thereof downward to maintain said member in equilibrium.

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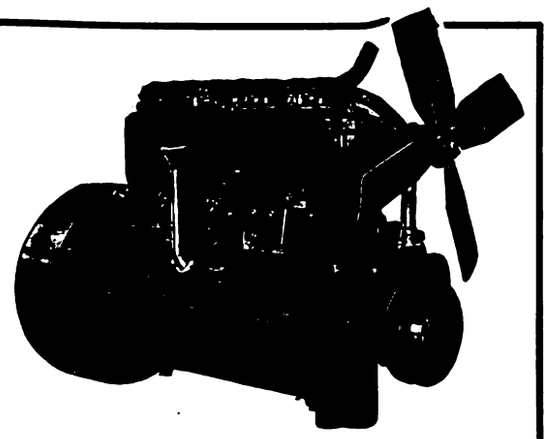
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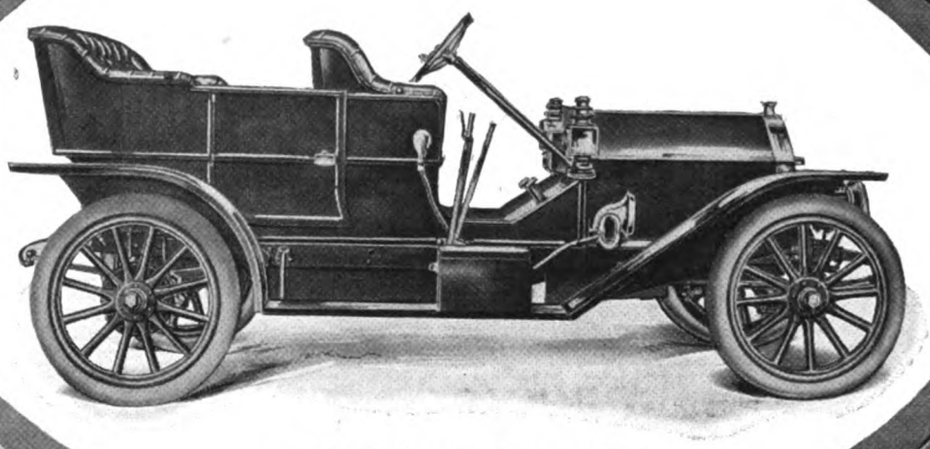
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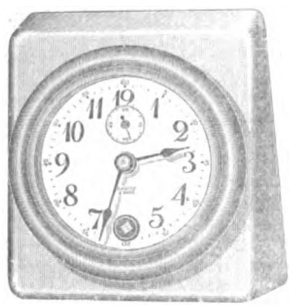
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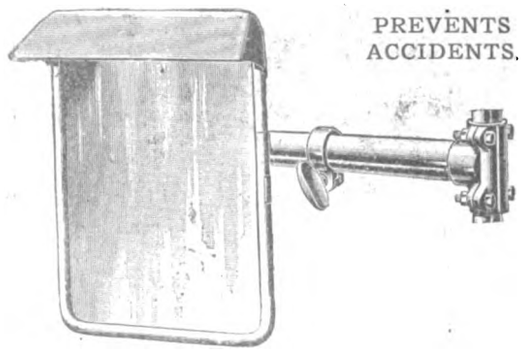


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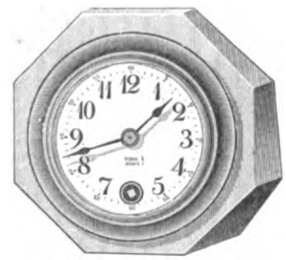
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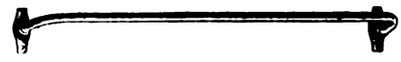
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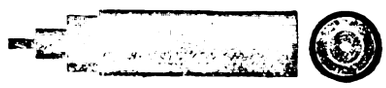


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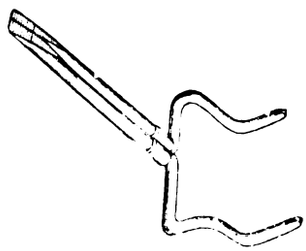
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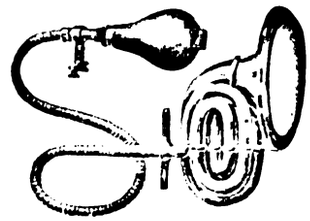
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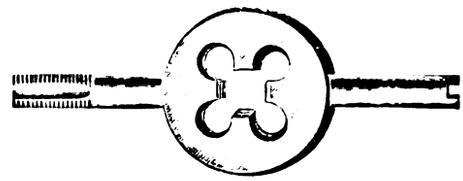
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THE MOTOR CAR EQUIPMENT CO. 1727 Broadway 55 Warren St. New York

Manufacturers, Importers and Wholesalers of Automobile Accessories.

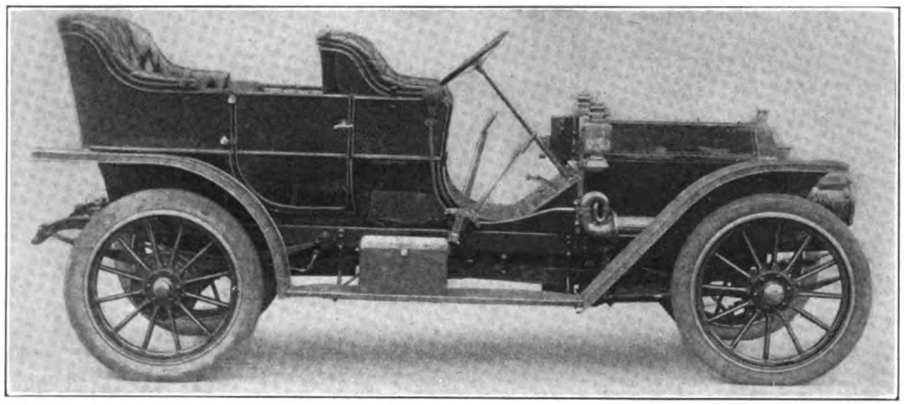
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For First Class Travel select a

Pullman Car

Safety and Comfort demand it. Car-wise users choose it

¶ The record of Pullman automobiles is a record of unbroken and uninterrupted successes in the hardest hill climbing, cross country, economy and track events everywhere.



PULLMAN MODEL K, 4-CYLINDER, 30 H. P.

Our 1909 Models are:

Model I., 20 H. P. Runabout, Price	$1,500
Model L, 20 H. P. Toy Tonneau. Price	1,600
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Model K, 30 H. P. Toy Tonneau or Roadster. Price	2,000
Model 6, 30 H. P. High Speed Runabout. Price	2,500
Model 4, 40 H. P. Gentleman's Roadster. Price	3,000
Model M, 40 H. P. Seven Passenger Touring Car. Price	3,500

¶ Pullman cars are correct in design and construction, embody the most advanced mechanical practice and in general appearance and finish are not surpassed by any cars at any price.

¶ To the agent who expects to remain in the business permanently, and who has an eye to the future, the line of Pullman automobiles should powerfully appeal. We ourselves are building for the future by building in the present the best automobiles we know how, and dealing in them in fair and square methods.

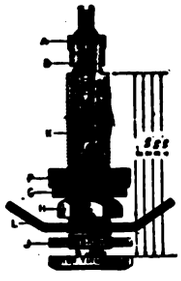
YORK MOTOR CAR COMPANY, York, Pa.

We exhibit at the Grand Central Palace Show, Space E-53.

ESTABLISHED 1844

SCHRADER UNIVERSAL VALVE

Trade Mark Registered April 30, 1895



SIMPLE AND ABSOLUTELY AIR TIGHT

Schrader Motor Tire Valves, as shown in cut, are the regular equipment for G & J Motor Tires, Hartford Dunlop Detachable Tires, Fisk Detachable Motor Tires, and New Goodyear Detachable Motor Tires.

Our No. 777 Motor Tire Valve is the standard for 2½ inch and 3 inch Tires and our No. 725 Motor Tire Valve is the standard for tires larger than 3 inches.

Supplied to the Trade by All Tire Manufacturers

Manufactured by **A. SCHRADER'S SON., Inc., 28-30-32 Rose St., New York**

WARNING!

After January 1st, 1909,

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All Ignition Coil Units

made under our patents and sold by our licensees.

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Manufacturers, Users or Vendors

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The Unit Coil Co.

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The Premier stock chassis is generally conceded to represent the highest achievement in motor car engineering.

"The Quality Car"

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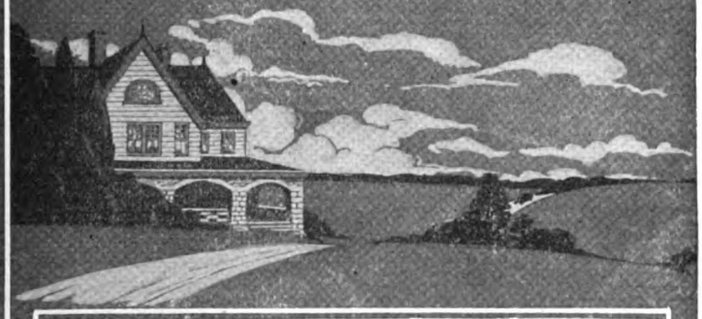
Premier Motor Mfg. Co.
Indianapolis, Ind.

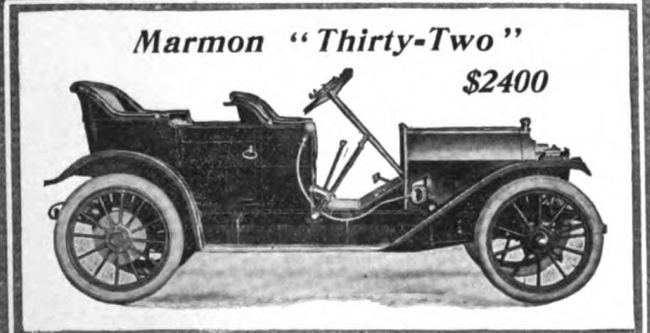
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This Car Represents Economy—Not Cheapness!

Over and above the fact that this is a car that will live, that you can depend upon and be proud to own—

It is a car offering a positive, proved value which you can get right down to brass tacks and figure out.

Figure up its equipment, note that its design includes all the best things in motordom, take into consideration Marmon workmanship, materials and construction methods, and then compare it with anything on wheels at $3,000 or less. Send for the detailed specifications.

Genuine Krupp and Chrome Nickel Steels used for important parts. Bosch magneto and battery—dual system. Hess-Bright ball bearings. Transmission and rear axle in one unit. Large brakes. Marmon oiling system. Weight, 2,100 lbs. 32-40 H. P. Tires, 34x4, all around. Complete equipment. Touring Car, Roadster, Four-Passenger Suburban, Coupe, or Limousine Town Car.

The superb Marmon "Fifty" (Seven-Passenger Body), $3,750.

Nordyke & Marmon Co. (Estab. 1851) Indianapolis, Ind.

Standard Mfrs. A. M. C. M. A.

At Grand Central Palace, New York. Also at Chicago Show, February 6-13.

The Easiest Riding Car In The World

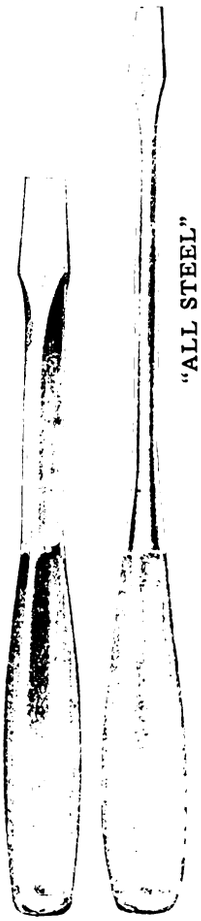
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That means that our Auto Tools are the strongest and most durable that can be made. They last a life-time. The steel selected is of the highest grade. In design our tools are thoroughly up to date.

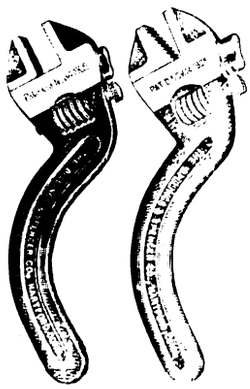
They fit the hand
They are handy to manipulate
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is a tool as necessary to your car as the engine itself. Don't fail to get our catalog of Auto Forgings and Tools.



The Billings & Spencer Co.

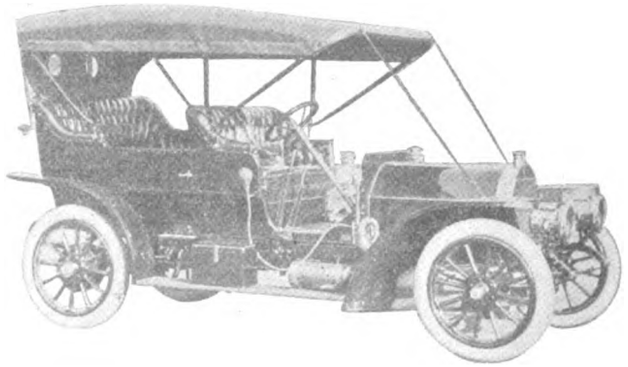
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London:
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PENNSYLVANIA

TYPE "D" "25"

A smaller car than the successful type "C" "50," but in every other detail it is the same fast and powerful machine. In speed, power and equipment it is clearly the leader of small cars.



Type "D" "25" Roadster, $2000 — Baby Tonneau Touring Car, $2100

OTHER MODELS:

Type "C" "50" as heretofore, $3000, unchanged.

Type "E" $3800 Luxurious 7 Passenger. Quinby appointment.

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Develops 75 h. p.
Fitted only with Baby Tonneau.

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PENNSYLVANIA AUTO MOTOR CO. Bryn Mawr, Pa.

Matheson

1909 Prices Reduced $1,000

In order to sell hereafter this highest of all high-grade cars at the prices of the cheaper cars, we have **increased our working capital by $350,000** and will **double our factory output.** Send for our book of customers' letters telling of the experiences of the most prominent men of affairs in this country with their Matheson cars, covering thousands of miles of service everywhere.

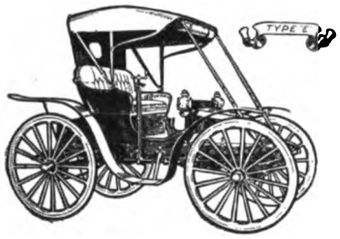


	New Price.	Former Price.
50 H. P. 1909 Touring Car	$4,500	$5,500
50 H. P. 1909 Roadster	4,350	5,000
50 H. P. 1909 Runabout	4,350	5,000
50 H. P. Limousine	5,500	6,500
50 H. P. 1909 Landaulet	5,500	6,500

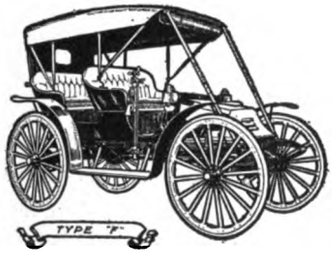
MATHESON AUTOMOBILE CO.

Main Sales Office, 1886-1888 Broadway, NEW YORK CITY
Dealers wanted in all open territory.

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$800 (Without top)



$925 (Without top)



$1100

The Reliable Dayton Line

THE RELIABLE DAYTON HAS "MADE GOOD"

IT is *not* a $75.00 buggy with a $50.00 motor in it, but it is a MOTOR CAR from the ground up. Is making business for itself in every territory it invades, through its economical features, compared with the pneumatic-tire car.

Let us refer you to several of the company's largest dealers, who have handled the Reliable Dayton the past year; let them tell you *their* experience. Investigate; *get the facts.*

Drop us a line for our agency proposition today.

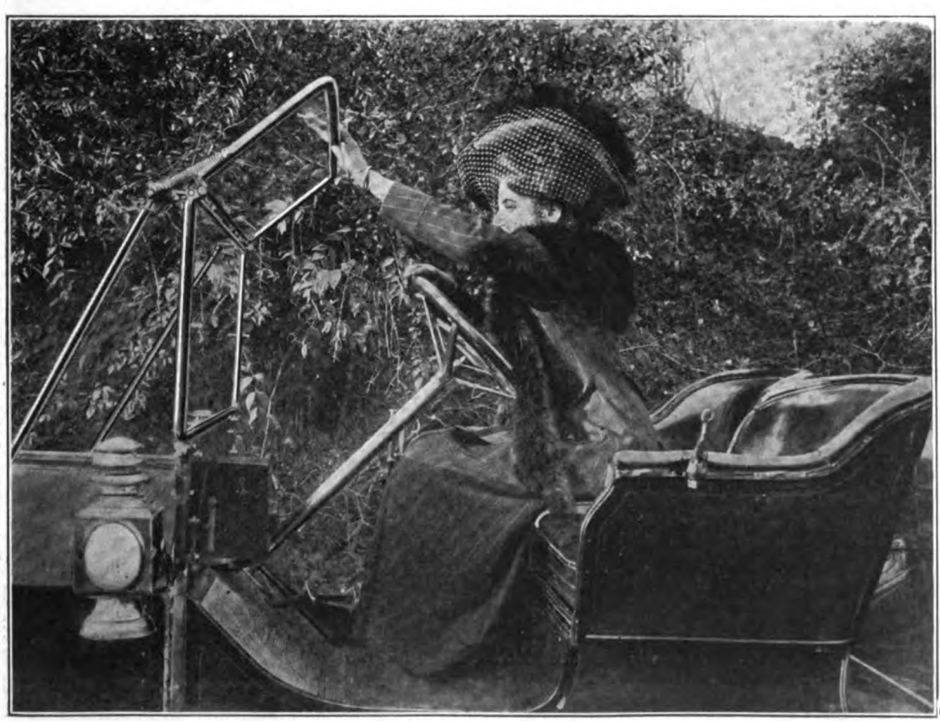
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Reliable Dayton Motor Car Co.

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PATENTED IN THE UNITED STATES AND PRINCIPAL EUROPEAN CITIES.

The only FOLDING DUST AND WIND SHIELD that can be instantly raised or lowered with one hand while the car is running at full speed. NO BOLTS OR NUTS TO ADJUST.

ALL BRASS AND GLASS BEAUTIFUL IN OUTLINE AND ANTI-RATTLING.

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C. A. MEZGER, Inc.

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FACTORY SALES MANAGERS:

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296 Broadway New York

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Mayo Radiators are as Unobtrusive as Good Form

¶ They don't "spout" or "slop over," and are thoroughly effective.

¶ Mayo Radiators are their own reason for their general use on really high-grade cars.

¶ Mayo Radiators are built first and built as well as the finest kind of artisans working with the best materials and under the most favorable conditions can build, and their cost is based on their worth.

¶ Mayo Radiators assure that whatever troubles a car may have, they are not due to the radiator.

¶ Mayo Radiators are not within the price limit of cheap cars. Equally true it is that they are within the quality limit of all good cars selling at any price.

¶ A Mayo Radiator axiom:

If the rest of the car is as good as the Mayo Radiator, it's all right.

¶ Mayo Radiators are made in a Quality Shop at New Haven, Connecticut.

MAYO RADIATOR COMPANY

Ninth National

Automobile Show

Madison Square Garden

January 16 to 23, 1909, New York City

Under the Auspices of the

Association of Licensed Automobile Manufacturers

Exhibiting standard Gasoline Cars licensed under the Selden patent.

LICENSED GASOLINE CARS

Apperson	Columbia	Hewitt	Packard	Royal Tourist	Stevens Duryea
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Cadillac	Franklin	Lozier	Pope Hartford	Simplex	Walter
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Corbin					Winton

ELECTRIC

Anderson	Bailey	Champion	General Vehicle Co.	Studebaker	Woods
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STEAM

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Complete exhibit by the Motor & Accessory Manufacturers. The only complete Motorcycle exhibit in New York, by the Motorcycle Manufacturers' Association, Commercial Vehicles, Town Cars and Taxicabs.

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A Year of Triumph for BOSCH Magneto

On the Track

Bosch won the French Grand Prix. The Prince Henry Contest. The Grand Prize at Savannah. The Light Car Event at Savannah. Both Brighton Twenty-four-Hour Races. Nazzaro established the world's record (120 miles an hour) with a Bosch. Many minor track events were also won with this system.

On the Road

The Thomas car won the New York-Paris Race with a Bosch. The winning cars in the A. A. A. Touring Contest were equipped with a Bosch. T. K. Hastings completed the Six Day Reliability Trial (Auto Cycle Union of England) with a Bosch.

In the Air

Zeppelin's great Dirigible Airship used two Daimler Motor Engines equipped with a Bosch.

On the Water

Dixie II, winner of the International Trophy in the greatest Motor Boat Race of the year was equipped with a Bosch.

On the Market

The Bosch is recognized as the best Ignition System obtainable and it is found on the majority of cars all over the world. Order a Bosch NOW for your car!

Bosch Magneto Co.

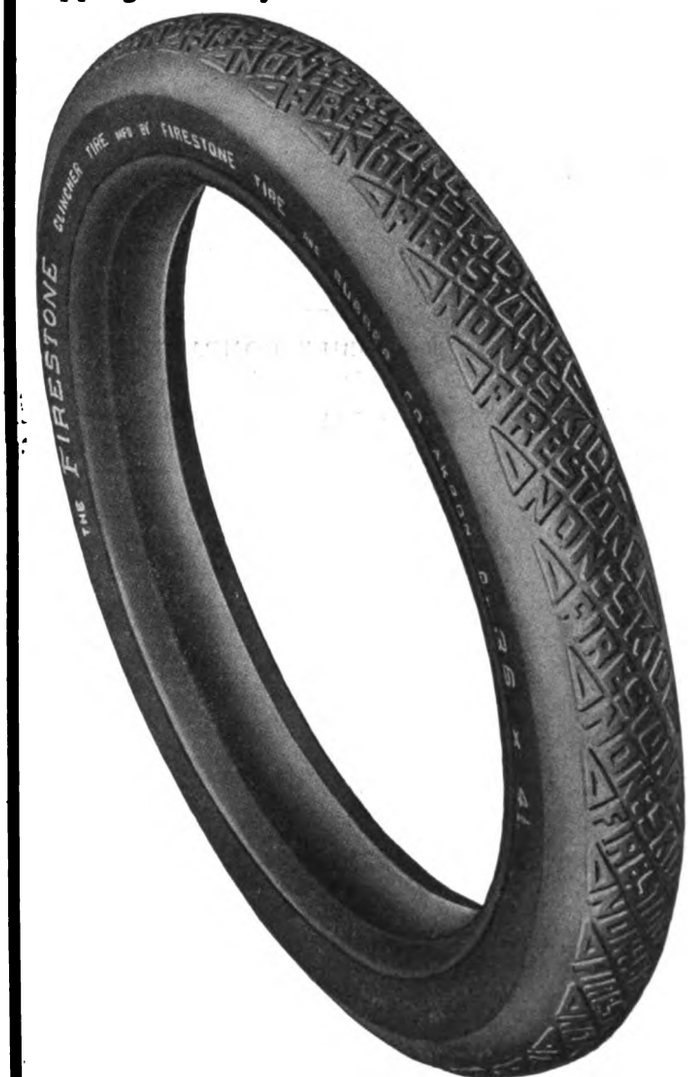
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NEW YORK

CHICAGO BRANCH,
1253 Michigan Avenue.



"Firestone" NON-SKID TIRE

The Tread is composed entirely of rubber; it is formed by the raised oblique lettering, "FIRESTONE NON-SKID." Presents a greater variety and number of angles and edges and points of road contact, to prevent slipping, than any other Non-Skid in existence.



The wear-resisting quality of this Tread is a revelation to motorists accustomed to the extravagant expense and short-lived efficiency of ordinary non-slip devices. *Ask to see it.*

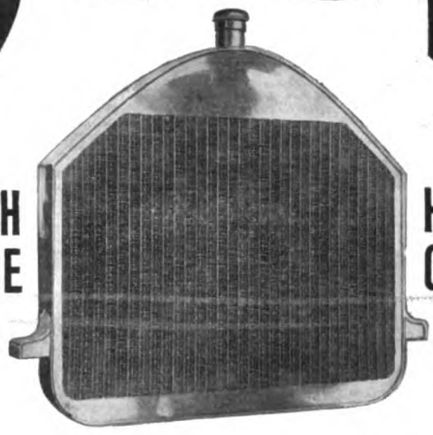
FIRESTONE TIRE & RUBBER CO., AKRON OHIO

Branches and Agencies Almost Everywhere

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BUSH RADIATORS

HIGH GRADE



HIGH GRADE

MADE ON SCIENTIFIC PRINCIPLES

HIGHEST EFFICIENCY

KNOX AUTOMOBILE COMPANY,
53 Wilbraham Road.

Springfield, Mass, Dec. 23, 1908.

BUSH MFG. COMPANY,
Hartford, Conn.

Gentlemen: In regard to the action of your radiators on our Vanderbilt Cup racers, would say we used your standard 3" section radiator on both our model O and model M cars, both radiators having exactly the same frontal area.

Both cars were run over the road to the race from Springfield and the drivers state that no water was added to either radiator during the practice or in the race, and that the cars were run back to Springfield with the same water in them as when they started. This seems to us to be a remarkable showing, particularly as the large car ran almost the entire race on a retarded timer setting, the magneto having gone wrong in the first lap. Yours very truly,

KNOX AUTOMOBILE COMPANY,
H. G. Farr, Supt.

RADIATORS, HOODS, FENDERS,
SHEET METAL WORK

Bush Manufacturing Co.

HARTFORD, CONN.

WEED
CHAIN TIRE GRIPS

are as necessary as gasolene. They absolutely prevent skidding, slipping, or lost traction

WHEN IT SNOWS!

put Weed Grips on all four wheels! Your car steers easily and without effort by so doing.

WHEN IT RAINS!

or the pavement is wet or "greasy" put on Weeds — your car cannot skid, slip or slide.

IN THE MUD!

or on the steepest hills there will be no lost traction if you use Weeds. They enable the heaviest automobile to climb hills easily and without effort. Is your car equipped?

WEED CHAIN TIRE GRIP COMPANY

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Don't place your spare Contract until after you have written to

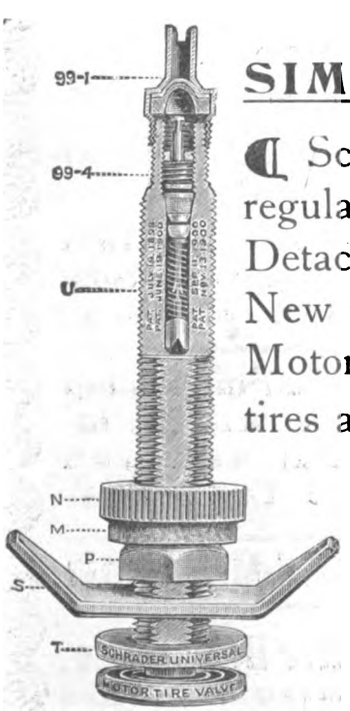
C. C. Lozier, manager

The Columbia Steel Company

Elyria, Ohio.

Schrader Universal Valve

Trade Mark Registered April 30, 1895



SIMPLE AND ABSOLUTELY AIR TIGHT

¶ Schrader Motor Tire Valves, as shown in cut, are the regular equipment for G & J Motor Tires, Hartford Dunlop Detachable Motor Tires, Fisk Detachable Motor Tires, and New Goodyear Detachable Motor Tires. ¶ Our No. 777 Motor Tire Valve is the standard for 3-inch and smaller tires and our No. 725 Motor Tire Valve is the standard for tires larger than 3 inches.

Supplied to the Trade by All Tire Manufacturers

MANUFACTURED BY

A. SCHRADER'S SONS, Inc., 28-30-32 Rose Street, New York

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THE NEW

Stevens-Duryea

Models XXX and Y

are typical Stevens-Duryea productions.

The latest links in the chain of STEVENS-DURYEA SUCCESSES

The XXX—a 24 Horse Power Four Cylinder Runabout—price $2,850.

The Y—a 6-40 Horse Power Six Cylinder Touring Car—price $4,000.

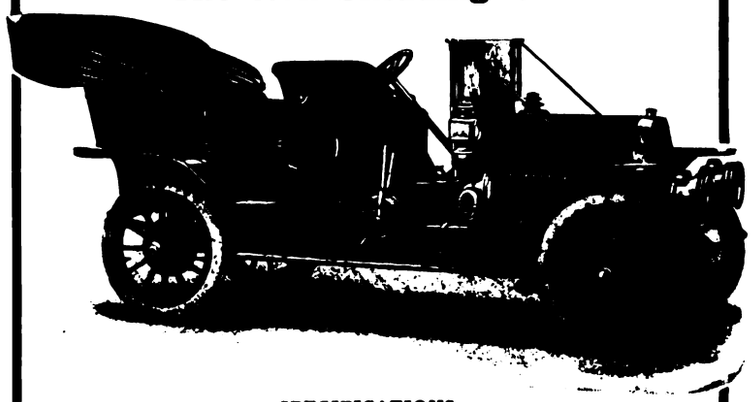
The Four Cylinder Model X, of the past season, and Six Cylinder Model U (Light Six) of the past two seasons, will also be **1909 STEVENS-DURYEA CARS.**

On Exhibiton at Licensed Association Auto. Shows

STEVENS-DURYEA CO.
CHICOPEE FALLS, MASS.
Member Association Licensed Automobile Manufacturers.

THE "JEWEL 40"

The Non-Skidding Car



SPECIFICATIONS

ENGINE—Rutenbur.
BORE AND STROKE—4¼x5".
IGNITION—Double—Bosch Magneto, Connecticut Coil and Exide Storage Battery.
LUBRICATION—Self contained system with oil level pump in crank case.
TRANSMISSION—Selective type, 3 speeds forward and reverse.
BEARINGS—Timken Roller.
FRONT AXLE—One piece drop forging.
REAR AXLE—Full floating type.
WHEEL BASE—120".
WHEELS—36".
TIRES—Goodyear, Diamond, Firestone or Hartford, 36x4" front, 36x4½" rear.
BODY—Seven passenger.
WEIGHT—3,000 lbs.
PRICE—$3,000.00 complete with top, Hartford Shock Absorbers, Prest-O-Lite gas tank, 9" Rushmore Search lights, side lamps and tail lamp, double tire irons and trunk rack.

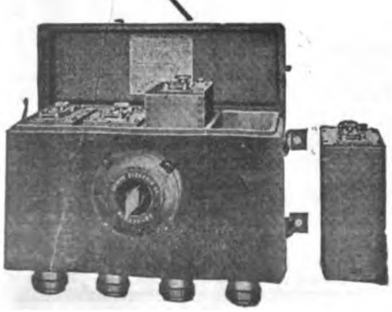
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THE FOREST CITY MOTOR CAR CO., Massillon, Ohio
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Heinze ignition apparatus on your 1909 car and get

THE BEST MADE.





Write us if your dealer does not carry them.

Heinze Electric Co.
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COILS, TIMERS, MAGNETOS, SPARK PLUGS.

JOT IT DOWN

to call at our exhibit at either of the New York Automobile Shows.

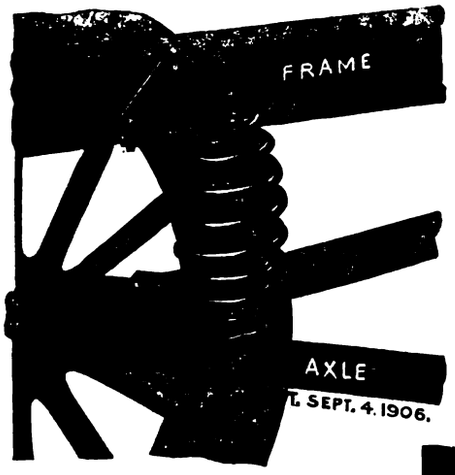
You will find an interesting display of our product, including several new and distinctive features.

SPACE 155, A.M.C.M.A. SHOW

Standard Roller Bearing Co.
PHILADELPHIA, PA.

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YOU'VE TRIED THE REST, NOW BUY THE BEST



"We are entirely satisfied with them."
ELMORE MFG. CO.

"The 'Sager device' presents advantages not found in other so-called 'shock absorbers.'"
OLDS MOTOR WORKS.

"They add greatly to comfort and reliability."
CRAWFORD AUTOMOBILE CO.

"We find them indispensible."
LOGAN CONSTRUCTION CO.

"Our customers are more than satisfied with them."
DORRIS MOTOR CAR CO.

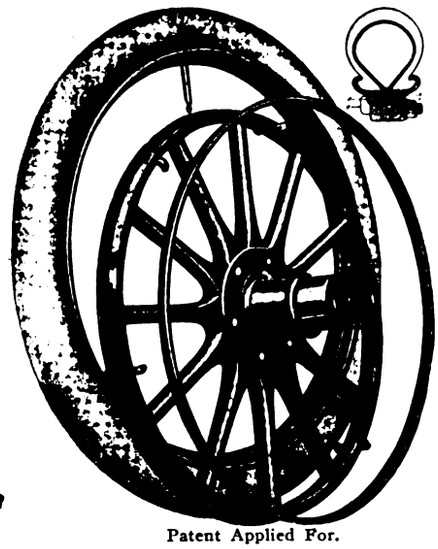
"Have given us very excellent satisfaction."
THOMAS B. JEFFERY CO. (Rambler).

"In the last three years we have used quantities of your springs, which have given excellent satisfaction."
DAYTON MOTOR CAR CO. (Stoddard-Dayton).

"Used your springs with splendid success."
THE AUTOCAR CO.

"A great benefit and we cannot speak too highly of them."
THE FOREST CITY MOTOR CAR CO. (Jewel).

"We found your springs to be satisfactory."
POPE MFG. CO.



Patent Applied For.

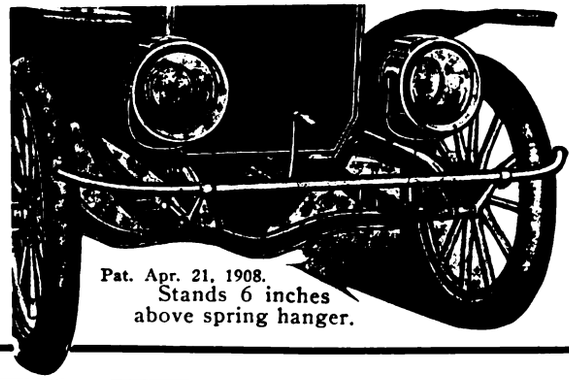
The Demountable Rim
that you have been waiting for.
Detached in 30 Seconds
See us at the Shows or write for particulars.

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Sager Equalizers
OVER 35,000 IN USE.
18 Leading Makers Endorse Them.
You will, too, if you try them.

J. H. SAGER CO.

PROTEOTION BUMPER



Pat. Apr. 21, 1908.
Stands 6 inches above spring hanger.

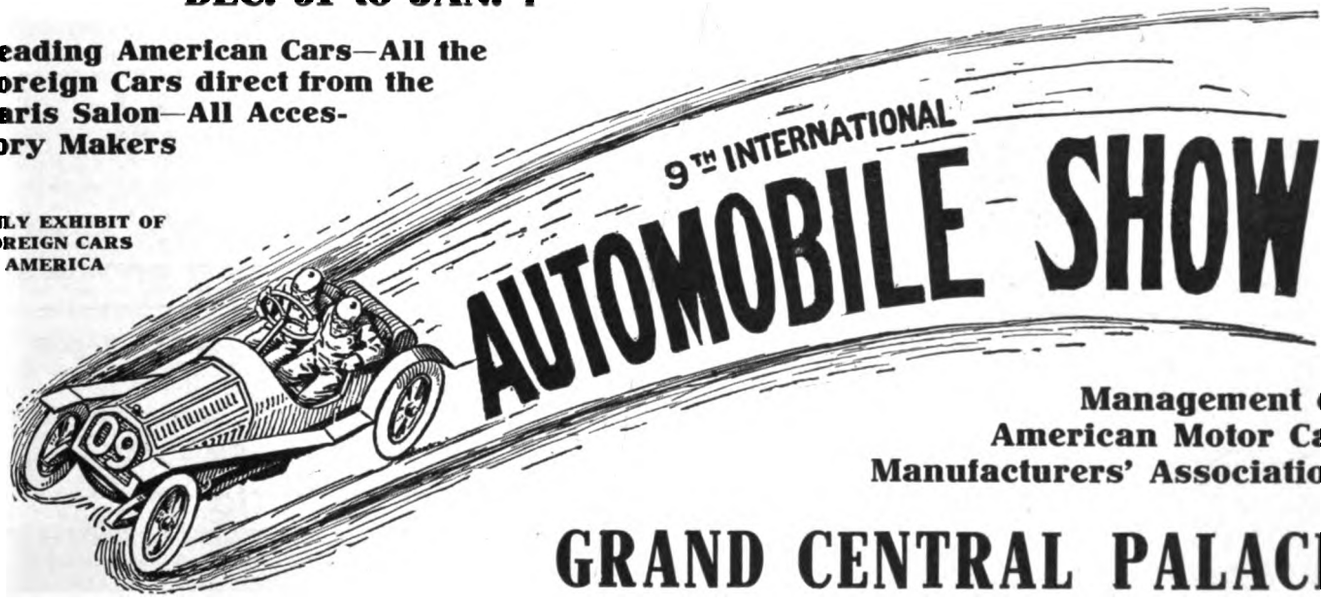
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ONLY EXHIBIT OF FOREIGN CARS IN AMERICA



Management of American Motor Car Manufacturers' Association

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INTAKE, EXHAUST AND WATER PIPES
Whitlock Coil Pipe Co. Hartford, Conn.

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Automobiles
Why pay for useless weight? Write for catalogue of the strong, high-power, light-weight Franklins.
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WE WILL NOT
accept your contract unless we can give you the delivery you require. We will not accept more contracts than we can fill with proper attention to each. We make Pressed Steel Frames and Automobile Stampings.
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CLEVELAND SPARK PLUG CO.
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The newest and best wrench made; all steel—great strength; instantly adjusted; easily and quickly operated; positive grip; immense time, trouble, and temper saver; best "all round tool" ever offered for sale.
"You will want one when you see it."
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The "Gotham" STA-RITE will end your spark plug troubles. Soot can't stick to the porcelain. Won't short-circuit. Never leaks. Can be taken apart and cleaned with ease. Of dealers, or direct, $1.00.

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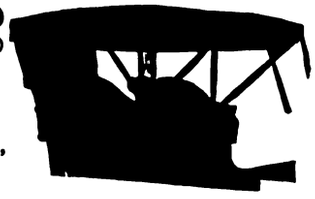
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The Best Tubes Ever Manufactured.
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on your automobile mean more comfort, speed, safety, economy. Prove it at our expense. 30 days free trial.
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Gasoline and Electric—for Pleasure and Business
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THE 28-30 H. P. MITCHELL, $1,500
Includes genuine $150 Splitdorf Magneto (free) and ½ inch larger tires than you get with any other car at this price. To have other cars equipped with these tires you must pay $50 extra. Write for full information to-day.
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Cannot Blow Out, Rim Cut or Puncture.
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THE OIL THAT GRAPHITIZES

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YOU NAME THE CAR WE'LL NAME THE GRADE

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The Simplest Automobile in the World.

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Demonstrated before Board of Governors Harrisburg Motor Club with great success. For particulars write

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Get our quotations on high grade two and four cylinder motors, 10 to 45 horsepower. They are equipped with self-contained oiling system and ready for attaching magneto. Highest grade workmanship, efficient, durable and simple. Also clutches and trans. Send for catalogue.

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ONE Quality for ALL Models
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Invaluable to the owner or prospective owner of a motor car. Practical and to the point. Send for prospectus to the

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We are prepared to furnish you any kind or style as above. We shall be pleased to furnish quotations.

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Automobilists Know Exactly How Far and How Fast

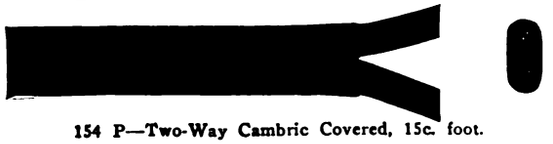
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This is No. 154 P., Four-Way, Cambric Covered.

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drive their cars more miles per dollar cost than any others

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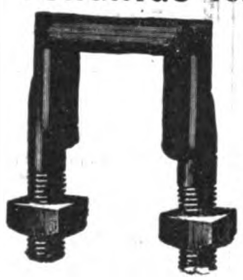
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A Metal That's A Time and Money Saver

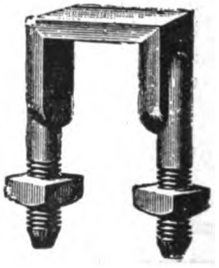
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Change a bone-shaker and a spring-breaker into an easy riding, real automobile in which you can take pride and your passengers comfort. The use of S. S. S. change a near-good car to a real good car and add the finishing touch of luxury to the best cars. Our booklet tells you all about them, and is yours for the asking. Write for it.

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Model B—Brush Runabout

A CAR OF SIMPLE DESIGN MADE WELL
NOT A COMPLICATED DESIGN MADE CHEAPLY

Its records and the opinions of its users speak more loudly than self praise. Agencies for 1909 are being closed rapidly. Much good territory still open.

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Any good automobile will give you pleasure. But which one will give you the most pleasure and the most service for what it costs?

Look at the facts.

The Franklin air-cooled engine gets more power out of the gasoline than a water-cooled engine, because it runs at a more efficient temperature. This means fuel economy right at the start.

The Franklin engine is lighter. There is no water-cooling apparatus. The whole automobile is lighter, as well as simpler and stronger. This means further fuel economy, and an enormous saving of tires. The weight of an automobile is what wears out tires and makes big bills.

The Franklin six-cylinder seven-passenger Model H, the most capable touring-car for American roads, is the only light-weight large automobile. It doesn't begin to use up tires as fast as the heavy water-cooled machines. And it is more comfortable. Many people who can endure only a limited amount of riding in a steel-frame half-elliptic spring automobile, find that in a Franklin with its full-elliptic springs and its laminated wood frame they can ride all day—and day after day, with comfort and enjoyment.

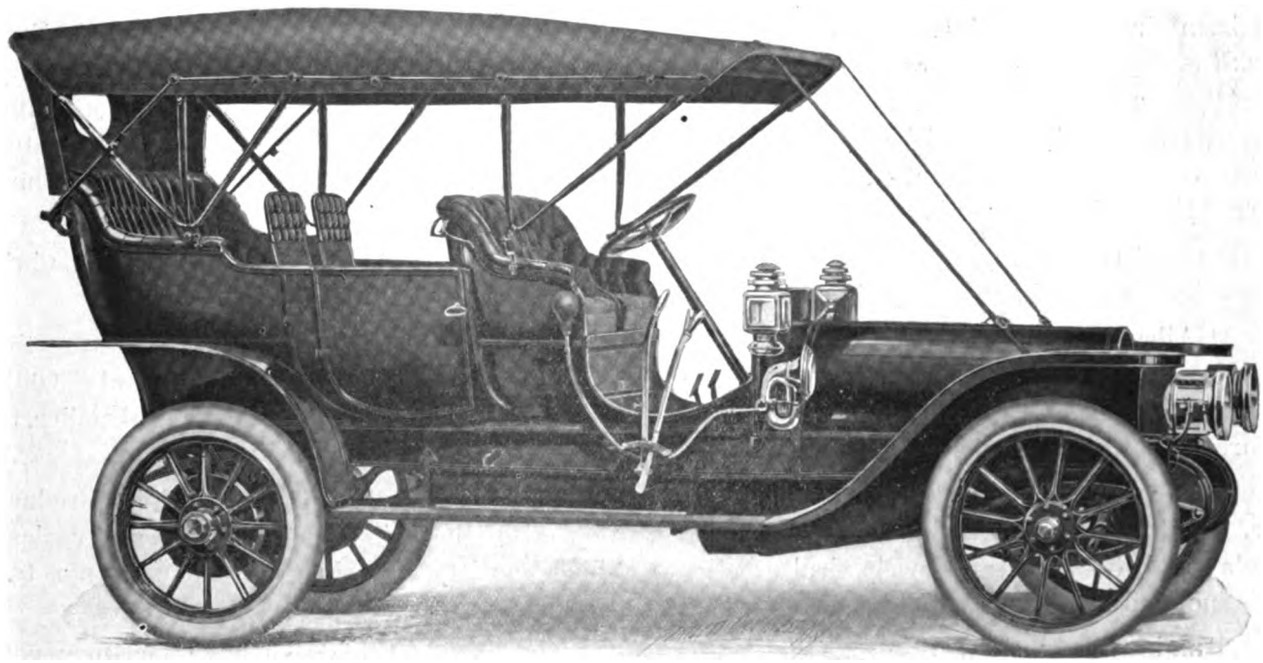
So the Franklin gives more mileage—more service, on all sorts of roads. And more service in the year. You can use any Franklin all the time—winter and summer. There is nothing to freeze nor overheat.

What real comfort is there in a heavy hard-riding automobile? How much satisfaction in one that you cannot use readily and freely every day in the year?

Franklin automobiles, measured by quality, and by what they do, are the best automobile value there is.

Learn the facts before you buy.

Write for the new 40-page Franklin catalogue de lux , describing the complete line of Franklin runabouts, touring cars and closed cars. The most informing automobile ca alogue ever issued. Sent only on request.

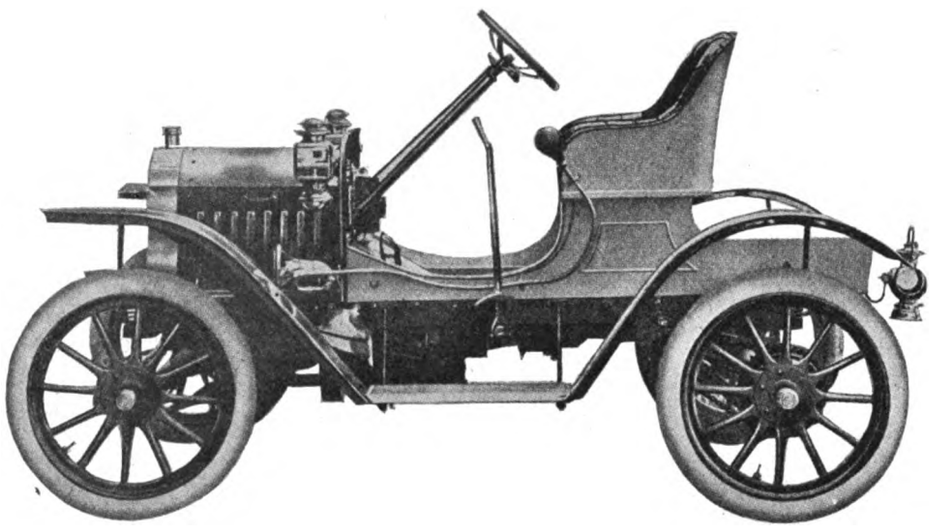


Franklin seven-passenger Model H, 42 H.P., six-cylinder, air-cooled motor, selective transmission, 127-inch wheel base, 36-inch wheels, Bosch high tension magneto. Finish, royal blue, $3750. Top extra. Single or double rumble seat runabout. Finish, red and black, $3600. Limousine, finish, royal blue, $5000. Prices f. o. b. Syracuse.

H H FRANKLIN MFG CO., Syracuse N Y

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The One Big Feature of the New York Show



has been the trans-continental Brush Runabout, placed on exhibition exactly as it came to New York the day before the show opened. The thousands upon thousands of visitors carried away with them a blurred, vague, nameless impression of cylinders, polished steel, valves, sputtering sparks, handsomely finished bodies, lights, noise, tires, dust and salesmen, but for every visitor one feature at least stood out prominently—the little seven horsepower Brush Runabout which had crossed the American Continent and climbed Pike's Peak.

It stood there dirty, muddy and scarred but not in the least rickety or worn out, and it hadn't been rebuilt a few times or any times at all, on the way.

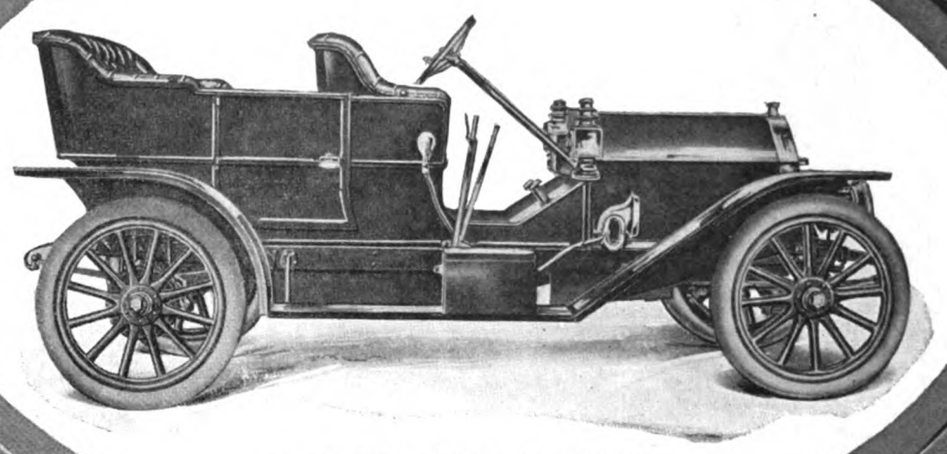
At Albany, it was scheduled to climb the Capitol steps and permission was obtained from the officials, but at the last moment Governor Hughes disappointed the crowd (estimated at 5,000), which had assembled to see it by forbidding the attempt and sending a squad of special police to enforce his orders and disperse the assemblage.

The Brush has won out. It has marked the beginning of the latest tendency, which is to reduce size, weight and complications. It has sounded the knell of the vulgarity of bigness and useless display and the keynote of mechanical excellence, which consists in doing just enough—not too little, not too much—and doing that as well as it can be done.

Examine the workmanship and the materials. Ask users. Considerable open territory yet. The right man wanted in enough more places to take up our total possible product.

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INTER-STATE STANDARD TOURING CAR, $1750.

The Inter-State

THE fact that the INTER-STATE automobile—a permanent, enduring car—is sold at a price but little higher than the price of temporary cars is all the more noteworthy when you realize that absolutely high grade quality is shown in every detail of its construction.

Nothing is slighted, no vital part is cheapened in the INTER-STATE. Consider its ignition system, for example. Every INTER-STATE car is equipped with Eisemann Magneto. The whole automobile world knows the high worth of the Eisemann Magneto. There is no more reliable ignition system. This reliability has been established not merely by its successful performances in many notable road races, but by the experience of thousands of owners of pleasure cars.

In all other mechanical details, in style, comfort, speed, control and finish, the light-running, graceful INTER-STATE—$1750.00 complete—finds its only competition in the **high-priced** high grade cars.

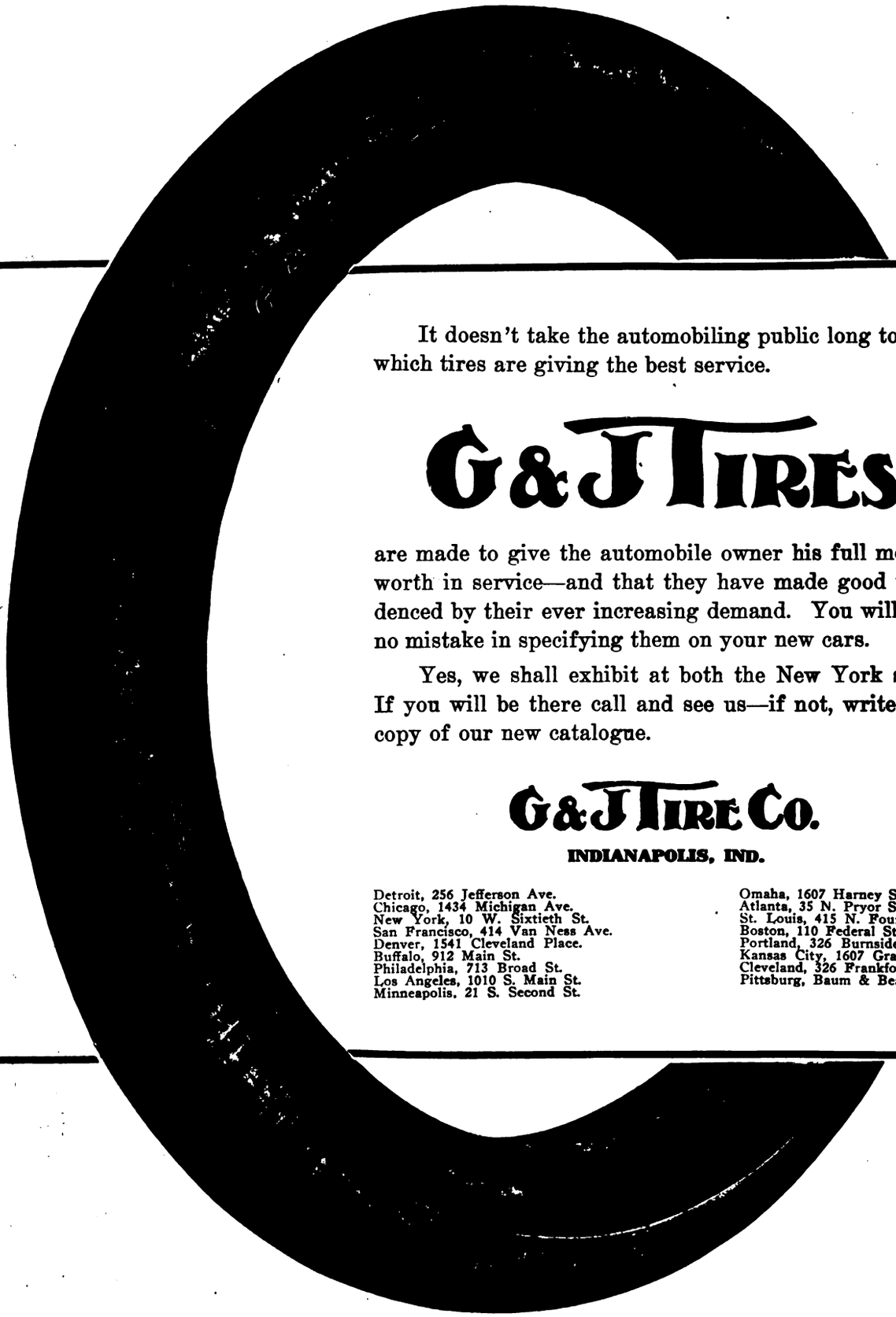
We want you to see the INTER-STATE. We want you to drive it, and give it every test before you **think** of spending your money for a cheaper car—or even a higher-priced car. We will be content to accept your judgment as to the worth of the INTER-STATE.

AT THE SHOWS—The full line of INTER-STATE Automobiles, including Standard Touring Car, Demi-Tonneau, Double Rumble Roadster, Single Rumble Roadster and Tourabout, will be exhibited at Grand Central Palace, New York, December 31-January 7, and at the Coliseum, Chicago, February 6-13.

INTER-STATE AUTOMOBILE CO. 126 Willard St. Muncie, Ind.

DEALERS AND AGENTS will quickly appreciate the opportunities opened to them by the INTERSTATE. Our proposition is unusually attractive.

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It doesn't take the automobiling public long to learn which tires are giving the best service.

G&J TIRES

are made to give the automobile owner his full money's worth in service—and that they have made good is evidenced by their ever increasing demand. You will make no mistake in specifying them on your new cars.

Yes, we shall exhibit at both the New York shows. If you will be there call and see us—if not, write for a copy of our new catalogue.

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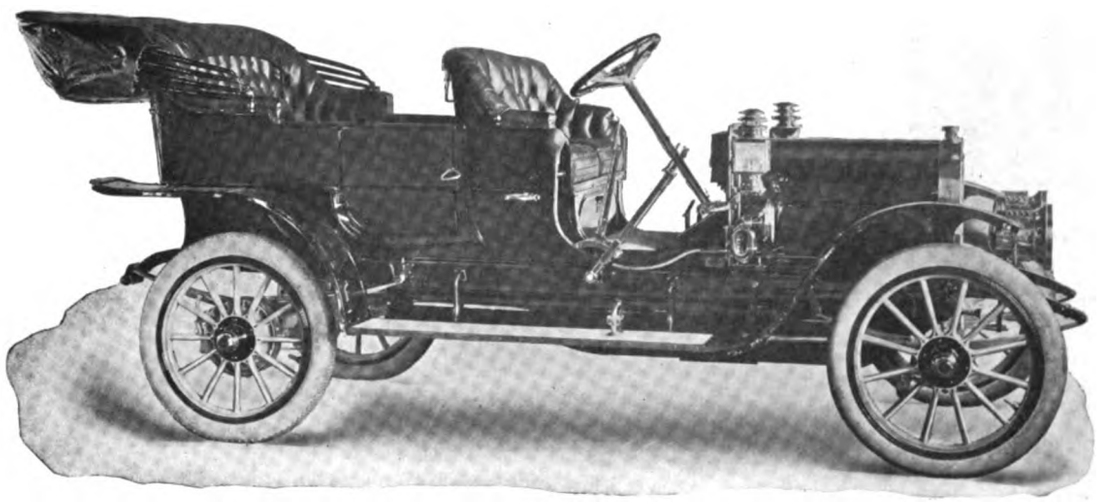
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One Price, $2,000. F. O. B. Rochester.

TOURING CAR, ROADSTER, TOY TONNEAU

A genuinely good car cannot be made and sold for less than $2,000. By this we mean a car like the Selden, containing nothing but the best of materials, workmanship and finish. A car that the manufacturer can stand behind and guarantee for at least a year against any imperfections in workmanship or material.

We buy only the best materials, employ only skilled labor and pay particular attention to details and finish, thereby producing a strictly high-grade car at the lowest possible price.

The up-keep and maintenance of a medium-priced car like the Selden is within the reach of any man of moderate means and the value of the car does not depreciate like that of the lower priced cars. This is the point to be considered by every purchaser.

The Selden Car is a 4-cylinder 28-30 horsepower (developing 37 horsepower) five passenger Touring Car or three passenger Roadster, with 114-inch wheel base, 34-inch wheels, shaft drive, selective control, pressed steel frame, metal body, fully equipped.

Superb riding, roomy tonneau, luxurious upholstery, smooth running, great hill-climber, flexible and easily handled, economical in maintenance and up-keep, fine finish, stylish and attractive.

THE COMING CAR OF MODERATE PRICE

Catalog and Agency proposition upon request. Agencies wanted everywhere.

We will exhibit at Madison Square Garden Show.

SELDEN MOTOR VEHICLE COMPANY

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An organization for making and selling that is effective, yet not wasteful.

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A product that is pre-eminent as regards quality, finish and performance.

A clientele that is the most numerous and most enthusiastic.



MODEL 4—Four-inch, 60-mile dial, enclosed season odometer and automatic resetting trip register and maximum speed hand, price **$40**

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Jackson AUTOMOBILES

Season of 1909



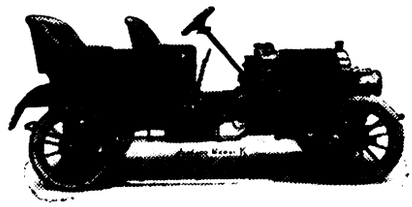
Model E, $2,000—4 cylinders.



Model H, $1,600—4 cylinders.



Model C, $1,250—2 cylinders.



Model K, $950—2 cylinders.



Model F, $950—2 cylinders.

There is Nothing Better

and precious little that offers as much as the

JACKSON AGENCY

The line is complete and permits the Jackson agent to appeal to all classes of buyers. The cars are right, the prices are right and our terms to agents likewise are of the right sort.

If YOU are in business to make money and to build up a satisfied clientele we will be pleased to have an opportunity to treat with you.

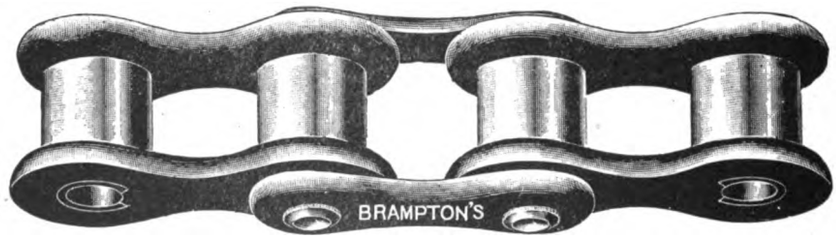
1909 MODELS NOW ON EXHIBITION AT THE GRAND CENTRAL PALACE SHOW, NEW YORK, AND WILL BE DISPLAYED ALSO AT THE COLISEUM SHOW, CHICAGO, FEB. 6-13.

No Sand Too Deep—No Hill Too Steep

JACKSON AUTOMOBILE COMPANY

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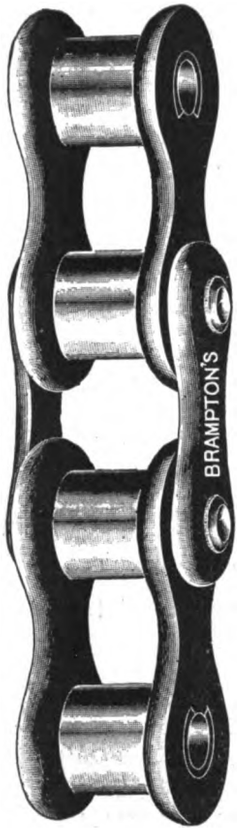


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MUST BE SEEN

The Highest Art of

THE BRAMPTON CHAIN



The *strongest* chain in the world; made of *self-hardening steel* with large spun rivets, chamferred side plates (no sharp edges). All parts of this chain are polished and fit the sprockets (which are properly cut) without friction.

Imitation, What's the Definition?

All Brampton Chains are stamped with the name Brampton on each outside link; Beware of the imitation and get the genuine Brampton.

PRICES THE SAME AS OTHER CHAINS

American Size Brampton Roller Chain

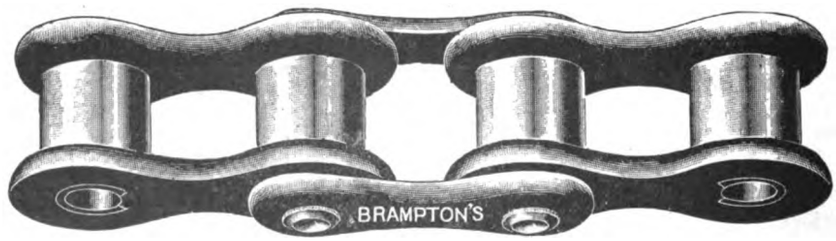
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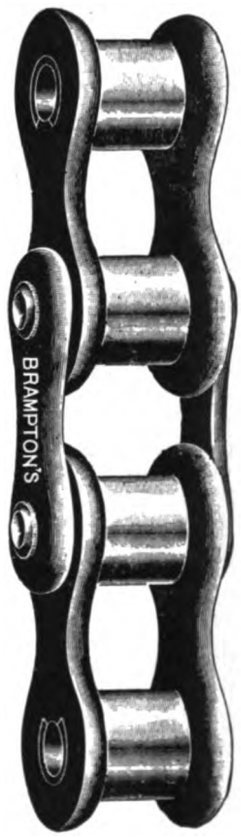
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Motor Chain Construction



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make it possible for us to import the CELEBRATED BRAMPTON CHAIN from England (paying freight and duty) and sell it at the same price at which the several other automobile chains are sold to manufacturers, jobbers, dealers and users.

Prices Being Equal What Would You Do?

The price being equal, it's presumable you want the best, and full value for your money. In such cases, the BRAMPTON fills the bill, and the prices are the same to manufacturers, jobbers, dealers and consumers as any other chain of equal size.

We carry in stock the BRAMPTON CHAINS to fit Foreign Cars—Mercedes, Panhard, Martini, Fiat, etc., etc.

AND DEALERS OR ANY OF OUR BRANCHES

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4 and 6 Cylinder Roadsters, Touring Cars and Enclosed Cars. $1,250 - $2,250

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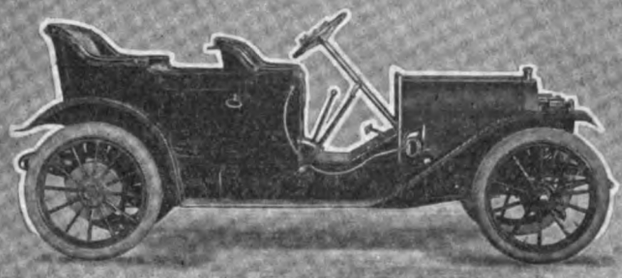
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"A Mechanical Masterpiece"



Marmon "Thirty-two", $2400

An Automobile Classic—A Conspicuous Value

The Marmon "Thirty-two" is neither a cheaply-built car at a low price, nor a "good enough" car at a high price.

It is a high grade car in every sense of the word, built as carefully as a fine watch. The parts are interchangeable, all of them manufactured by us, rigidly tested and carefully assembled into a harmonious whole.

Weighing not over 2,100 pounds, with 32-40 H. P., this "Thirty-two" has a world of speed and ability. In performance, as in appearance, it is a car that needs no apologies—occasions no regrets—a car you will be proud to own.

The "Thirty-two" sustains the Marmon reputation for mechanical excellence. It can be depended upon to stand up under the most severe usage, year after year.

To the man who looks ahead and buys with his eyes wide open, this car is an emphatic bargain. No other car on the market at $3,000 or less offers so much actual value.

Get the specifications, notice the character of design and equipment, and make a few careful comparisons.

Genuine Krupp and Chrome Nickel Steels are used for important parts. Bosch magneto and battery—dual system. Three point motor support. Straight line shaft drive. Rear axle and transmission in one unit. Marmon oiling system. Large brakes. Hess-Bright imported ball bearings. Big tires (34x4 all around). Complete equipment. Furnished as Touring Car, Roadster, Suburban, Coupe, or Limousine Town Car.

The Marmon "Fifty," $3750

A superb car, of most distinguished appearance. In hard, practical cash value, it is the superior of the most famous foreign cars selling at two or three times the price. Furnished with seven-passenger body. 50-60 H. P. Completely equipped.

Marmon "Forty-five" Roadster, a special model, $3,500

The 1909 Marmon Models will be exhibited at the Chicago Show, Feb. 6-13

Nordyke & Marmon Co.
Estab. 1851
Indianapolis, Ind.
Standard Mfrs.
A.M.C.M.A.





Built Here

Marmon "Fifty," $3750

The Easiest Riding Car In The World

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What Good Tires Mean To You

Throughout the world Morgan & Wright tires are known as good tires—because they are.

To the motorist this statement of demonstrated quality means much, for—

It is a guarantee against wholly unnecessary repair bills—against all repair bills, in fact, except those necessitated by accident or natural wear;

It stands for protection to the car, which can be secured only by the use of tires that are built to withstand emergency tests as well as ordinary service;

It's an assurance that you will be spared the exasperating inconvenience which always attends breakdowns of any kind—especially those against which you could be protected.

MORGAN & WRIGHT TIRES

have literally won over hundreds of motorists by reason of their protective quality—the quality that makes them absolutely safe under any condition.

Whether this protection is secured through the grade of materials used, or through our method of tire-building, or as a result of extremely rigid inspection which every tire undergoes before it is permitted to leave the factory, is comparatively unimportant to the user.

The vital consideration—and the only one that appeals to the experienced motorist—is this:

These tires actually stand up day in and day out under every condition of both load and road, as only tires can that are made as MORGAN & WRIGHT tires are.

And it is because users of these tires have repeatedly found this to be true, that we invite all motorists to give them an impartial, comparative test.

There is no method of making friends
equal to the method of making good.

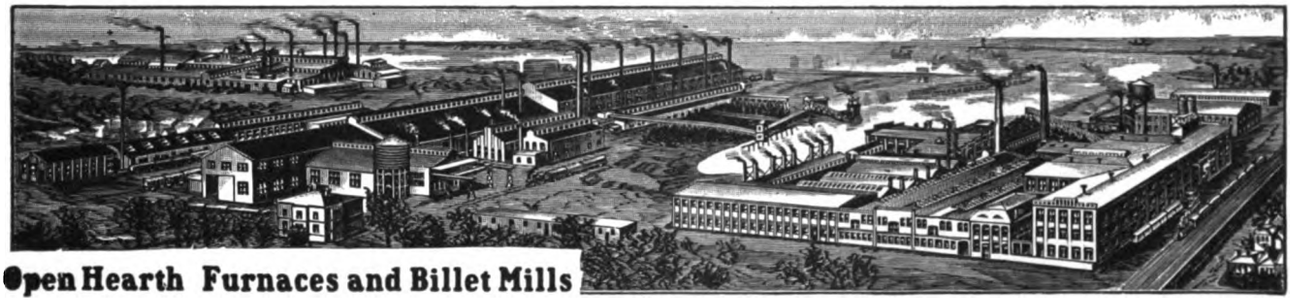
MORGAN & WRIGHT, DETROIT

Branches, Agencies or Dealers Everywhere

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The Home of "Swedoh" Spring Steel Rims

Its size is eloquent testimony to the merits of its product.

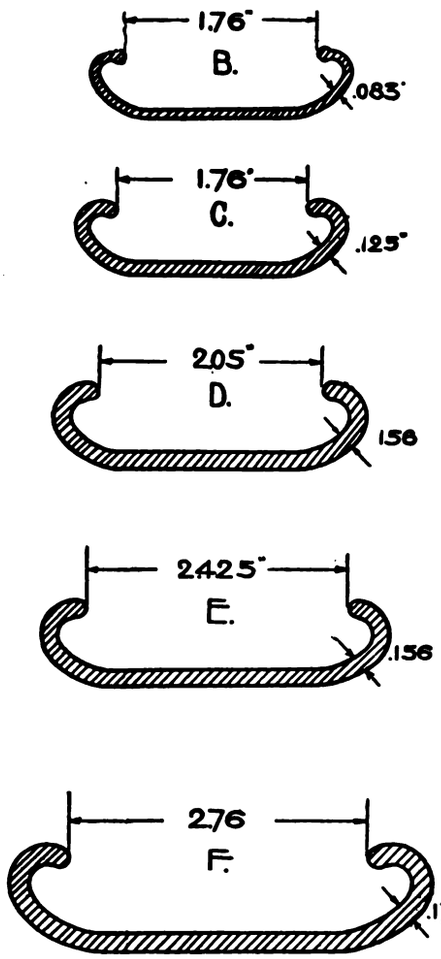


Open Hearth Furnaces and Billet Mills

"TRUE AS ('Swedoh') STEEL"

has an added significance when applied to rims meaning A TRUE CIRCLE OF STEEL THAT STAYS TRUE. See that they are on all your automobiles.

Rims for Wood Wheels



We also manufacture a complete line of COPPERIZED AUTOMOBILE OILERS—the kind that last.

AMERICAN TUBE & STAMPING CO.
N. Y. Office, 100 Broadway — BRIDGEPORT, CONN.

CLINCHER RIM MEASUREMENTS.

Size.	Rim Section.	Inside Diameter of Rims for Wood Wheels.	Diameter of Rims at Tire Seat for Both Wood and Wire Wheels.
26x2½ in.	B.	20.834 in.	21 in.
*28x2½ " interchangeable	"	21.834 "	*22 " interchangeable
*30x2½ " "	"	23.834 "	*24 " "
32x2½ "	"	25.834 "	27 "
34x2½ "	"	27.834 "	29 "
36x2½ "	"	29.834 "	31 "
26x3 "	"	19.834 "	20 "
*28x3 " interchangeable	"	21.834 "	*22 " interchangeable
*30x3 " "	"	23.834 "	*24 " "
32x3 "	"	25.834 "	26 "
34x3 "	"	27.834 "	28 "
36x3 "	"	29.834 "	30 "
26x2¼ "	C.	20¼ in.	21 "
*28x2¼ " interchangeable	"	21¼ "	*22 " interchangeable
*30x2¼ " "	"	23¼ "	*24 " "
32x2¼ "	"	25¼ "	27 "
34x2¼ "	"	27¼ "	29 "
36x2¼ "	"	29¼ "	31 "
26x3 "	"	19¼ "	20 "
*28x3 " interchangeable	"	21¼ "	*22 " interchangeable
*30x3 " "	"	23¼ "	*24 " "
32x3 "	"	25¼ "	26 "
34x3 "	"	27¼ "	28 "
36x3 "	"	29¼ "	30 "
28x3½ "	D.	20 11-16 in.	21 "
30x3½ "	"	22 11-16 "	23 "
32x3½ "	"	24 11-16 "	25 "
34x3½ "	"	26 11-16 "	27 "
36x3½ "	"	28 11-16 "	29 "
28x4 "	E.	19 11-16 "	20 "
30x4 "	"	21 11-16 "	22 "
32x4 "	"	23 11-16 "	24 "
34x4 "	"	25 11-16 "	26 "
36x4 "	"	27 11-16 "	28 "
28x4½ "	F.	18 21-32 "	19 "
30x4½ "	"	20 21-32 "	21 "
32x4½ "	"	22 21-32 "	23 "
34x4½ "	"	24 21-32 "	25 "
36x4½ "	"	26 21-32 "	27 "
28x120m-m & 5 in.	"	17 21-32 "	18 "
30x120 " & 5 "	"	19 21-32 "	20 "
32x120 " & 5 "	"	21 21-32 "	22 "
34x120 " & 5 "	"	23 21-32 "	24 "
36x120 " & 5 "	"	25 21-32 "	26 "
40x120 " & 5 "	"	29 21-32 "	30 "
		Circumference at Tire Seat.	
750m-mx 85m-m	D.	69 5-16 in.	
800 " x 85 "	"	76 1-32 "	
760 " x 90 "	"	70 3-16 "	
810 " x 90 "	"	76 in.	
870 " x 90 "	"	82¾ in.	
910 " x 90 "	"	86½ "	
1010 " x 90 "	"	101⅝ "	
820 " x120 "	F.	70 "	
850 " x120 "	"	74¼ "	
920 " x120 "	"	82¾ "	
1020 " x120 "	"	94 15-16 in.	

* Note that the 28x2½ and 30x2¼ tires are made interchangeable with the 28x3 and 30x3 tires. m Millimetres.

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IT WILL PAY YOU TO INVESTIGATE

THE **1909** *National*

THE LINE IS BETTER AND MORE COMPLETE THAN EVER

Model 9-35, 4-cyl., 4¾ x 4¾, 5-passenger Touring Car	**$2,750**
Model 9-40, 4-cyl., 5 x 5, 5-passenger Touring Car	**$3,700**
Model 9-50, 6-cyl., 4½ x 4¾, 7-passenger Touring Car	**$4,200**
Model 9-60, 6-cyl., 5 x 5, 7-passenger Touring Car	**$5,000**

Each National has the well-known National Ball-bearing Motor with new crank case oiler, two ignition systems (Bosch Magneto and Storage Battery) and all other tried and proven features of high grade modern motor car construction. Any of the above models can be furnished with Baby Tonneau body or as a Roadster.

Write for distributors terms and full particulars.

NATIONAL MOTOR VEHICLE CO., 1007 East Twenty-Second St. INDIANAPOLIS, IND.



Mayo Radiators are as Unobtrusive as Good Form

¶ They don't "spout" or "slop over," and are thoroughly effective.

¶ Mayo Radiators are their own reason for their general use on really high-grade cars.

¶ Mayo Radiators are built first and built as well as the finest kind of artisans working with the best materials and under the most favorable conditions can build, and their cost is based on their worth.

¶ Mayo Radiators assure that whatever troubles a car may have, they are not due to the radiator.

¶ Mayo Radiators are not within the price limit of cheap cars. Equally true it is that they are within the quality limit of all good cars selling at any price.

¶ A Mayo Radiator axiom:
If the rest of the car is as good as the Mayo Radiator, it's all right.

¶ Mayo Radiators are made in a Quality Shop at New Haven, Connecticut.

MAYO RADIATOR COMPANY

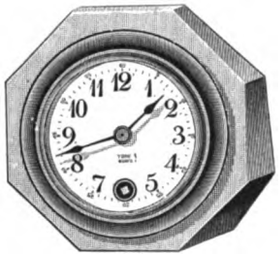
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A Few of Our Imported and Domestic Specialties

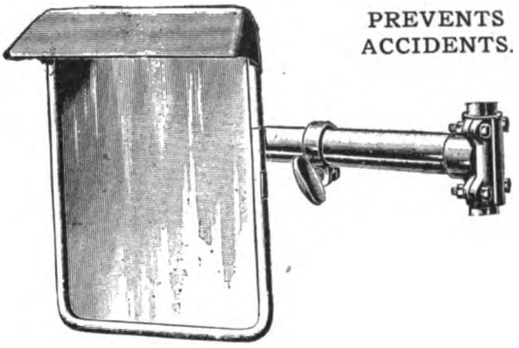


THE YORK CLOCK



The very latest design. High-grade in every respect. Has no projections or obstructions that can be broken off. Will run eight days. Has heavy polished brass case. Dial measures 2¾"
Price $7.50

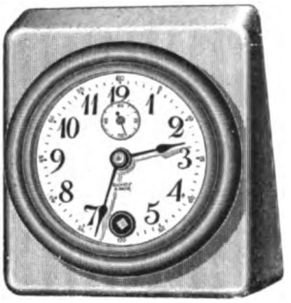
THE ARGUS MIRROR



See What's Coming!

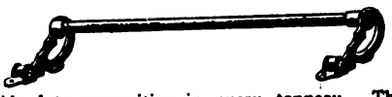
If you could do this, half the accidents would be avoided. With the Argus Imported Dash Mirror (protected by a hood from the sun's rays or rain) you have a clear view of the road behind without turning the head. Adjustable to any position.
Price, less shield..... $7.50
Price, with shield $9.00

THE SAVOY CLOCK



Specially designed to resist all jars and shocks. Has elegant quick-train movement. Dial is a French Porcelain, measuring 2¾". Dust, rain and thief proof. Will run eight days.
Price $10.00

FOOT RESTS



Absolute necessities in every tonneau. They enable the occupants to brace themselves in a comfortable position and prevent the accidental scratching and damaging of the body of the car.
Price, 32 in. long $2.50

ROBE RAILS



Keeps robes and wraps from being crushed or soiled in bottom of car. Made of heavy brass tubing, highly polished,
Stationary, 24 in. ..... $ .85
Adjustable folding rail 2.50

PIRELLI CABLE



That wonderful Italian cable that is used by every well-known auto manufacturer in this and other countries. Ask us to send you our sample card showing the different sizes and prices, made with rubber and cambric covers.

SPARK PLUGS



We carry a large stock of every imported and domestic plug on the market.

Renault Spark Plug	$2.50
A. V. Magneto Spark Plug	2.00
Bosch Spark Plug	2.00
Motorcycle Spark Plug	.75

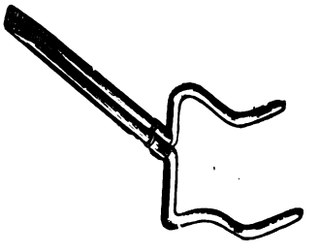
and many others.

STEERING PILLAR LAMP



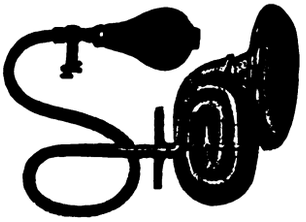
This lamp enables a driver to direct a powerful beam of light to any part of a dash board, enabling him to watch any of the indicators on the dash.
Price $6.00

FORK TIRE LEVER



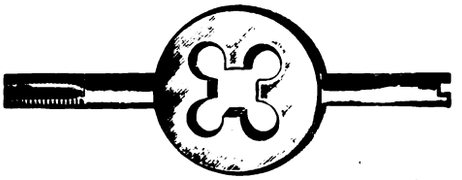
A new style fork lever tire tool for removing and replacing security lugs and tubes in tires. Equipped with rollers, which prevent damaging tire while removing.
Price ..... 50 cents

BLANCHARD HORNS



THEY HAVE THE SOUND that made imported horns famous. There are over twenty-one different styles in up-to-date designs. Let us send you our Blanchard Horn catalogue.

ROYAL VALVE TAP AND DIE



A handy little tool for unscrewing valve insides and cutting new threads on the outside or inside of valve. Should be in every tool kit.
Price ..... 25 cents

The dealer who desires to handle the BEST line of Automobile Specialties, would do well to investigate our line of splendid and profitable goods. Our special Show Catalogue will be sent on request.

THE MOTOR CAR EQUIPMENT CO. 1727 Broadway 55 Warren St. New York

Manufacturers, Importers and Wholesalers of Automobile Accessories.

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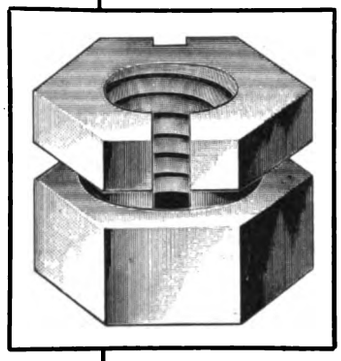
"Locking the door after the pony is stolen"

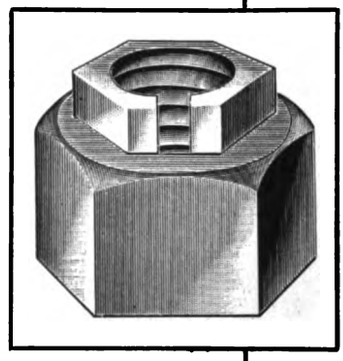
is a good deal like postponing the use of

Columbia Lock Nuts

Now

for it's only a postponement at best. Why not take a double-twist on the forelock of old Father Time and incorporate the use of Columbia Lock Nuts in your construction BEFORE you have occasion for regrets? Columbia Lock Nuts are in general use and are regarded as a necessity by some of the biggest railroad systems in the country. They ought to be a double necessity on automobiles. They are already used by many prominent makers. They should be used on every automobile everywhere.





¶Columbia Lock Nuts simply cannot work loose. Vibration, even the constant vibration of solid tires, cannot affect or loosen them. They are automobile insurance of the very best kind and their cost is not a factor. Let us prove our case.

COLUMBIA NUT & BOLT COMPANY

Bridgeport, Connecticut

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AT THE PALACE SHOW

Their advance into third place in tire equipment by a wide margin, is merely an incident in the

GROWING PRESTIGE

OF

"Firestone"

TIRES

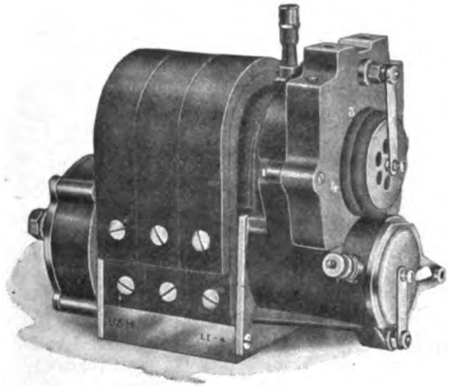
It again emphasizes the trend of public preference away from the ordinary popular priced tires in favor of the best possible tire service.

In the commercial vehicle section Firestone Side-wire tires, as usual, led the nearest competitor three to one.

FIRESTONE TIRE & RUBBER CO., Akron, Ohio.

Branches and Agencies Almost Everywhere.

The Magneto That Starts Itself



THE PRACTICAL SOLUTION OF THE MAGNETO PROBLEM

It does not take an exceptional magneto to give fairly good service on a small car. A large car, however, is a problem of a different order.

When the cylinder bore exceeds four inches diameter, quick turning of the starting crank to generate a spark from the magneto requires both strength and skill. The owner of such a car is reminded that he has a magneto every time he stops the engine, and frequently he will burn gasoline to keep the engine going, sooner than stop and restart.

A magneto handicapped in this manner cannot be called a perfect instrument.

The largest engines used in automobiles are started as easily as the small if they are fitted with the UNTERBERG & HELMLE SELF-STARTING MAGNETO, TYPE L. E. No other magneto does all that a magneto should do. No other is free from the necessity of adding a battery and complicated wiring to render it manageable on large engines at low speed.

J. S. BRETZ COMPANY

Sole Importers, Times Bldg., New York.

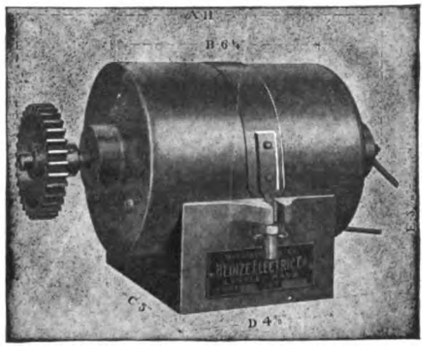
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HEINZE IGNITION APPARATUS



Standard ALAM 7/8″-18 thread

HEINZE IMPROVED MICA SPARK PLUGS



Heinze Low Tension Magneto operating through vibrating coil to spark plug.

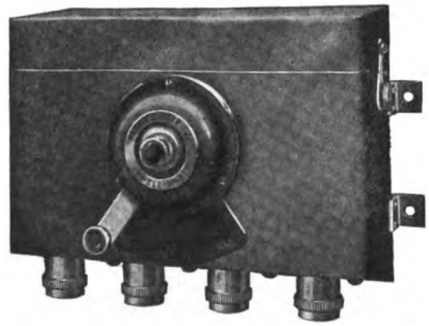
HEINZE IMPROVED MICA SPARK PLUGS



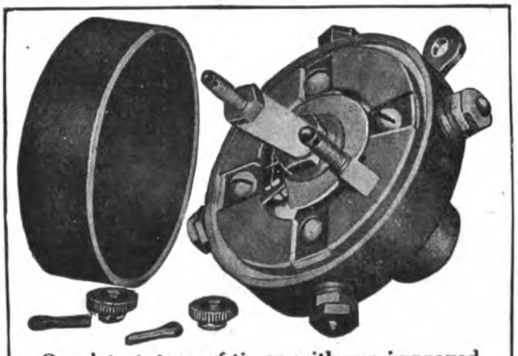
Regular 1/2″-14 Pipe Thread



Showing Magneto disassembled.



Our latest type coil supplied with kick switch for operating either on Magneto or Battery.



Our latest type of timer with our improved wipe contact, acknowledged by all leading Motor Car Makers to be the most superior type of construction.

HEINZE ELECTRIC COMPANY

Send for our latest catalogue.

Factory and main office, LOWELL, MASS

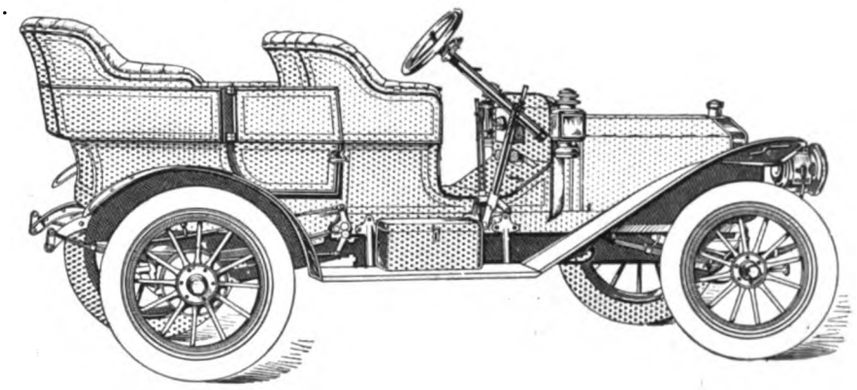
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See the $1,500 Car at the Chicago Show

THE CAR—With 4 inch tires instead of 3½ inch.

THE CAR—With the high grade magneto free.

THE CAR—With $300 worth of actual automobile value in it that with any other $1,500 car would cost you extra.



Don't pay $1800 for a $1500 car, nor $1500 for a $1200 car.

See the $1500 car that has all of $1500 value in it.

See if this car doesn't meet your ideal before you decide on some car that falls short of it.

We have built and sold in the last 8 years $11,000,000 worth of low priced Mithcll cars with five bearing crank shafts and not one that we know of has broken.

It remains for you to decide which you want.

What Larger Tires Mean

Then there's the question of tires, and if you're a motorist you know what that question means.

The Mitchell "30" $1500 car is equipped with 4 inch tires.

Yet cars that weigh more have 3½ inch tires.

If you want 4 inch tires with other $1500 cars you must pay extra for them—$50 extra.

The reason makers work toward light weight is to save your tire expense.

But we doubly protect you with light weight and with tires that are ½ inch larger than the tires others think large enough.

No Other Car of Such Value

In the Mitchell "30" at $1500 is included $300 worth of actual automobile value that with any other $1500 car would cost you extra.

Other cars that lack this value should be sold for $1200.

In fact to get equal value elsewhere will cost you at least $1800.

And please remember that we're not beginners in the making of $1500 cars—that we're not experimenting at your expense when we sell you a car at this price.

We are the pioneer low priced car builders of the country. And the public in the past 8 years has valued the Mitchell car at $11,000,000 by paying that much for our product.

No car but a car that has stood the tests would have such an approval put on it.

And do you know of a fairer judge than a disinterested public?

Isn't the car that has pleased so many the most likely to please you?

Note These Specifications

See If They're Not What You Want In Your Car

It has a wheel base of 104 inches. The body is wholly of metal. Its four cylinders are case separately. 28-30 horsepower.

The engine is housed under a big, handsome hood.

The springs are of vanadium steel.

Aluminum castings are employed wherever possible; only we go to the trouble and expense of strengthening them with bronze where thter is wear and strain.

The wheels are big—thirty-tdo inches—fitted with detachable rims and four-inch tires.

There are two complete ignition systems—Magneto and a regular battery system.

The lubricating system is the best that we have found in eight years of experience.

The transmission is of the best selective sliding gear type—as in $5000 to $7000 cars.

The battery and tool boxes, made of baked enameled steel. are furnished without extra expense to you.

The tonneau is detachable—and you have your choice of either tonneau, surrey body, rumble seat roadster, or runabout deck at $1500.

See this car at the Chicago Show February 6th to 13th where you'll have achance to compare it with all other cars selling at prices around $1500.

Let the result decide which car is best for you.

Send the coupon for detailed description, to enable you to check this car up with others at its price.

MITCHELL MOTOR CAR CO.,
574 Mitchell St., Racine, Wis.
Standard Manufacturers, A. M. C. M. A.

You may send me a detailed description of your new $1500 Mitchell "30."

Name .....

Address .....

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BRISCOE MANUFACTURING CO.

Manufacturers of

AUTOMOBILE COMPONENTS

Including

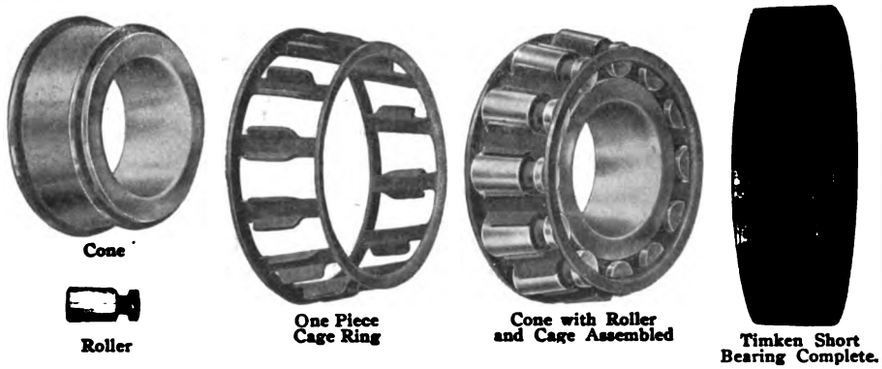
RADIATORS, FENDERS, HOODS, TANKS, AND ALL OTHER SHEET METAL AUTOMOBILE PARTS

We repair all makes of Radiators at both plants

Write either plant for Catalogue and Quotations

DETROIT, MICH. **NEWARK, N. J.**

New Series TIMKEN Short Bearings



In offering the Automobile trade our **New Series Timken Short Bearings,** we do so with the assurance that they are made from the same carefully selected steel and subjected to the same severe tests as our standard size Bearings.

The **New Series Short Bearings** are designed for use in axles where the bearings space does not permit the use of our regular series.

These Short Bearings can be used on any axle, transmission, or other places where Annular Bearings can be used. They carry **a much greater load** than Annular Bearings of the same length, **are smaller in diameter** and in addition will take as much **end thrust** as they do **radial load.**

Every bar of steel entering into **Timken** Products is made to the **Timken** analysis chemically—and tested to the **Timken** test physically—which means a rejection of **45 per cent.** of every ingot before metal of suitable density and soundness for **Timken** Roller Bearings can be obtained. These new Short Bearing Rollers are made from best nickel steel.

This is one reason why **65 per cent.** of the makers of high-grade Automobiles and over **90 per cent.** of the commercial truck builders of this country use **Timken** Roller Bearings. **WRITE FOR CATALOG AND PRICES**

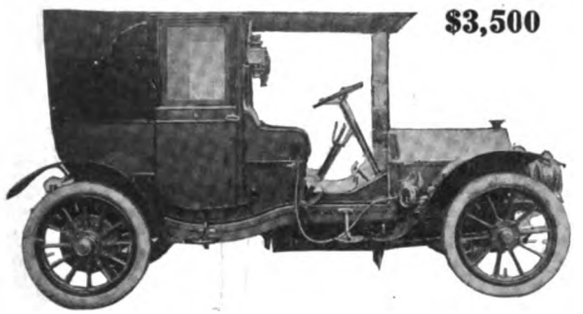
THE TIMKEN ROLLER BEARING AXLE CO., Main Office, CANTON, O.

Branches: 10 E. 31st St., NEW YORK **429 Wabash Ave., CHICAGO**

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PALMER-SINGER

ALL CARS SOLD BY US ARE LICENSED UNDER SELDEN PATENT AND GUARANTEED FOR ONE YEAR.



The Palmer-Singer Town and Country Car, 1909 Model, Type XXX-2, is now being exhibited and delivered. It is the most serviceable car on the market today. Its 28-30 H. P. motor provides ample power to take its full complement of passengers on long, hard tours over any road at a very good speed. Closed, it is a beautiful, luxurious Town Car, seating four inside, ideal for the purpose and far superior to many foreign makes at double the price. A glance at the specifications will show the remarkable value it offers.

Nickel steel is used to give lightness and strength. Imported F. and S. ball bearings exclusively. Bosch high tension magneto and multiple disc clutches. Drop forged I beam, front axle— four-speed selective type, sliding gear transmission with direct drive on third speed. All brakes equalized, all expanding type and on rear wheels. Universal joints on all steering connections. Shaft driven, all moving parts enclosed in dustproof cases.

Palmer & Singer Mfg. Co.

1620-22-24 Broadway, N. Y. 1321 Michigan Ave., Chicago

SOLE DISTRIBUTERS THE SIMPLEX

Winner of International 24-hour race at Brighton Beach, Oct. 2d and 3d, and holder of 16 new World's Records.

Exhibiting at
Madison Square Garden Show

The Simplex 1909 chassis is now being exhibited on our sales floor.

Don't Guess Which Tire Is Best— Here Is Proof

In New York City there are 1,000 Taxicabs.

On the tires, more than on any other one thing, depends the profit of the Taxicab business.

You may be sure that the owners of the 1,000 Taxicabs did not GUESS.

They TRIED all the tires that were offered, and checked them up with the TAXIMETER—which told them the mileage unerringly, indisputably.

There was no personal preference. No friendship. No prejudice. It was a cold-blooded BUSINESS test.

And the result: 800 out of the 1,000 Taxicabs in New York, operated by several competing owners, have contracted for Goodyear Tires to be used EXCLUSIVELY.

GOODYEAR

To understand why the Goodyear Tire stood head and shoulders above its competitors in this Taxicab test, you must understand, first, the difference between a *moulded* tire and a *wrapped tread* tire.

The moulded tire is built up, layer by layer, on an iron core. Over it is clamped an iron mould. When the heat of the curing process is applied, that rubber expands—and in expanding, forces a perfect union between the various layers of rubber and of fabric.

With the moulded tire, so far so good.

But in building up that tire on its iron core, a skilled workman lays fabric on fabric, rubber on rubber.

Yet, skilled as he may be, he cannot wholly avoid wrinkles, irregularities, unevenness, which, under the pressure of curing, multiply themselves into *hidden* weaknesses and defects.

Some tires, instead of being cured on an iron core, are cured on an *air bag*, which is really an extra strong inner tube.

When the air bag has been inserted in the built-up tire, strong tape is wound around it, and then it is cured in live steam.

The advantage of the wrapped tread process is that the air bag, full of compressed air, smoothes out these wrinkles and irregularities and prevents those hidden weaknesses and defects.

The advantage of the wrapped tread process is, for this reason, immeasurable.

But the tire made by this process does not get the *terrific squeeze* that the moulded tire gets when the heat expands it between core and mould—the squeeze that forces the rubber into the fabric, making a perfect union between fabric and rubber.

In losing that squeeze, it loses durability, strength, unity—which more than offsets the fact that the wrapped tread tire can have no hidden wrinkles or unevenness.

Obviously, the tire you ought to have is the one which is built up on an iron core, *squeezed* the same as a moulded tire—and *finished* on an air bag to smooth out the irregularities.

There is just one tire made in this way—*only one*. It is the Goodyear Quick Detachable.

This one point of superiority is reason enough why the Goodyear Quick Detachable should have won the Taxicab test.

But there are other reasons—other superiorities.

The Goodyear Quick Detachable is, for example, an *oversize* tire.

The Goodyear tire is made larger than the specifications call for. It is simply 15% larger than any other tire marked the same size.

Among the countless other Goodyear superiorities is the patent rubber-rivet breaker-strip, which makes it impossible for the tread to split or peel from the carcass of the tire.

Goodyear superiorities extend from the raw materials to the workmanship—from scores of exclusive Goodyear processes to the Goodyear piano-wire tape which would hold the tire on the rim, even if both the detachable flanges were off.

When you think of tires, think of that Taxicab test.

Those 800 Taxicabs in New York are doing 60,000,000 tire miles a year!

More than 1,000,000 tire miles a week!

And what is true of the Taxicabs of New York is equally true of practically every large Eastern city where Taxicabs are used.

Eight out of every ten of them are using Goodyear tires exclusively.

Think of that, you who have bought tires because you have heard of their use on some tour or some race!

Think of that, you who blindly groped at the tire problem—you who have bought tires wholly by hearsay!

Don't you see, now, that tire-buying has been reduced to a *business* basis?

Isn't the tire that the Taxicab took—isn't *that* the tire for you?

A hundred times more about tires than can be explained here, can be found in our book, "How to Select an Auto Tire."

Send for it now. It is free.

The Goodyear Tire & Rubber Co., Arthur St., Akron, O.

THE GOODYEAR TIRE & RUBBER CO., Arthur St., Akron, O.

I want to know more about tires. Send on your free book, "How to Select an Auto Tire."

Name _____

Address _____

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GABRIEL 1909



In order to maintain the high standard which the products of our factory have acquired, many improvements have been made in the 1909 models of The Gabriel Horn, The Gabriel Shock-Absorber and The Gabriel Cut-Out Valve. Gabriel Products still set the pace which competing lines try to follow.

A Polite Request



The rich mellow notes of THE GABRIEL HORN act as a polite request, not a harsh demand. It warns without frightening. By a new device its sweet, musical three note tone used for city purposes can be caused to rise in unison for a penetrating warning on country roads. The Gabriel Horn is used exclusively on the personal cars of King Edward of England, Emperor William of Germany, and other crowned heads of Europe.

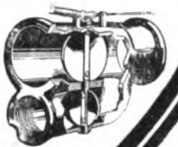
1909 Gabriel Horn and Cut-Out Valve

We have perfected a new valve which is used both for operating exhaust horn and for cut-out purposes. For cut-out purposes, remove the disc in main channel thereby relieving back pressure from muffler through additional opening of 1¼ inches. Made to fit exhaust pipes 1" to 2½" outside diameter. Warranted to not stick under any condition.

Going Up

is pleasant enough, but coming down with a thud is what makes the nerves quiver and cry for

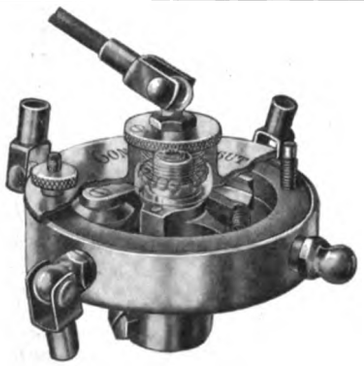
1909 Gabriel Shock Absorbers

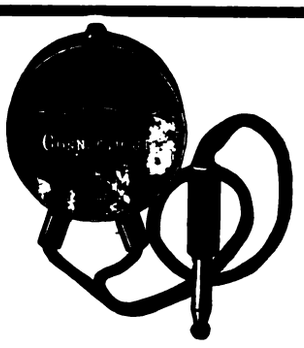


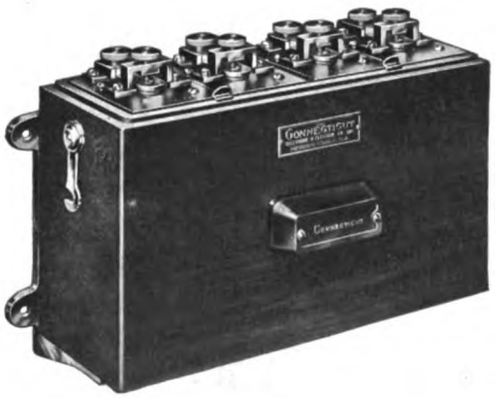
A retarding friction gradually applied in proportion to the shock takes up all jolts and jars, and makes riding over rough roads or bumpy pavements a positive pleasure. The 1909 Model has improvements which give increased bearing surface, eliminate noise or rattle and greatly increase its efficiency and durability. Thermoid used for friction pad. Can be attached to any car or any type of spring. Write for booklet illustrating and describing our 1909 products.

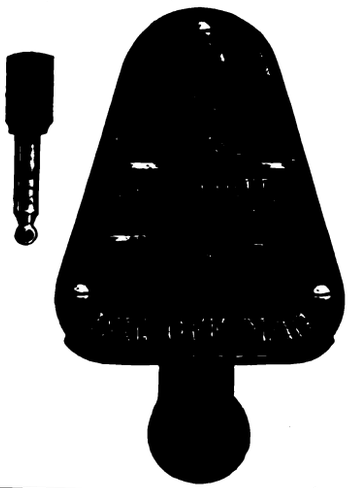
Gabriel Horn Mfg. Co.
1417 East 40th Street
Cleveland, Ohio

CONNECTICUT











IF it's a COIL (1, 2, 3, 4 or 6 Cylinder), Distributor, Timer, Terminal, Coil Current Indicator, Ammeter, Switch or Exploring Lamp, we have them in Quality a little better than the best.

SEND FOR CATALOG 14-W.

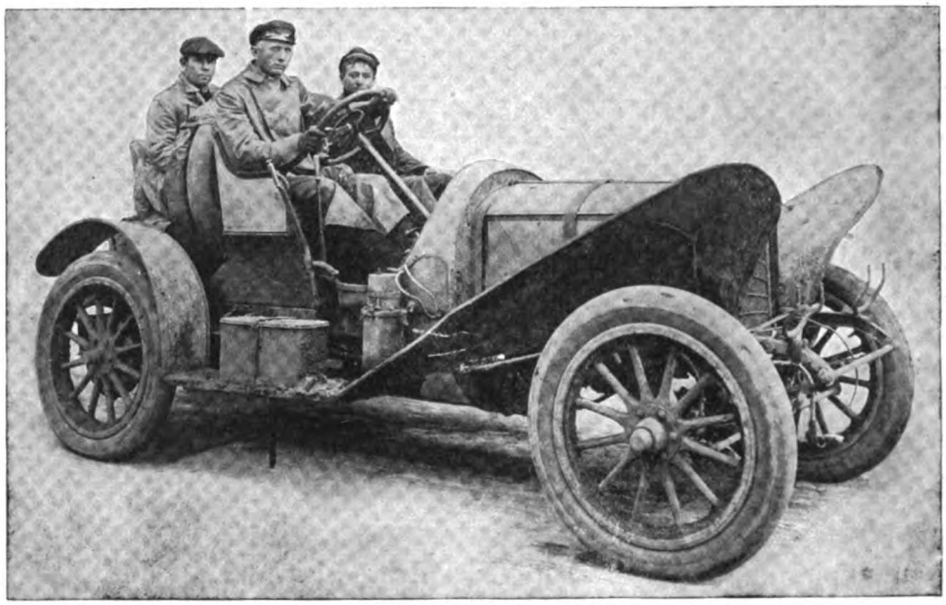
CONNECTICUT TELEPHONE AND ELECTRIC CO.
85 Britannia Street, MERIDEN, CONN.

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Rambler

Breaks Los Angeles-San Diego Record

New 32-H. P. Four-Cylinder Rambler Roadster Beats By 45 Minutes Time Record Established By Six-Cylinder Car And Is Awarded The Chanslor-Lyons Challenge Cup.



THREE hundred and thirty miles in ten hours and thirty-two minutes and not a single stop for repairs. That is the new round trip record between Los Angeles and San Diego, California, just established by the new 32 horse power, four-cylinder Rambler roadster.

This is the second time the Rambler has made this sensational run and each time it has broken all preceding records.

The first time the Rambler made the run in 11 hours and 31 minutes. Shortly afterwards a six-cylinder car reduced this time by a bare 14 minutes. The Rambler went after the record again, this time reducing its own time by nearly one hour.

There are certain mechanical features of the Rambler which make it possible for it to excel in consistent road performance any other car at any price. If you care to know what these features are, send us your address and we will be glad to send you our new catalog.

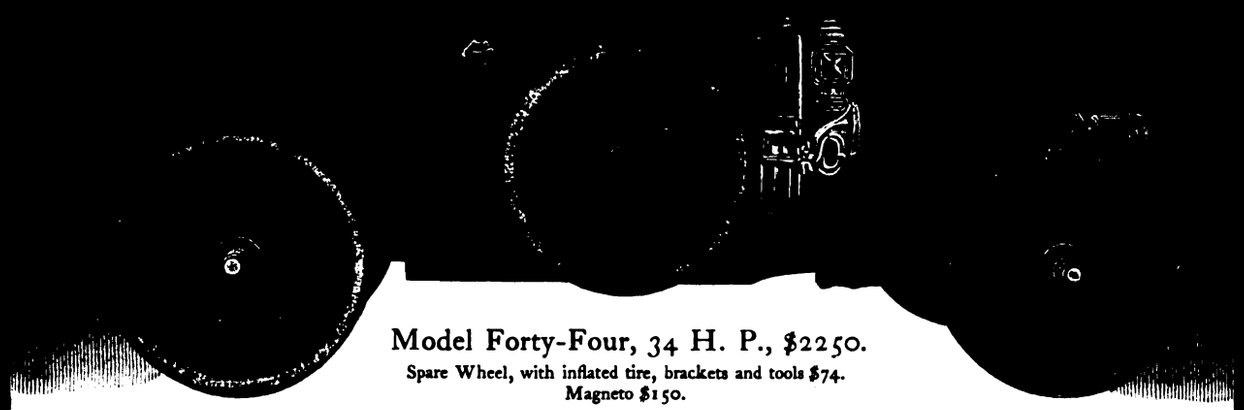
THE CAR OF STEADY SERVICE

Thomas B. Jeffery & Company, Main Office and Factory, Kenosha, Wis.

Branches and Distributing Agencies:

Chicago, Milwaukee, Boston, New York, Cleveland, San Francisco. Representatives in all leading cities.

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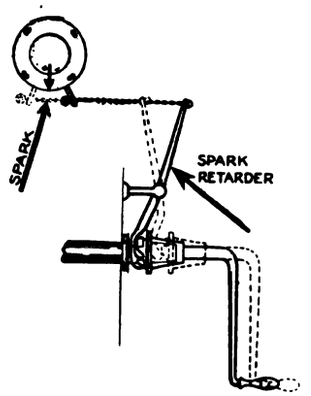


Model Forty-Four, 34 H. P., $2250.
Spare Wheel, with inflated tire, brackets and tools $74.
Magneto $150.

THE SAFETY SPARK RETARDER

There is absolutely no danger in cranking a Rambler when properly adjusted. The starting crank then cannot engage until the spark has been automatically retarded.

Every one who has had the unpleasant experience of a premature spark in starting an automobile will appreciate the Rambler safety starting device. This prevents an explosion ahead of center, even though the operator forgets to retard the spark.



You cannot engage the lug on the shaft with a tooth on the starting crank until the spark-retarder lever has moved from the position of the dotted line to the position shown, thus retarding the spark.

Rambler

The Car with the Offset Crank Shaft

Seven passenger model, forty-five horse power with offset crank shaft, $2500. Other models, $1150 to $2500. Write for catalog describing in detail Rambler offset crank shaft, Spare Wheel, straight line drive and other exclusive features of the new Rambler models.

THE CAR OF STEADY SERVICE

Thomas B. Jeffery & Company, Main Office and Factory, Kenosha, Wis.

Branches and Distributing Agencies:
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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, January 7, 1909. No. 15

COIL MAKERS PREPARE FOR FIGHT

Eleven of Them Refuse to Recognize Certain Patents and Form an Association —The Officers Chosen.

Sparks may be said to have commenced to fly in the coil trade. Things began to warm up when early last month it was made known that the Autocoil Co. and the Connecticut Telephone and Electric Co. had pooled their patents applying to coils having removable units and had formed the patent-holding Unit Coil Co. The most important patents involved are numbered 878,435 and 884,116, which all other manufacturers are alleged to be infringing.

The latter were given due notice of the claim and were warned that they must "step up to the captain's office," recognize the patents and make their peace. This they declined to do and as a result the Allied Coil Manufacturers Association was formed for protective purposes at a meeting held yesterday at the Prince George Hotel, New York, when the following officers were chosen: F. W. Brandow, president; C. T. Byrne, vice-president; J. O. Heinze, secretary-treasurer; executive committee, W. P. Woods, Dalton, Mass.; Charles F. Splitdorf, New York, and F. A. Woods, Lansing, Mich.

The members enrolled are as follows: C. F. Splitdorf, New York; Pittsfield Spark Coil Co., Dalton, Mass.; Heinze Electric Co., Lowell, Mass.; Brandow, Jacobson & Co., Pittsfield, Mass.; Kokomo Electric Co., Kokomo, Ind.; National Coil Co., Lansing, Mich.; New York Coil Co., New York, N. Y.; Duplex Coil Co., Fon du Lac, Wis.; C. Per Lee Noxon, Syracuse, N. Y.; Chicago Coil Co., Chicago; American Coil Co., Foxboro, Mass.

Immediately after organizing the association issued a statement declaring it to be the purpose of its members to "defend their legal rights to manufacture, use and sell interchangeable unit spark-coils," and that they "will in defense of same, defend any suit instigated against any member of this Association, or any of its customers, involving the basic principle of interchangeable unit coil construction."

The statement concludes with a request that their customers forward to the members of the association "all communications of a threatening nature received from any source."

Overland Obtains Two More Buildings.

That the Overland Automobile Co., Indianapolis, means to be in position to bid for business on a big scale and to meet any demand that may arise is quite clear. They have just purchased the former plant of the Marion Motor Car Co. and leased the building previously occupied by the Speed Changing Pulley Co., both of which are in Indianapolis and which will be operated in connection with the present Overland plant.

Hazlitt Joins the E. M. F. Staff.

James Hazlitt, formerly chief engineer of the Garford and Ranier companies, has engaged in a similar capacity with the Everitt-Metzger-Flanders Co. of Detroit. Will Kelly remains with the latter company as chief designer.

Fuller to Produce a Motor Buggy.

The Fuller Buggy Co., Jackson, Mich., one of the largest and oldest manufacturers in the buggy trade, have a motor buggy about ready for marketing. It employs a two cylinder, 10 horsepower engine.

Omaha Advances Its Show Dates.

The dates of Omaha's fourth annual show have been advanced from March 1st to 6th to February 24th to 28th, inclusive. It will be held under the auspices of the Omaha Automobile Show Association.

Reliable Dayton Opens Southern Branch.

Reliable Dayton Motor Car Co. of Chicago have opened a branch in Memphis, Tenn., who will be the distributing point for Tennessee and Arkansas. J. D. Kinney is in charge of it.

TARIFF TILTER FIRES VOLLEY OF I'S

Spectacular Threats Add Humor to Situation—Will "Sic" Government on A. L. A. M. and Sue Everybody—Maybe.

Only this week did it become known how truly joyous is the state of mind existing in Flint, Mich., where is located the automobile factory the general manager of which compelled newspapers to take notice of him by appearing before the Ways and Means Committee and supporting the plea of the importers for a reduction in the import duty on motor cars.

Circulation of the printed brief opposing any reduction in the tariff which was filed by H. B. Joy, president of the Packard Motor Car Co., and Benj. Briscoe, president of the Maxwell-Briscoe Motor Co., representing the American manufacturers, served to make public the extent of the eruption of Michigan gray matter. It is disclosed by a hitherto unpublished telegram to Mr. Joy from the general manager in question which is included in the brief, in which connection it is fair to remark that the gentleman is credited with holding the opinion that the way to obtain advertising free of cost is to "do something spectacular," as actors and actorines long ago discovered.

In his message to Mr. Joy, the Michigander summarizes all the dreadful things he says he contemplates doing not only to the Association of Licensed Automobile Manufacturers, but to its individual members. His company is on the roll of the organization but is in bad standing owing to its failure to meet certain obligations. In order to get on the roll, it bought the Selden license of a retiring member, but despite that trifling fact, the manager now declares: "I am not in sympathy with the methods and policies of the Licensed Association and I am unwilling to be a party to its attempt under a most craftily conceived and drawn contract, to monopolize the industry through control of a worthless patent."

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He employs the personal pronoun throughout his telegram and further avows that "I desire a cancellation of my membership and am seeking such cancellation in the courts." But as he or his company signed an agreement to pay certain sums and is now being sued therefor, the mean spirit which binds him to the association despite his desires is apparent to all. Nor is this all that weighs so heavily on the personal pronoun's brain tank. For he wants it known that "I intend to lay the whole matter before the Department of Justice."

As if this awful threat is not sufficiently terrifying and spectacular, Manager "I" announces that "I intend to bring suit against the individual members of the association for breach of contract and for attempt to ruin my business," which, en passant, has been so badly damaged that it was never so large as this year—so large that the great green public is to be given a chance to participate in it for the modest sum of $1 per share, a price within the means of even clerks, farmer boys and rural preachers. Few mining stocks offer rarer opportunities. In his concluding flourish, the wielder of the personal pronoun tells what he says is the reason why he opposes the practically united American trade, and why he would have the tariff reduced and the door thrown wide open for the foreign car. It is simply because "I consider that the present duty is a most outrageous extortion upon the buyers of large cars," hence his marvelous benevolence and desire to save money for the hungry and suffering millionaires.

The brief, which save for some correspondence, merely puts in printed form the facts and figures previously made public and printed in the Motor World, includes also a copy of a trenchant telegram from Benj. Briscoe to the lawyer who had preceded by several days the manager of personal pronouns before the Ways and Means Committee; the lawyer is generally supposed to have been in the employ of the Michigan manufacturer. In the course of his speech, the attorney implied that "a considerable portion of the industry is favorable to a tariff reduction on automobiles." Mr. Briscoe was polite. Instead of using the short and ugly word, he wired the lawyer that his statement was "not in accordance with the facts," and continued:

"I challenge you to produce any and all telegrams you referred to, substantiating your representations; I cannot believe that you would deliberately distort the facts, or that you intend purposely to convey a wrong impression, and I, therefore, await with interest a statement from you that will be supported by facts."

The attorney's response was in keeping with the practices of his profession. He said:

"Have requested an auto manufacturer who has written me that your proposition is silly to answer you direct. Also two others say that one-half of present duty is enough."

FELICITATIONS AT SHOW LUNCHEON

Success of Palace Exhibition the Theme of Bright Speeches—Compliments for Manager Reeves.

That the long list of automobile shows which have been held during the past decade not simply have had the effect of instructing the public and of impressing upon it the magnitude and importance of the growing industry, but that they also have served as a "clearing house for ideas" developed by individuals connected with it, was one of the sentiments expressed at the annual show luncheon of the American Motor Car Manufacturers' Association, which was held at Hotel Manhattan on Tuesday, 5th inst. The fact that the shows have served this purpose has frequently been commented upon, but it was not until the industry had reached its present firmly established position that it became possible to realize the great importance of just that service.

With a couple of hundred members of the association and their invited guests present, and a spirit of absolute peace and accord the affair passed off amid a host of felicitations on the success of the present show, the occasion being all the more one for rejoicing because it is the first show in which the A. M. C. M. A. has reigned supreme and alone. Indeed, so much of harmony prevailed that none of the criticisms of the industry or suggestions for its future conduct were offered which have signalized the utterances at former occasions of a similar nature.

Much gentle mirth was provided by Counsel Job E. Hedges, of the association, who, among other things, congratulated the organization upon its display of "almost human intelligence" in hiring an attorney as its first act. His mood was echoed by Benjamin Briscoe, chairman of the association, who, in the latter part of his remarks, paid a glowing and justly deserved tribute to the forceful and energetic service displayed by manager Alfred Reeves in his administration of the affairs of the show. Briscoe said in expressing the welcome of the A. M. C. M. A. to its guests:

"We are especially glad to notice here several who do not happen to be in our own particular household of faith, though I am pleased to say we are getting closer and closer together. Did it not appear vain, I would congratulate the entire automobile industry on the great success of this show, but just bear with me when I say, 'They have got to go some to beat it.'

"Surely it is, in attendance, in business interest manifested, in completeness of preparation, one of the greatest automobile shows ever held in this country. Publicly and here I want to thank the Show Committee members, Messrs. Smith, Hollander, Post, Owen and Mora, for the good work that they have done.

"I feel impelled also to voice the most universal thought held in connection with this show. We all know that it is a more valuable attribute to be able to pick 'good ones' than to be 'good ones' yourselves. The Committee of Management of our association picked out out not only a 'good one,' but one that makes good anywhere you put him—a manager 6½ feet tall in sincerity, in judgment, in intuition, and in energy, and in all else that goes to make a true, a noble, and an efficient man. Mr. Manager Reeves, on behalf of this association and on behalf of the exhibitors I thank you most heartily."

H. O. Smith, chairman of the show committee, it was who defined the full utility of the show already given.

"While this industry has already taken a position of prominence among the first in the country, who would attempt to predict its limitations five or ten years hence?" he said. "The automobile shows have unquestionably supplied their part in the great march of progress. While it is a fact that most practices employed in the modern motor car are old mechanics, being merely put to new uses, yet experience was necessary to guide the builders in determining the conditions to be met and the best way to overcome the obstacles.

"The shows have proved a clearing house for ideas, until today with the wonderful fundamentals charcterizing each type we can agree that we have gone far toward standardization. The shows have also had the effect of not only interesting the public in motor cars, but impressing the importance and magnitude of the industry. May I add in conclusion that the management feels grateful to the exhibitors, the dealers and patrons who have contributed to the success of the Ninth International Automobile Show and made it the greatest ever held in point of attendance, general interest and actual business transactions."

Robert Lee Morrell, representing the Automobile Club of America, rendered a tactful compliment to the A. M. C. M. A. on its success in "going it alone," after its several years of joint management with the automobile club. Other speakers who contributed their share of merriment and optimism were Henry H. Duncan, who voiced the gratitude of the dealers to the management, and S. H. Mora, of the show committee. As mementos of the occasion the guests were presented with ash trays of artistic design, which were well worthy of their purpose of serving as souvenirs of the show season.

Merrick Starts for European Visit.

George P. Merrick, resident director of Spare Motor Wheel of America, Ltd., manufacturer of Stepney wheel, sailed for Europe yesterday. The chief purpose of his visit is to attend the directors' meeting, which takes place January 15th, at Cheltenham, England.

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EXPORTS RESUME UPWARD TREND

November Gains in Sharp Contrast with October Losses—The United Kingdom and Mexico Show Recovery.

Statistics of exports for the month of November present some gratifying contrasts to the figures for the preceeding month. The total of business for the month was $187,920, as against $173,552 for the corresponding month last year, a gain of $14,368, as against a decline of $104,328 in October shipments. To this gain the United Kingdom, which contributed largely to the previous month's loss, contributes a gain of $7,480; while Italy, which was one of the brightest spots in that month, repeats its good showing by another jump, from $315 to $16,000. Germany advances from $6,136 to $7,337. South America again shows a decline, from $12,014 to $5,567, but Mexico redeems herself from the October falling off by an increase from $15,662 to $34,359. Other gains are shown in British North America, the West Indies and Bermuda, Africa and Other Countries. France declines from $26,304 to $9,418.

For the eleven months ending with November the total is $4,684,423, as compared with a total of $5,455,540 for the corresponding period in 1907. Only two of the geographical divisions show a gain, Other Asia and Oceania advancing from $91,162 to $118,491, and the division known as Other Countries nearly doubling its purchases, the figures being $22,084 as against $11,466 for the corresponding period last year. The heaviest losses are in Mexico, which declines from $573,116 to $283,395; British North America, from $1,145,564 to $1,075,366; West Indies and Bermuda, from $249,637 to $159,586; British Australasia from $175,356 to $75,831, and Other Europe from $272,290 to $204,178.

The following table shows the record in detail.

	November		Eleven Months Ending November		
	1907	1908	1906	1907	1908
Automobiles and parts of	.....	.....	*$2,356,110	.....	.....
†Automobiles	$142,946	$145,070	‡1,610,426	$4,861,622	$4,116,476
Parts of	30,606	42,850	200,496	593,918	567,947
Exported to—					
United Kingdom	49,419	56,899	1,110,617	1,671,680	1,661,974
France	26,304	9,418	305,506	587,886	548,283
Germany	6,136	7,337	128,181	170,186	158,804
Italy	315	16,000	241,258	242,660	237,519
Other Europe	4,616	1,467	207,196	272,290	204,178
British North America	20,585	28,342	847,272	1,145,564	1,075,366
Mexico	15,662	34,359	678,280	573,116	283,395
West Indies and Bermuda	13,633	22,469	230,187	249,637	159,586
South America	12,014	5,567	142,311	220,933	107,244
British East Indies	6,606	420	32,832	35,556	24,077
British Australasia	4,439	666	147,116	175,356	75,831
Other Asia and Oceania	13,648	3,394	72,443	91,162	118,491
Africa	109	200	16,100	8,048	7,591
Other countries	66	1,382	7,733	11,466	22,084
Total	$173,552	$187,920	$4,167,032	$5,455,540	$4,684,423

* Figures are for six months, January to June, 1906. † Number not stated prior to July, 1906. ‡ Figures are for July to November, 1906, inclusive.

Credit Association Chooses Directors.

At a meeting of the Automobile Trade Credit Association, at the Murray Hill Hotel, New York, on the 5th inst., W. B. Lasher, of the Weed Chain Tire Grip Co., and W. P. Berrien, of the Firestone Tire & Rubber Co., were chosen as directors to succeed themselves, while E. C. Wilcox, of the Connecticut Telephone & Electric Co., became a new member of the board. The election of general officers for the Association takes place on the first Tuesday in February.

Continental Gives Its Forces a Spread.

Among the semi-private trade gatherings during the week of the Palce show was a luncheon tendered by the Continental Caoutchouc Co., of New York, to its sales force and representatives. The spread took place in the Indian room of the Hotel Astor, New York, on Tuesday, 5th inst.

American Leatherette Creditors to Meet.

W. H. Hotchkiss, referee in bankruptcy of the American Leatherette Mfg. Co., Buffalo, N. Y., has called a meeting of the creditors for January 20th. After the meeting, if no objection is entered, the property will be offered at public sale.

L'Hommedieu Joins the Apperson Forces.

Wallace L'Hommedieu, formerly with the Autocar Co., and the Electric Vehicle Co., has recently joined the forces of the Apperson Bros. Automobile Co. He will act as general traveling representative.

To Represent Columbia Nut in New York.

Daniel L. Tower, 107 Chambers street, New York, has been appointed metropolitan sales agent of the Columbia Nut & Bolt Co. He of course will carry a full stock of the famous Columbia lock nuts.

Maxwell-Briscoe Will Try Spare Wheels.

The Maxwell-Briscoe Motor Co. have placed an order for 50 Stepney spare wheels. It is their purpose to give them an exhaustive trial.

POPE MOTOR CAR SOLD AT LAST

New Toledo Corporation to Take Over Old Company—Final Court Hearing Fixed for January 11.

After a long period of uncertainty, the Pope Motor Car Co., of Toledo, O .i,s to be sold to The Toledo Motor Co., a corporation which has been formed for the purpose of making the purchase. The latter has been incorporated under the laws of Ohio, with $10,000 capital for the present, but the identity of the men back of it is not as yet disclosed. The order for the sale by the receivers of the Pope Motor Car Co. of all the company's property and assets to the Toledo company was given on the 30th ult. by Judge Robert W. Taylor in the Circuit Court of the United States for the Northern District of Ohio, Western Division.

It appears that the Toledo company owns claims aggregating $850,000, which were formerly held by the receivers of the Pope Mfg. Co., of Hartford, Conn. These claims are to be paid only after all the proved claims of other creditors have been satisfied, according to the order.

The proposed sale came before the court in the form of a petition by the Toledo Motor Co., asking for the necessary court permission. The receivers recommended to the court that the petition be granted, and the court expresses itself as satisfied that not only all the stockholders but a very large majority of the creditors have approved of and consented to the arrangement. A final hearing will be given at Toledo on the 11th inst., at which such objectors as there may be, must show cause why the sale should not be made.

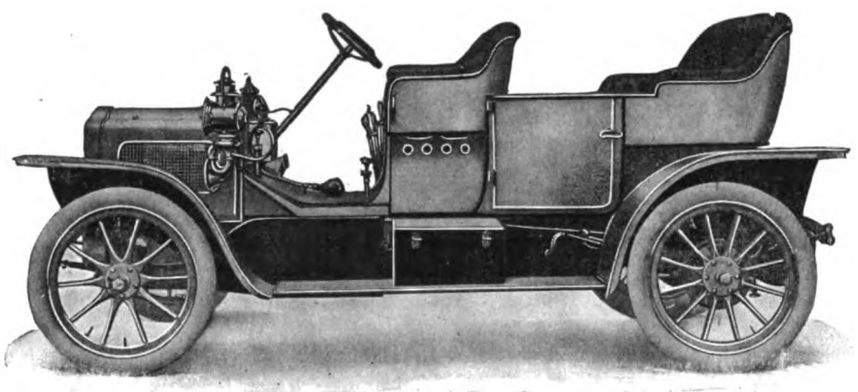
Maxwell Selling Forces Hold Reunion.

Maxwell agents and sub-agents gathered several hundred strong at the Hotel Manhattan on Tuesday, 5th inst., for the annual dinner and reunion give by the Maxwell-Briscoe Motor Co. Lee B. Durstine was the toastmaster of the occasion. The first speaker was Benjamin Briscoe, president of the company, who in a "brotherly" talk on "Team Work" gave a review of the past, an estimate of the present, and an outline for the future, his remarks being lightened by humorous illustrations. Designer Maxwell told what he had seen on his recent trip abroad so far as motor cars are concerned, and C. W. Kelsey talked about "Hustlers." Ernest Coler, advertising manager, impressed on the agents the value of publicity, while Auditor Wellington thanked them for the promptness with which they turned in the dollars. Cresswell McLaughlin's topic was "The Battle of the Markets." Agents not only from all parts of the United States, but from Canada and from Cuba were present.

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THE WHITE STEAMER IS THE ONLY CAR

of distinctively American design



The White is the only car which is not a copy or an imitation of some foreign product. In almost every class of machinery—typewriters, sewing machines, agricultural implements, machine tools, etc.—American ideas of construction have eventually proved triumphant and so it is with the White Steamer. The White is sold in quantities abroad in competition with the home product and, as regards this country, there are more Whites in use than any other make of large touring car.

The White possesses so many points of superiority over other types of automobiles that any one who purchases a car without first investigating the White is acting with only a partial understanding of the possibilities of automobile construction. We can meet the requirements of almost any pocketbook with either our 20 horse-power car at $2000, (shown above) or our 40 horse-power car at $4000. The United States Government, the most discriminating of purchasers, owns more White Steamers than all other makes combined. Our cars are used by the War, Navy and Executive Departments.

Write for descriptive matter.

THE WHITE COMPANY

CLEVELAND, OHIO

NEW YORK CITY, Broadway at 62d St.
BOSTON, 320 Newbury St.
PHILADELPHIA, 629-33 N. Broad St.

PITTSBURG, 138-48 Beatty St.
CLEVELAND, 407 Rockwell Ave.

CHICAGO, 240 Michigan Ave.
SAN FRANCISCO, Market St. at Van Ness Ave.
ATLANTA, 120-122 Marietta St.

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THE MOTOR WORLD

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NEW YORK, JANUARY 7, 1909.

The Motor World's Forecast of the A. L. A. M. Show will bear the date of January 14th. The full report of the show will appear on the 21st.

Building for Utilitarian Service.

Whatever may be said of the developments, structural and otherwise, revealed by the greater automobile shows the careful observer will note with growing satisfaction each year, and this year in particular, that the utilitarian phase of automobile construction is taking effect in every designing room and every shop and so is evidenced on the cars as they are presented for review, in a degree which is as impressive as it is gratifying. The principle is not necessarily that of the development of the car intended solely for commercial purposes, but of the kind of development which makes for better and more convenient service to the user regardless of the application he may happen to make of the vehicle itself. Never before has such attention been paid to the perfecting of small details; never before have questions of speed and power and luxurious appointment been subordinated in such degree to the practical side of bringing up the small details to the highest possible plane of practicability.

Thus in pleasure cars, provisions for the safe yet accessible location of parts and supplies such as spare tires, batteries, tools and luggage are found almost universally, even in cars which are marketed at a very moderate price. Better arrangements and mountings for the equipment, as in the ironing for tops, the methods of installing gas tanks and generators and the use of substantial door latches and other tonneau fittings are found.

In a measure, this tendency may be regarded as engendered by the growth in the extent and elaborateness of the equipments which are furnished with the cars, or perhaps to the activities of the accessory makers who are constantly improving upon their wares. At the same time, the fact that in lubricating systems, ignition systems, carburetters and even entire transmission groups provision is found for long periods of service practically without attention; for better accessibility to parts than ever before, and for ready removal of affected or injured organs; points rather to a growing appreciation on the part of the manufacturer that he must make a car that will afford its owner a maximum amount of service with a minimum of attention. Even the vast developments in the use of interchangeable parts which are so constituted in the strictest possible sense may be argued as favoring the user quite as much as bringing factory economies to the maker.

In the purely commercial field, of course, this principle finds its most evident outlet. There, it is observable that designers are viewing their problems directly through the eyes of the user, and striving in every possible way to anticipate his wants and his exigencies. Hence, the broad adoption of systems whereby whole power plants may be removed and replaced in a few moments, the use of more direct mechanisms than ever before, and the complete independence of chassis, power plant and mechanism of control from the load-carrying section of the vehicle. The old idea of adapting devices which have worked out well in pleasure car practice appears to have been abandoned almost completely, and the commercial cars of the day are manifestly designed through and through for the duties to which they are destined to be assigned.

Locating the Drivers' Seat.

Questions of the relative advantages of vehicle control from the right or left hand side, so thoroughly thrashed out during the earlier formative period of the industry are again coming to the front with the appearance of not a few cars which feature left control, and in particular with the rapid springing up of the many forms of town car and cab especially devised for commercial uses. Formerly the chief points of argument, pro and con, were in regard to the advantages of sitting on the left when meeting opposing traffic and of convenience in manipulating the mechanism of control when in that position. The introduction of the left-driven taximeter cab, however, has brought with it an added point to be discussed, and an objection which superficially at least, appears to be more or less reasonable.

In a word, when a commercial vehicle is drawn up to the right hand curb and the "fare" is about to alight, the driver is able to open the door without leaving his seat, if that be on the right side, while if it is on the left he is forced to execute a quick scramble across the foot board in order to anticipate the pasengers' movements. Further, if the gear and brake levers are located in the centre of the foot board this is rendered a difficult if not impossible feat.

The opening and closing of cab doors is a custom which has arisen with the taximeter in public service and which may not be considered vital to the success of the motor cab in public service. At the same time, since it exists as a common practice, it must be considered when all the conditions affecting the positioning of the driver are taken into account. Perhaps the designer who is bent upon the use of left control and who also desires to cater to the flunky habit among chauffeurs will incline to use either of gear control mounted on the steering column, or of a system of all pedal control such as is possible with the planetary type of gear. Otherwise he must resort to the use of the levers mounted on the left side, thus partially blocking the driver's more natural point of ingress and egress. Trivial as the objection may seem, where every inch of space on the vehicle must be figured over and over to put it to the best possible use, and where not only the driver's accommodation, but frequently a fair amount of

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open space for luggage must be provided for, even such small considerations as cater to the handiness with which the operator can collect his fare are worth thinking of.

Siamese Twins and Godfathers.

What they term their Special Show Issues fully entitles the parents of those Siamese twins of automobile journalism, The Automobile and The Motor Age, to all the remark they may create. Not because they differ chiefly in respect to the color of their covers, not because the show was "written up" long before its doors were opened, not because the pages were splashed with red ink and green, nor because the price of the "special issues" were raised 150 per cent., but because of the wholly original "sandwich effect" duplicated by each of the "twins" and which constitutes a striking departure in journalism.

When any publisher can slip here and there a page of reading matter between 30 or 40 pages of advertising and call each a "section" or "department," and repeat the same matter in two apparently distinct and separate publications and "get away with the goods," he performs an achievement which justifies him in increasing the price of such sandwiches not 150 per cent., but 550 per cent., even though it may seem to lend substance to the notion that in some publishing institutions all else is secondary to the accumulation of advertisements. And when "twins" are supported on the right by Blue Books and on the left by directories, all operated by the same prestidigitators, their dexterity appears the more astonishing—so astonishing that it would seem that godfathering an embryo official organ of the American Automobile Association should be, even if it is not, undertaken with considerable timidity. Even a gentle and much milked cow wearing blinders has been known to kick over the pail, even when milked by trained hands.

We respectfully suggest to the parents of the Siamese twins and of their right and left supporters, that there is grave danger of a mishap of the sort, particularly if when godfathering a marvelous, but unborn "official organ" it is maintained that it will come into the world with 20,000 subjects on its circulation list. Some wise man may be apt to discover that the United States government requires the payment of a subscription fee and a signed order from each individual member of an organization before its official organ will be entitled to pass through the mails at publishers' rates.

ENGINEERS IN ANNUAL SESSION

Principles Governing Traction Loss the Main Topic of Discussion—Papers Read and Officers Elected.

What had been programmed as a series of demonstration tests on the Automobile Club of America's car dynamometer resolved itself into an animated and protracted discussion of the principles governing traction resistance and the effect upon traction losses of the sizes, shapes and surfaces of tires, when the Society of Automobile Engineers assembled at the automobile club on Tuesday, 5th inst., for its fourth annual meeting. It had been intended to run off a series of trials upon the dynamometer in addition to inspecting its mechanism. Because of the large number of members in attendance, however, as a result of which the operation of the various portions of the exceedingly complex device could not be observed with any degree of satisfaction, adjournment was made to the reception room of the club where an informal discussion of the merits of the dynamometer was introduced, which finally merged into a useful debate on the topic outlined.

The subsequent discussion bore upon the contention that the varying degrees of power lost through variations in the tire mountings of different cars, would be sufficient to overthrow the dynamometer readings as indices of the power losses in their transmissions. Not only tires of different makes, but different tires of the same make are responsible for varying losses at the driving wheels.

It long has been well known that tires were responsible for a difference in the mileage of an electric vehicle, frequently amounting to as much as 60 per cent., where a specially light, single tube type was employed, as compared with what is known as the regulation "gasolene" type of tire, or one consisting of a separate tube and a heavy outer shoe. The use of any form of non-skid device, such as studs for example, is responsible for a further increase in the power loss at the road wheels, a series of tire tests now being carried on by Henry Souther, head of the technical committee of the club, showing that the amount absorbed at this point ranges as high as 2.5 horsepower per wheel in some cases, and drops very low in others, although as yet, there has not been sufficient time to test more than a limited number of types.

At the election of officers which took place during the business session these officers were chosen for the ensuing year:

President, Henry Hess, Hess Bright Manufacturing Co.; first vice-president, Russell Huff, Packard Motor Car Co.; second vice-president, B. D. Gray, American Locomotive Co., and treasurer, Allan H. Whiting. The two managers for the term of three years, to fill the vacancies expiring at this meeting, were David Ferguson, George N. Pierce Co., and Prof. R. C. Carpenter of Cornell University.

A paper on "What Constitutes Ignition Reliability," by A. Atwater Kent, was read by the author, who illustrated various points by means of apparatus devised especially for the purpose, and Thos. J. Fay, the retiring president of the society, brought out some interesting points on "The Modern Trend of Brake Design," prepared by himself and Lawrence Whitcomb. The meeting was adjourned until January 19, when a second session will be held at the same place.

COMING EVENTS

January 16-23, New York City—Association of Licensed Automobile Manufacturers' annual show, Madison Square Garden.

January 21-31, Los Angeles, Cal.—Automobile Dealers Association's show.

January 25-30, Cincinnati, O.—Automobile Dealers Association's show.

January 27-February 3, Philadelphia, Pa.—Automobile Trade Association's eighth annual show, Second Regiment armory.

February 6-15. Chicago. Ill.—National Association of Automobile Manufacturers' Show, Coliseum and First Regiment Armory.

February 15, Detroit, Mich.—Detroit Automobile Dealers Association's show, Wayne Pavilion.

February 15-20, St. Louis, Mo.—Automobile Manufacturers and Dealers Association's annual show.

February 15-20, Cleveland, O.—Automobile show, Central Armory.

February 16-18, Denver, Col.—Denver Motor Club's first annual show, Auditorium.

February 20, 21, 22, New Orleans, La.—New Orleans Automobile Club's Mardi Gras carnival 3 days race meet.

February 22, Cleveland, O.—Cleveland Automobile Dealers Company's show, Central Armory.

February 27-March 3, Hartford, Conn.—Automobile Dealers' Association show.

March 1-6, Omaha, Neb.—Omaha and Council Bluffs dealers' show, Auditorium.

March 6-13, Boston, Mass.—Boston Automobile Dealers Association's (Inc.) seventh annual show, Mechanics Building.

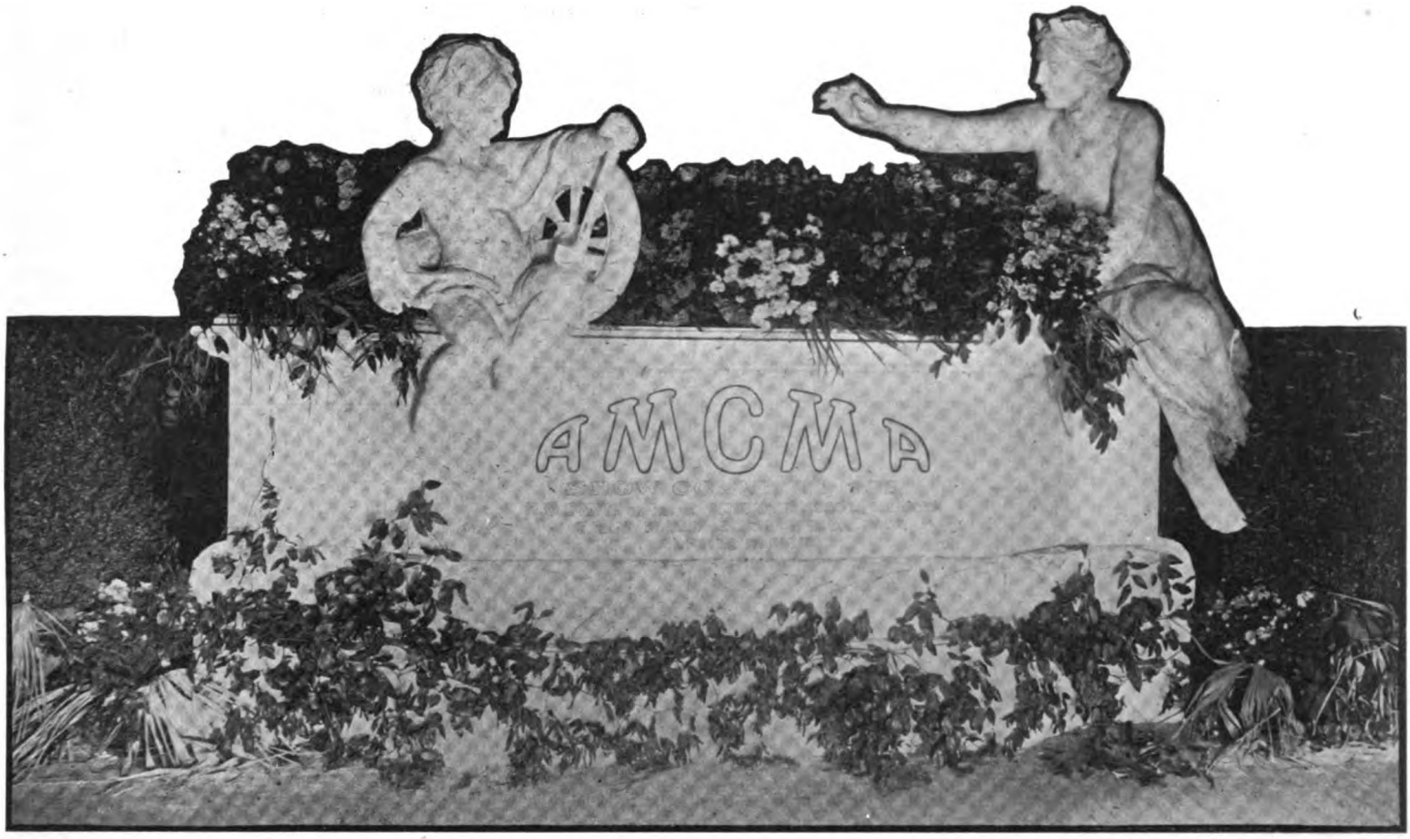
March 8-15, Kansas City, Mo.—Dealers Association's show, Convention Hall.

March 10-13, Memphis, Tenn.—Automobile show, Auditorium building.

March 15-20, Rochester, N. Y.—Rochester Automobile Dealers Association's show, Convention Hall.

March 27-April 3, Pittsburg, Pa.—Automobile Dealers Association's show, Duquesne Garden.

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The Palace Show a Picture of Progress

For the sake of the "independent" shows that have gone before it was unfortunate that the American Motor Car Manufacturers' Association was content to remain the silent partner of the Automobile Club of America. For it is simple justice to say that the association's show in Grand Central Palace, New York, which was opened on Thursday evening last and which will hold the boards until this Thursday night, is so far superior to all of its predecessors, that in the light of today they seem useful chiefly for the purpose of comparisons. This, of course, refers to the setting —the "dress" of the shows. The exhibits of other years may have been the equals of those now in evidence but never were they "set off" to such advantage. Clothes may not make the man but they have much to do with creating impressions and with the formation of opinions and the same is true of public exhibitions.

The dissolution of the "partnership" between the club and the manufacturers has proven of distinct and far reaching advantage to the Palace show. For the first time since that building was utilized for the purposes of automobile display, its dress is an unstinted credit to the industry. It is not only eye pleasing but it is clean and wholesome. The



PORTICO AT THE PALACE SHOW

Palace is not a structure that lends itself to effective embellishment. Its main hall is not very large and the wide overhanging galleries which overlook it from four sides do not contribute to picturesque effects, while the many ante-rooms and halls and their connecting halls, doors and stairways do not serve to make easy the way of the decorator. Despite these drawbacks he has accomplished wonders and the members of the A. M. C. M. A. show committee, which was responsible for his work, well deserve the monument—or "altar," as one captious critic described it—erected in the main hall and which bears their names.

Preliminary announcements had described it as the Great White Show and while this definition does not apply to the main hall, it tells the story of the remainder of the exhibition. The halls and ante-rooms all are dressed in white. White bunting hides the walls and pillars and is criss-crossed on the ceilings. The signs all are white with gold lettering and the same is true of the banners displayed by the exhibitors. The

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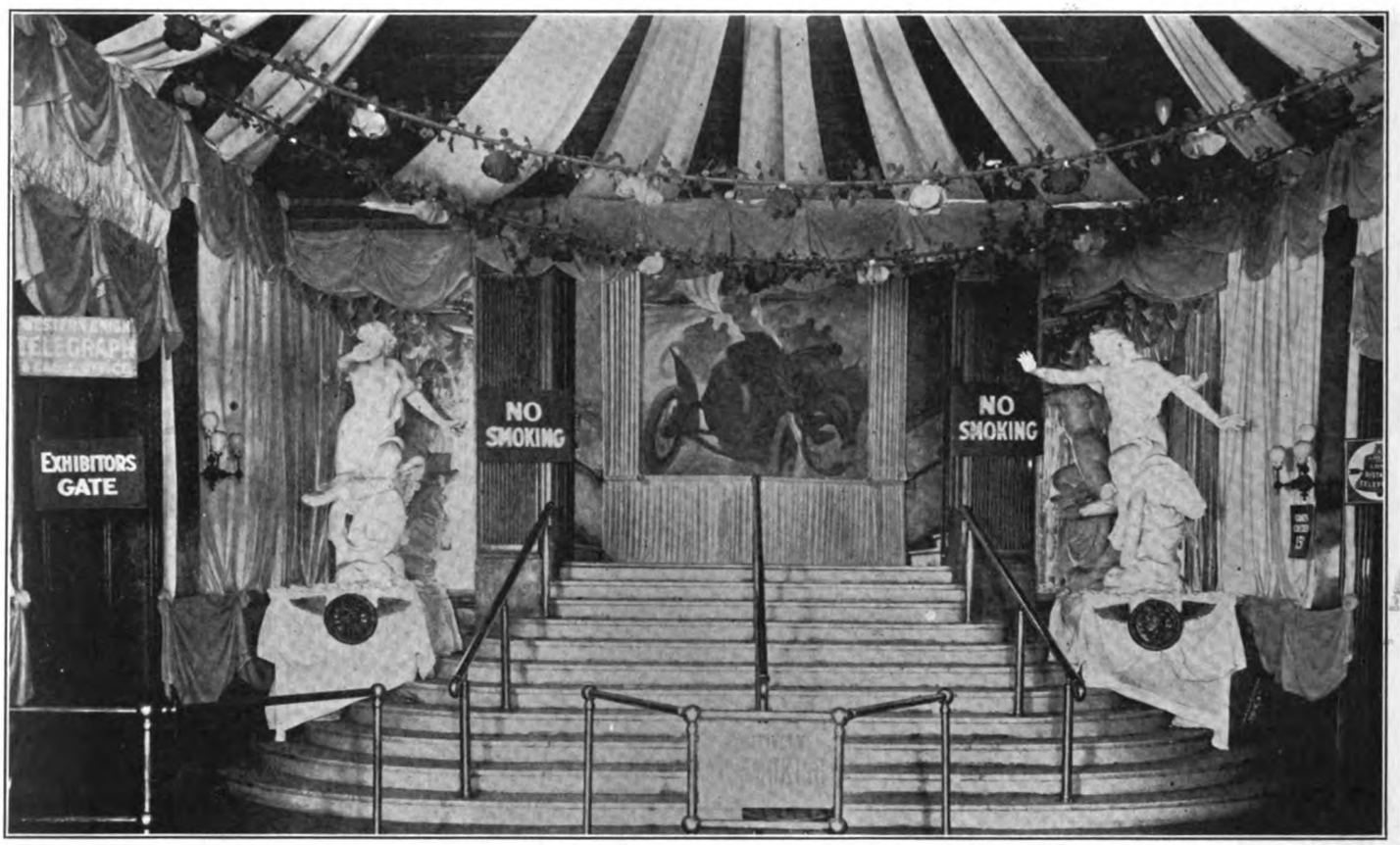
effect is a light, clean, wholesome atmosphere at every turn. It is a most agreeable change from the dark, depressing effect of the greens of last year.

By the nature of its interior plans, picturesque embellishment of Grand Central Palace is restricted to the entryway and the main hall and the galleries immediately overlooking it and it is here that the artistic hand has been brought to bear, as it never was brought before. Generous use has been made of white stuff in the form of statuary and otherwise. The columns of the permanent portico that is built out from the entrance have been covered with this material and four sad faced and hooded nuns—or they may be goddesses—are on guard; they, too, are of white stuff and each is holding in front of her a tire—whether Diamond, Hartford, Continental or other brand matters little, but at any rate it has no lugs. Overlooking the overhead porch itself is displayed a huge painting depicting an automobile scene. The marvelous transformation of the weatherbeaten portico is no mean achievement but it is not until one has entered the lobby of the building that he receives the first real impression of the beauty of the show. The lobby bears no relation to its everyday self nor to the practically bare and uninviting passageway of previous show times. It is bright and cheerful and well dressed. There are paintings on the wall and from the ceiling to the central cluster of light there are suspended ropes of evergreen in which are picked out glowing red blossoms—electric bulbs concealed by rose hued paper. Flanking either side of the main stairway is a lightly draped white goddess of heroic size and about whom there is nothing suggestive of the cloister. On the walls at the head of each of the narrow branching stairways not bare walls requiring kalsomining greet the eye but large colored paintings representative of some other automobile goddess and field of "life" and warm in coloring. If he is at his post, one of the few masculine adornments of the show will be seen at the head of the stairway—the page in Colonial costume, powdered wig, cockade, knee breeches and all.

Entering the main hall for the first time, the visitor to the Palace familiar with its interior on previous occasions immediately receives two distinct and surprising impressions—first, its unlooked-for beauty, and, second, its apparent great enlargement. The beauty is real, the enlargement is an optical delusion which, however, is not discovered on the instance or until it is seen that the further end of the hall is a huge mirror which affords an appearance of great depth, the effect being heightened by the artistic draping of rich orange over deep green which falls from a large panel picture of the American eagle grasping an automobile wheel and with the rays of the rising sun for a background. It is a conceit that were well worth while. It is immediately in front of this mirror that the "corner stone" bearing the names of the show committees is "laid" amid a simulation of turf. On the edge of the "stone" is perched a cherubic baby Vulcan, hammer in hand, and another of the numerous goddesses who with outstretched arm is coaxing the chubby youngster to "come across."

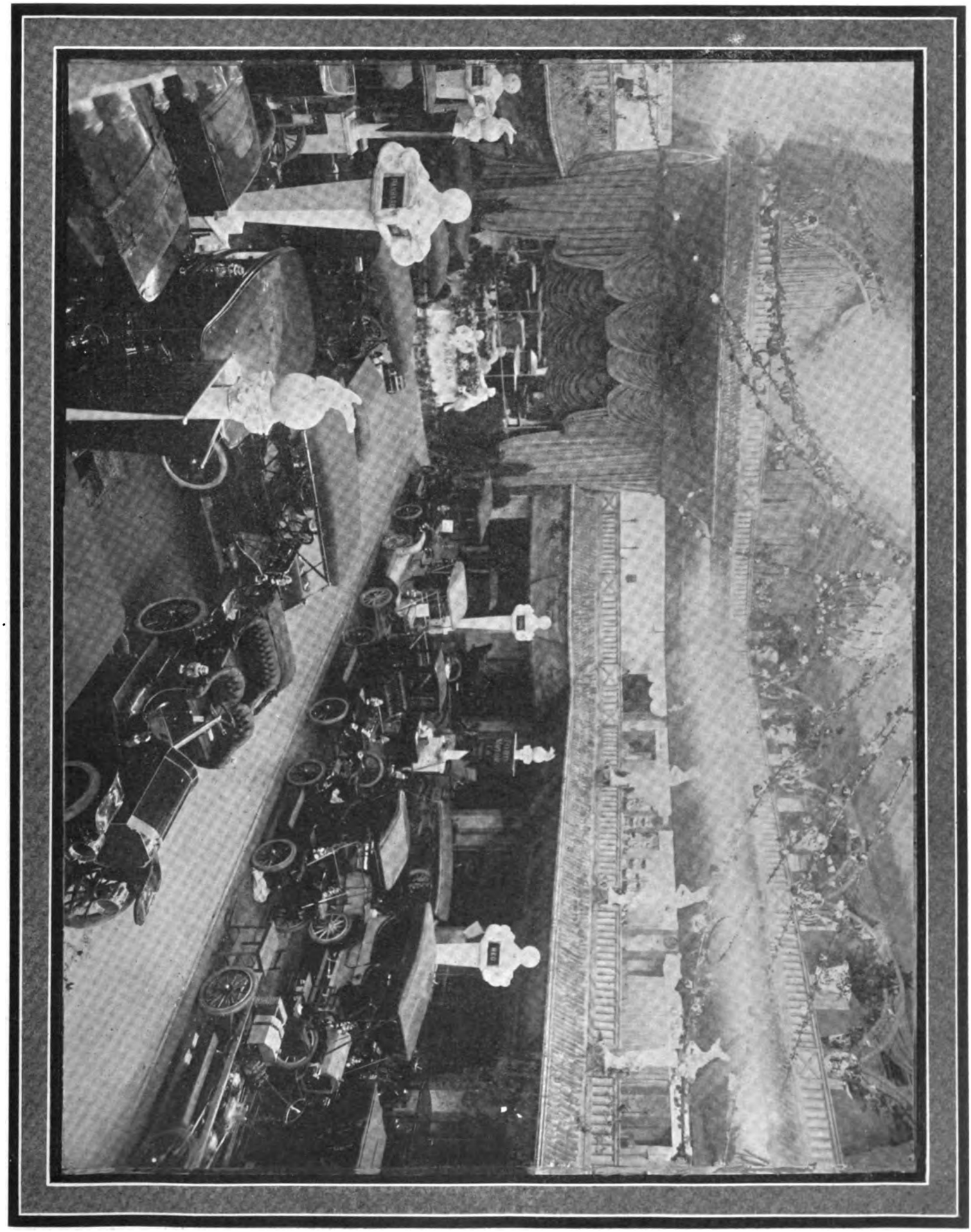
"Up aloft" the sky is of azure bunting from the mid-center of which depends a huge golden globe and a row of electroliers, each studded with scores of brightest incandescent bulbs. From the golden globe there radiates in every direction ropes of greenery "abloom" with glowing soft red flowers.

To obtain the full "picture effect" of the show, it is necessary to mount to the top gallery. From that vantage point, the scene is that of looking down through a trellis upon a square open court filled with motor cars, eaves of painted red tiling projecting from beneath each balcony, the railings themselves being concealed by a painted railing to conform with the early English effect. Beneath the eaves and set at an angle are panel pictures of outdoor automobile life. Overlooking the top gallery is a series of arched trellises picked out with small vari-colored bulbs and from the center of each of which appears a palm set in a white urn of massive proportions.



VIEW OF THE LOBBY AT THE PALACE SHOW

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GENERAL VIEW OF THE MAIN HALL, PALACE SHOW

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From the larger arched trellises at the ends of the gallery white cupids are suspended in space and instead of potted palms there are "flowering" roses and lilies—the flowers being electric bulbs concealed within transparent paper of the proper shades. In front of the railing itself is a series of crossed American and foreign flags pinned back by polished breastplates and other armor. On the first gallery, instead of trellises, the rail is broken at intervals by statues of goddesses holding aloft a winged wheel. It is on this gallery and overlooking the open court that such names as Hartford Rubber Works Co., Diamond Rubber Co., Badger Brass Mfg. Co., Splitdorf and others that stand high in the accessory industry. On the main floor and in the court itself stand the exhibits of Maxwell-Briscoe, Stoddard-Dayton, Premier, Mitchell, Ford, Reo, National and other bulwarks of the A. M. C. M. A., flanked on one side, but tucked under the overhead gallery, by the displays of foreign cars, the importers of which last year held a show of their own, and which was marked by a heavy fall of frost, as only the Motor World then stated. The importers, however, induced nearly all other publications to say that they were so "well satisfied" that their show would be repeated. Their present appearance in the Palace serves to demonstrate who told the truth.

In the "court of honor," so to speak, the exhibits are distinguished not by white and gold signs but by red ones—red banners and subdued red box lights which form the tops of white columns, while the red banners are displayed on other white columns each topped by an eagle perched on a globe.

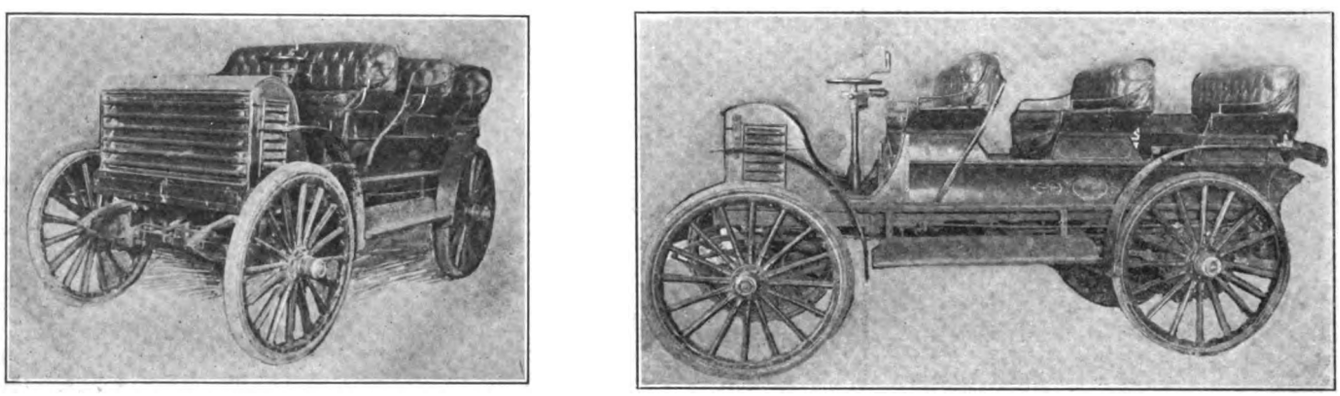
Word-description is, however, inadequate. The embellishment is too beautiful for mere pen and ink. It is carried even into the cafe, which takes the form of "Ye White Horse Inn," which with its tiled walls, "horsey" pictures and subdued lights looks the part and which even at first glance suggests Hoboken brew and ale, musty and otherwise, even if high balls may be more generally dispensed.

One small feature of the decorative scheme caused broad smiles on the part of the knowing ones and nowhere were they broader than in the booth of the Hartford Rubber Works Co. For as an added flourish or touch the decorator had seized on the familiar winged tire trade-mark of that company and had painted it on many of the signs in use throughout the building. It certainly does appear odd to find the Hartford mark alongside the names of competing tires.

Officially, the show opened Thursday evening, 31st ult., at 8 o'clock, and for the first time it was inaugurated with a show of ceremony. In the absence of Mayor McClellan, the Hon. Pat F. McGowan, president of New York's picturesque Board of Aldermen, and in the Mayor's absence the city's reigning official, escorted by Messrs. Owen and Hollander, was whirled up to the door in a Premier limousine and after being photographed entered the building and delivered a little speech. Despite his silk hat and evening dress, it was easy to recognize him as a member of Tammany Hall. He made his address gracefully, however, adding a few flourishes to the statistics with which he had been primed but saying nothing of moment or that will live in history. It did not take long for the building to become filled. Opening night always is largely a "complimentary night" and congested aisles are therefore the rule, to which last Thursday night was no exception. Since that time the attendance has been fully up to expectations. Speaking generally, the spectators appear to be of a better class than heretofore, that is, there seems to be more of those able to purchase automobiles and fewer of those whose chief asset is hope. The retail trade also is present in greater strength and it is significant that the West, that is west of Chicago, is more numerously represented than ever before.

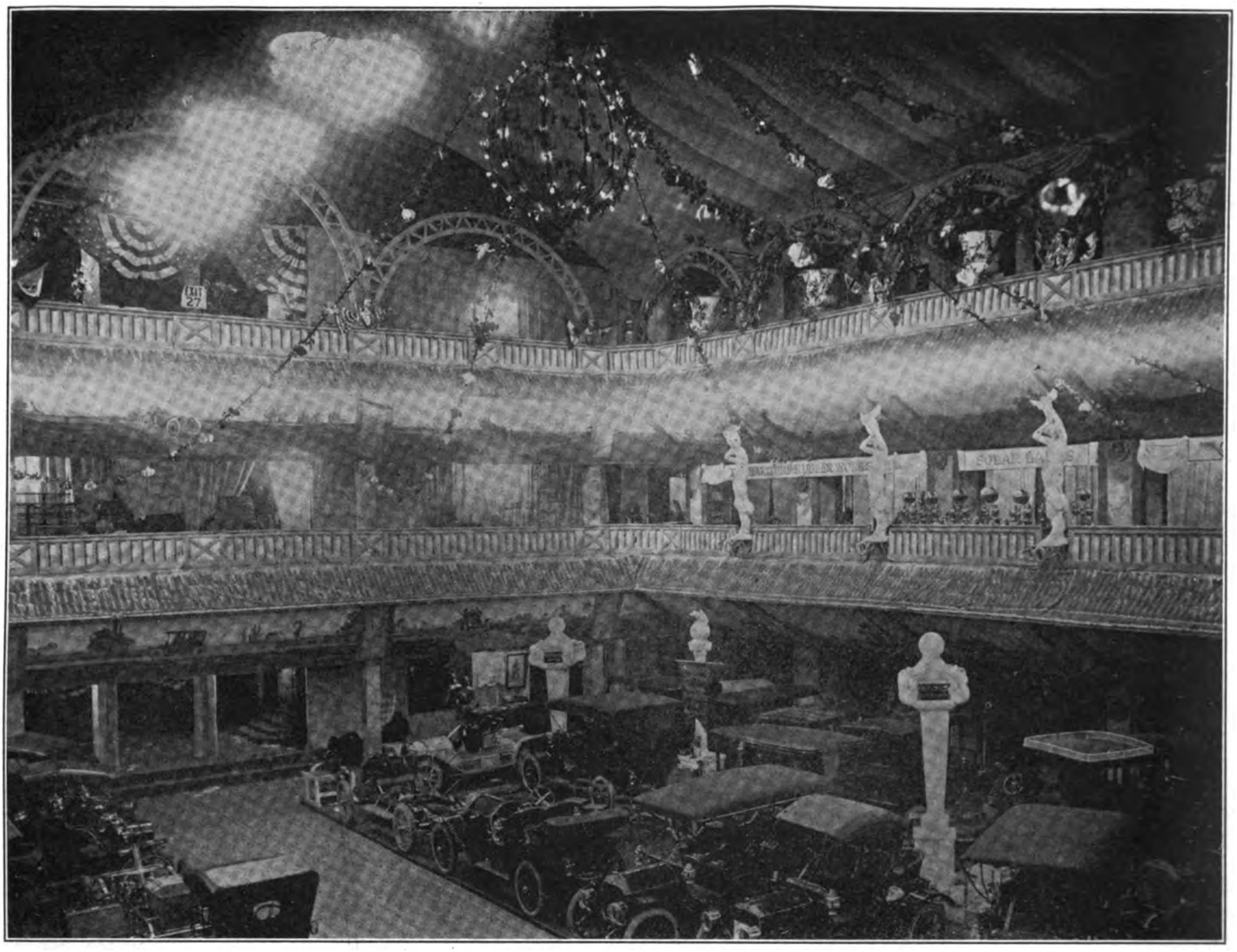
There is no disagreement regarding the unusual and unexpected beauty of the show nor in respect to the better management. For the first time, the "no smoking" rule is being rigidly enforced and the friction arising from outdoor demonstrations has been avoided by the use of time checks. Nor does General Manager Reeves close his ear to any reasonable complaint or fear to take action when action is necessary as was proven on Monday when an exhibitor was ordered to "shut up shop" and get out forthwith. The offender was one of the numerous highsounding and alleged "owner's cooperative leagues" who had obtained space on the application stating that accessories would be displayed. As a matter of fact not merchandise but printed matter was the only thing in evidence, among i being a booklet painting the beauties of the cut-prices obtainable from membership in the "league." Twenty per cent. discount on two of the cars shown in the "court of honor" and also on the licensed car the manufacturers of which are so anxious to have the tariff reduced were among the quotations bulletined, while figures on many reputable sundries were cut to the bone. When the complaints reached Reeves he and the show committee acted promptly. They ordered the "league" to get out of the building without any delay, and he "got."

Except for a polished chassis here and there, most of the automobile exhibitors rely on their new and finished product to catch the eye. But an occasional weather-beaten car "stands out" by contrast. The little Brush that crossed the continent and en route climbed Pikes Peak, the Premier that covered 100 miles per day for 100 consecutive days and the Rapid truck that came to the show over the give and take roads between Pontiac, Mich., and New York, are among the number. In the foreign section several historic racing cars are displayed with a cup or two indicating their victories but the greatest display of such trophies is made by an American manufacturer—the York company. On a long shelf where all must see is displayed a striking array of silver cups attesting the prowess of the Pullman car. In the Maxwell-Briscoe booth are two added features, one neat and so small that it is kept under a glass case, the other lumbering and life-size, which may or may not some day have tremendous bearing on the entire industry. The former is a miniature model of a four-cylinder motor of conventional mould, complete in every detail, and said to be the smallest in existence. It is of the two-cycle type, water-cooled, fitted with jump-spark ignition and mounted on a section of a



TWO VIEWS OF THE WILKINS VEHICLE, WHICH IS CLAIMED TO ANTEDATE THE SELDEN PATENT

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MAIN HALL, LOOKING TOWARD LEXINGTON AVENUE, AND SHOWING MITCHELL AND STODDARD-DAYTON EXHIBITS

chassis, in front of a tiny dashboard which carries the spark coil and the other accustomed fittings. The cylinder dimensions are 1½ by 1½ inches, bore and stroke, and the "A. M. C. M. A. rating" quoted is 3.6 horsepower. The model which is of excellent finish and wonderfully delicate workmanship, is the property of Adam Ziske, of Rockford, Ill. The lumbering and possibly momentous feature of the Maxwell display is a car discovered in California by Benj. Briscoe himself and which he declared is "the find of the century," in that it is claimed to ante-date the basic Selden patent by some three years. Mr. Briscoe states that he has authentic proof that the three-cylinder gasolene motor which is incorporated in the old vehicle was built and operated by J. W. Wilikns in 1876; the Selden patent was not granted until 1879. The Wilkins rig still is in working order; it is in its original state save for wheels and tires.

Of other striking "side attractions" is a De Luxe car with a glass hood—for show purposes only, of course—and a four-cylinder De Dion chassis with each and every working part sectioned or cut away showing its "internals" so that even the misinformed may get a good idea of what's what. Most of the real "action"—the working exhibits—are confined to the accessory displays. In respect to cars, a Stoddard-Dayton engine operated by an electric motor and showing the operation of the new lubrication system and working demonstration of the friction drives of the Lambert and the Carter car are the only evidences of action.

That portion of the show in which the cars were staged revealed certain characteristics—features which "stood out"—and which were to be interpreted as fingerposts of future development or as valiant efforts to get away from tradition, according to the sentiment of the visitor. Though not as numerous as in former years, the bearing of these striking departures from ordinary practice proved to have unsual significance—perhaps for that very reason.

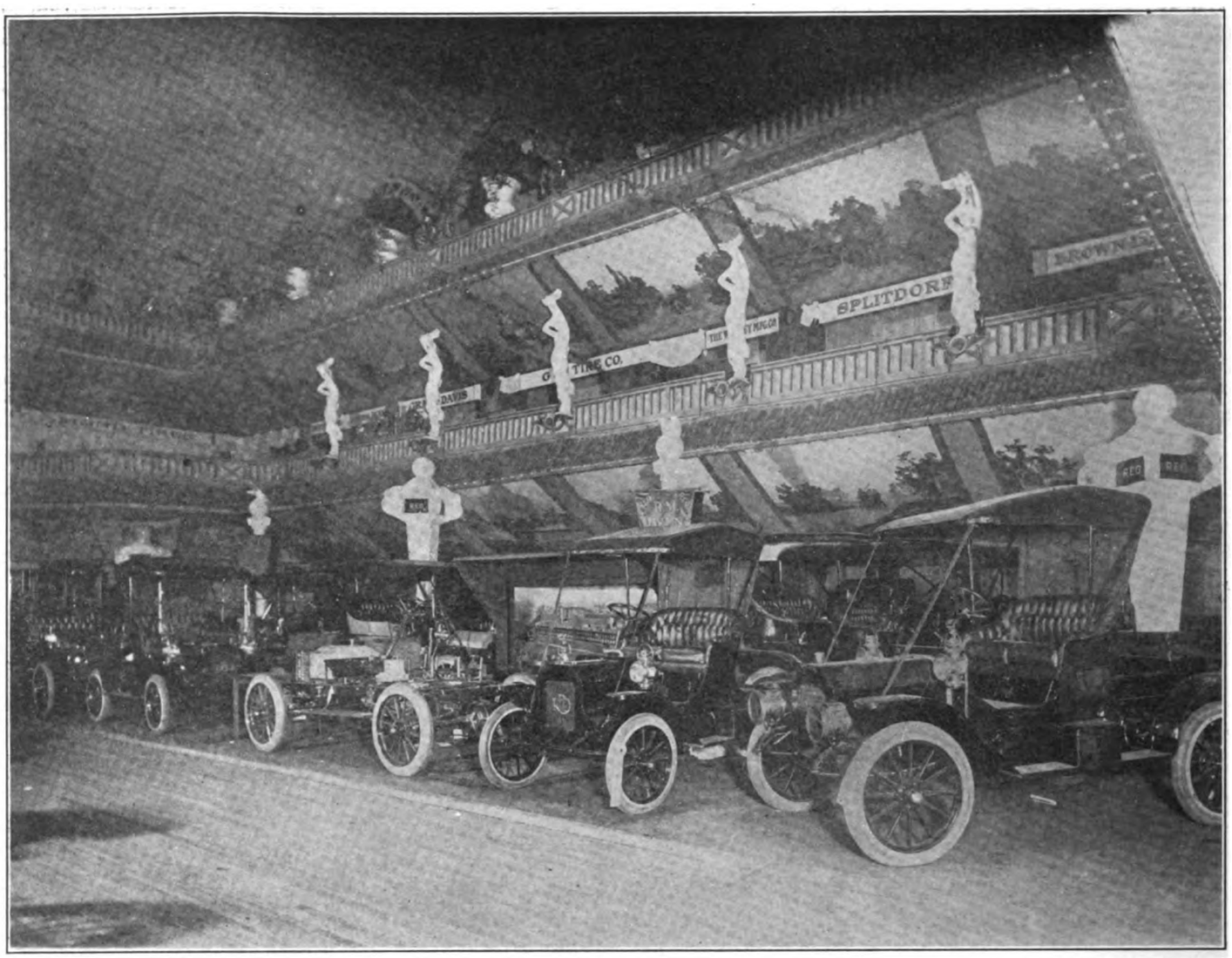
There was, for example, a four-cylinder, air-cooled motor of opposed formation, but built without connecting-rods or cranks, without cam shafts or gears, and mounted directly on the transmission shaft, which furnishes the only medium of suspension except the necesary torque resisting member. It is the feature of the latest Holsman model, and forms one of the most compact gasolene motor units ever seen.

There was another motor innovation in the 60 horsepower, two-cycle of the American Simplex, said to be the largest motor of its class ever mounted in a motor car. There was, of course, the high-wheeled practice of the motor buggy adherents, brought to a head in the 40 horsepower, four-cylinder, Black roadster. But the movement for large wheels, which has animated the manufacturers of the more conventional types of car obtained its greatest advertisement in the new American Traveler, with its 40 by 4 inches tires mounted on front and rear whels.

Left hand control of the vehicle, long advocated by a number of constructors, now appears on a number of vehicles, thus rendered more or less conspicuous, such as the Ford, the Holsman and the Cleveland and Rockwell public service cabs.

The foreign section had its new system

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NORTH SIDE OF MAIN HALL, SHOWING REO AND FORD EXHIBITS

of radiator construction, with fan enclosed within the radiator proper, which was mounted on the dash—this being an innovation of the recent Paris Salon, brought over on the newest models of the C. G. V.

There was an electric platform truck, designed for industrial purposes in transporting materials about large works and embodying a number of novel points. There were several examples of provision made distinctly for the purpose of demounting the power plants of commercial vehicles with a minimum loss of time and labor, and there was, of course, no small attraction for the young in the midget juvenile, and the smallest practical gasolene vehicle built, according to its builder's claims.

To hark back to the old assertion that the arrival of the period of standardization in the industry has brought with it an area of practical stagnation so far as thrilling or even general innovations are concerned it would appear that that opinion may be read with varying degrees of meaning, according to the viewpoint of the individual. The engineer, for example, even yet is able to discover a liberal assortment of new ideas bearing on the structure of the motor vehicle in one way or another, and in the solidifying and stratification of types, finds ample opportunity for study. The average owner, familiar with a moderate number of well-known cars, either through his own experience or those of his friends, is enabled to discover yearly improvements which are manifestly intended to eliminate certain fundamental drawbacks before in evidence. The more casual visitor perhaps unacquainted with the mechanism of even the most ordinary machines, still finds diversion in contemplating the construction and finish of the bodies, in which even his non-technical eye is able to discover important, or at least, conspicuous departures from previous practice.

Just so long as there are shows, there always will be enough in them to interest the visitor, and enough that is really new to make that interest of more than passing intensity. Only, because the appetite of the old-time show goer is cloyed with the surfeits of former years when each new model car was a radical departure from its predecessor, it is easy to say that there is nothing new to be seen this year, or next, or the year after.

BODY MOUNTING DEVELOPMENTS.

To begin with the beginning, that is to say, the visible, external appearance of the machines, taken at a general view, and returning to the unfortunate and hypercritical attitude of the critic who feels it his duty to discern and define in every section of the show some vestige of trend or tendency, be it gravely announced that body design is still trending. Further, be it understood that all previous forecasts are now authenticated and endorsed and that the development of the year, reinforcing that of the past two or three years, is gravitating slowly but surely into the paths formerly trod by the carriage makers. In the now familiar and omnipresent roadster runabout body, with its extremely modern version sometimes openly known as the surrey, is a practical and comfortable reincarceration of the old, horse-drawn type which for so long has gone by that very name. Whether in the guise of the snug little four passenger runabout, half motor space and hood and

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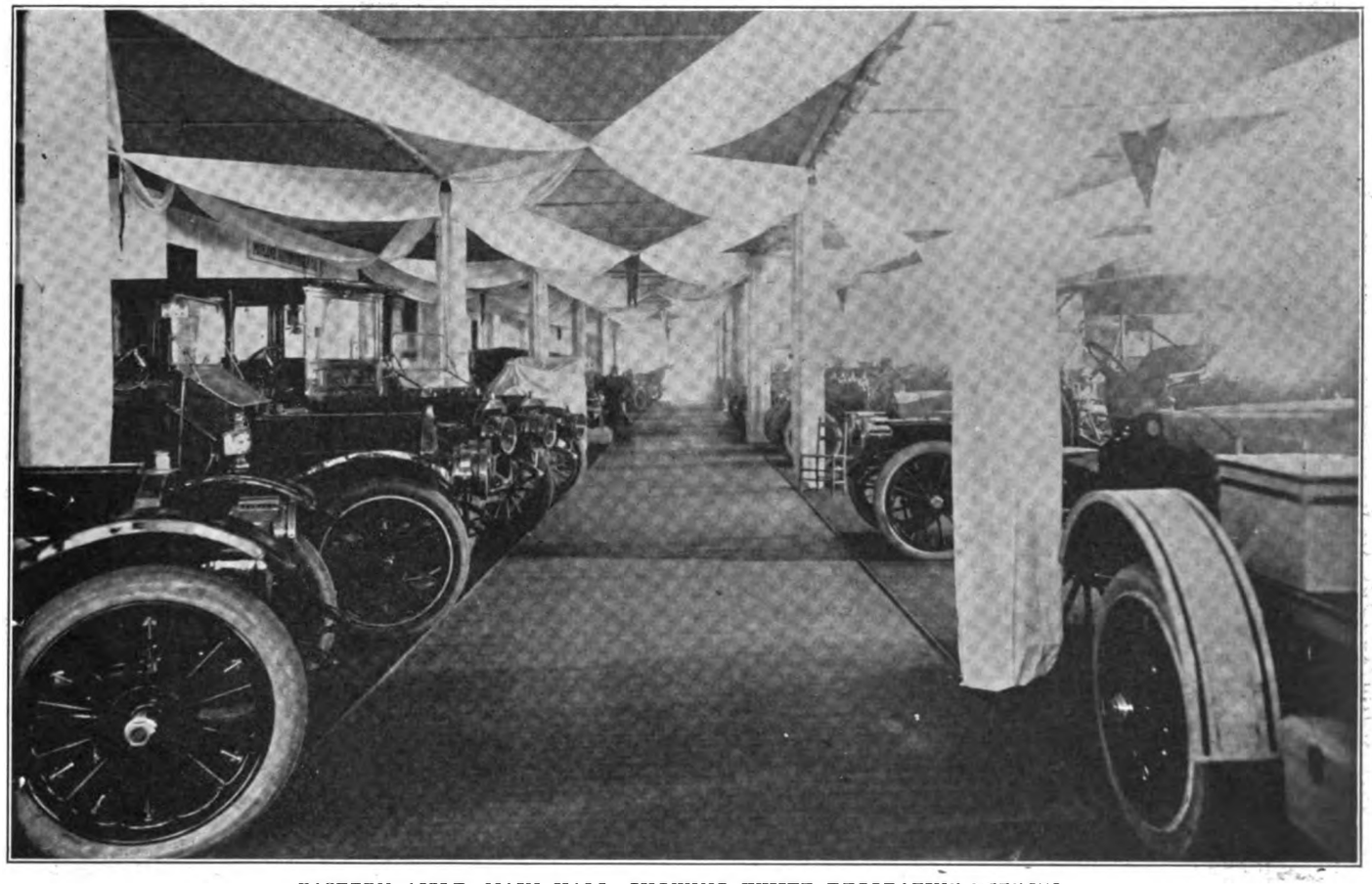
half passenger acommodation, or in the more formal close-coupled body with its little dinky rumble cocked up behind, it is plain to see that the clean-lined prints of the old carriage fashion plates have been studied and adapted, consciously or otherwise, but certainly with care and discretion in the draughting of many of the bodies of 1909.

In the more elaborate types of body there are still the tonneau in its various forms, five and seven seated, savoring broadly of the tonneaus of previous seasons, but improved mightily even from last year in finish—taking the general run of cars on view—in style, and in convenience of equipment. Between the tonneau proper and the surrey-runabout pattern of mounting, there is, in manifold evidence, that bit of exquisite humor the toy tonneau. Enough, that its popularity cannot prove of more than a year or two's duration, since it is at once ungainly and inutile.

The closed type of body naturally continues to be prospered in all its varieties. Apparently, however, the light and appealing town car, whether in coupe or landaulette form just now is coming in for a greater amount of attention on the part of the makers than is the more costly and elaborate type of limousine. Besides, the present vogue of the taximeter cab in public service exerts an alluring influence over many makers, who though they may not list their vehicles for this commercial service, yet adapt them broadly and openly to its demands.

Examples of town car or cab body construction at the Palace which were noteworthy were found on the Pennsylvania, Atlas, Ford, Coates-Goshen and Oakland stands, while both the Overland and Marmon exhibits include examples of the closely related, inside driven coupe, the former rendered conspicuous by its spotless white finish, and the latter by its extreme luxuriousness. In this connection it is to be noted that the interior of the Marmon instead of being cumbered with the host of mechanical appurtenances which used to be thought necessary to the management of the motor vehicle, is astonishingly free from such contraptions. The interior differs from the inside of an outside driven cab only in having the steering column with the motor controlling levers mounted on the wheel, the brake and gear shifting levers, and the switch casing and starting coil of the new Bosch ignition system. No other accessories are included, and there are no parts which might soil or otherwise render uncomfortable the persons of the two passengers which are accommodated.

Examples of improved and refined body construction in the more familiar types were found in the big limousines on the stands of the Dayton Motor Car and Welch companies. As a matter of fact, this particular show was more replete with closed vehicles than that of last year, or for any previous year, though a very important contribution to the number was that furnished by the luxurious foreign constructions which were about evenly divided between that and the open type. Conspicuous among these were the demountable limousine mounted on the Benz chassis, which is a remarkably luxurious achievement, the glass wind shield being set in sections, that in front of the driver being adjustable, while that which protects the other half of the front seat is fixed; and the folding limousine on the Mercedes shown on the Dietrich stand, and which has an extension top resembling in general appearance that commonly used on the ordinary touring car, but framed and glazed after the fashion of the complete limousine.

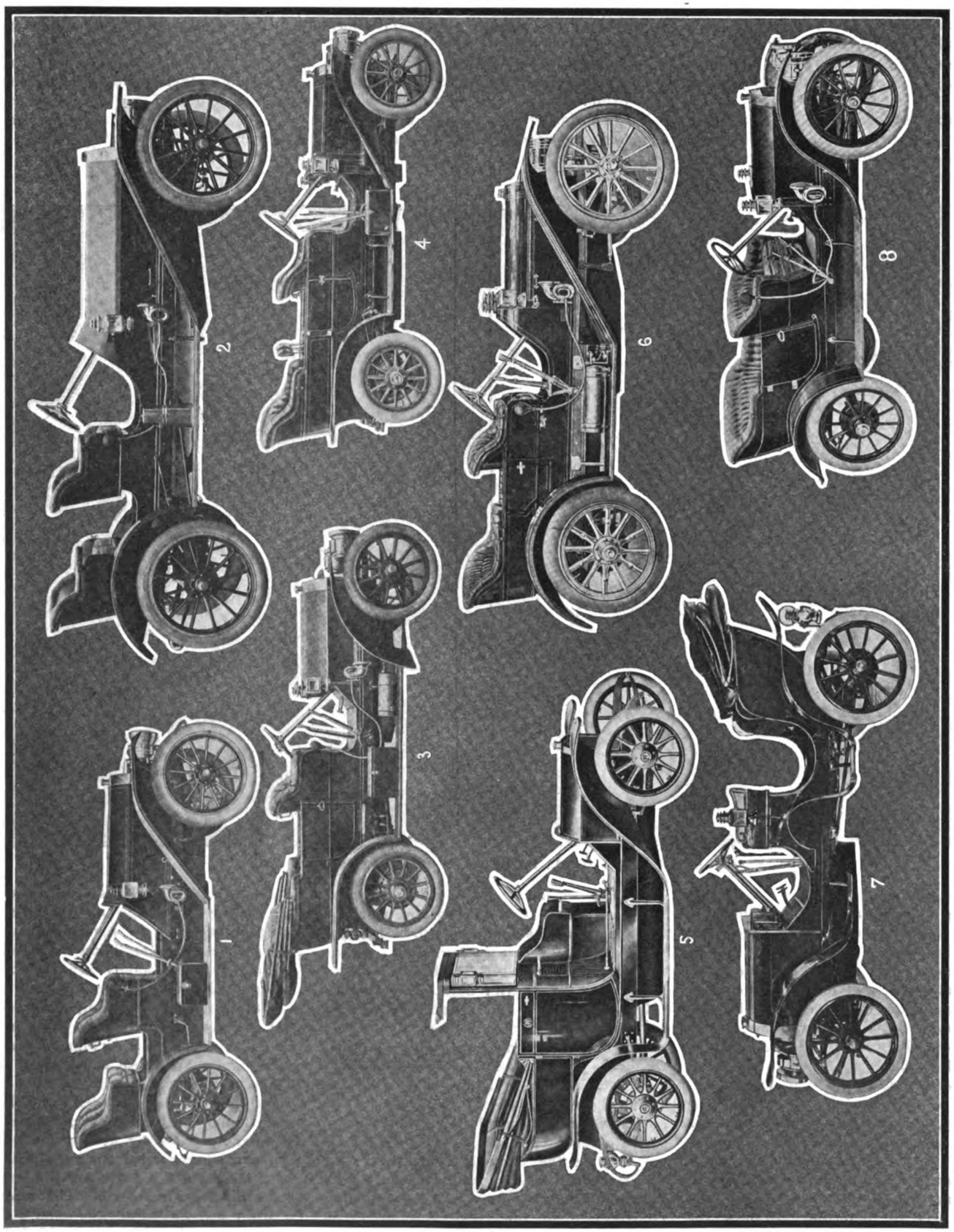


EASTERN AISLE, MAIN HALL, SHOWING WHITE DECORATIVE EFFECTS

Of the more popular forms of open body, and of American construction, rather striking examples are those which were shown on the Welch and Austin stands, among others. The former exhibited the rather unusual though promising characteristic of a considerable overhang at the ends of the rear seat, whereby that portion of the body was widened not a little and its capacity proportionately increased. The width of the front seat was in no way abnormal, and the little rumble which was added in the rear to complete the close-coupled effect, was arranged to disappear on occasion into

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SOME OF THE CONSPICUOUS NEW DESIGNS AT THE SHOW



1. OAKLAND "40" TOURING ROADSTER. 2. OVERLAND 6-CYLINDER, 45 H.P. 3. McCUE-HARTFORD 30 H.P. TOURING. 4. MOON MODEL "D" BABY TONNEAU. 5. ROCKWELL PUBLIC SERVICE CAB. 6. PENNSYLVANIA TYPE "C" BABY TONNEAU. 7. STODDARD-DAYTON "9-N" VICTORIA. 8. MITCHELL "40" TOURING.

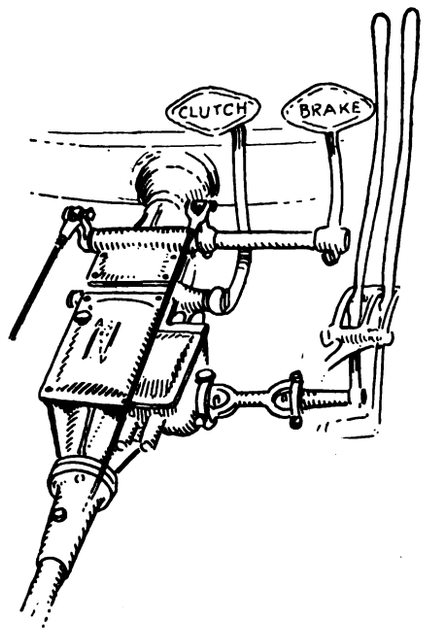
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the surface of a short turtle deck. The Austin body referred to was of the ordinary in that the detachable rear section was arranged for either baby tonneau or rumble service—in either case revealing absolutely no hint of convertibility. The separation between the stationary and demountable parts being designed to include the outline of the rumble seat, this was made comparatively simple, as the only practical difference between the two lay in the use of the higher backed seat and doors in the tonneau formation. The Moon, Cartercar, Premier, Pennsylvania and Pullman body displays also afforded rather striking examples of careful delineation, while the effective lines of the Stoddard-Dayton cars, particularly in the case of the larger chassis equipped with the baby tonneau were such as to give the impression of a neat, unobtrusive structure and almost diminutive in the case of a machine which in reality is both powerful and fast.

CARS WHICH MAKE THEIR DEBUT.

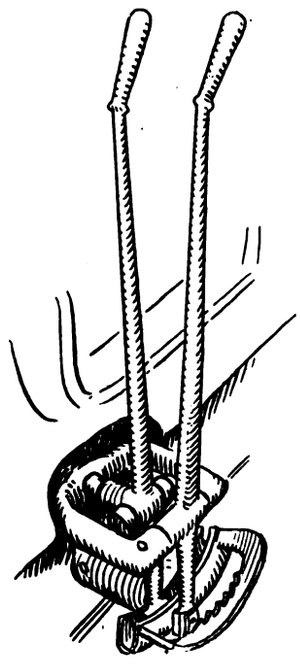
Whatever of interest attaches to the show as a whole, or to the other individual exhibits, it is the case invariably that the majority of interest expressed among those who are familiar with shows hinges about the cars, which are new, both in the absolute sense, and as applied to vehicles never before shown locally. In this respect the show continues to hold something the attraction of a vast Pandora's box, the contents of which are a source of more or less mystery until the moment of unveiling. The number of new machines shown this year proved to be even greater than had been anticipated. And further, the list of such vehicles included several which mounted features worthy of considerable individual study because of their distinctiveness.

Thus in the case of the Inter-State, no small amount of interest developed as to the construction of the transmission mechanism. Instead of the older method of hanging the gearset on the main or subframe and driving through the propeller shaft, or of driving through the shaft direct from the clutch and mounting the gearset on the axle, a combination of the two principles—entirely new—has been developed, in which the gearbox is mounted directly on the torque tube but at its forward end, while the suspension of that member is carried forward to the cross frame member directly behind the engine. By this means many of the advantages of the rear axle mounting are obtained, among them that of the long reach of the shaft and tube, while the gears are relieved of the abrupt and uncushioned shock which they are forced to sustain when carried dead on the axle. In order to preserve the true floating relation of the transmission, the connection from the gear shifting lever to the gearset is made through a short shaft equipped with double universal joints, while both brake and clutch pedals are carried on the gear by itself, perfectly free of the frame. The car is driven by a quadruple, vertical motor of conventional design in many respects, but which has splash lubrication with a reserve oil supply carried in the base and



INTER-STATE TRANSMISSION

fed automatically to the crank case; and rather an unusual arangement of the intake piping, which is offset in order to clear the exhaust manifolds, since both inlet and exhaust are mounted on the right side of the assemblage. It also is noteworthy that the



OAKLAND SIDE LEVERS

steering connection is carried across from the right side of the frame to the left knuckle, thus permitting the steering gear to be mounted well forward in the frame.

In a number of respects one of the most remarkable cars to be seen for the first time at the Palace was the Oakland, one of the several significant products of A. P. Brush's pencil, which though twice shown during 1908, never before has been unveiled in a New York show. Two distinct models were shown, one of 20 and the other of 40 horsepower—the latter being an entirely new machine. The distinguishing characteristic of the lighter machine, is the method of counterbalancing the twin cylinder motor by means of a revolving weight, suspended on an independent shaft in a casing separate from the crank case, and so placed as to neutralize practically all vibration caused by the movement of the pistons. In this machine also is to be found an ingenious adaptation of the planetary principle, in the transmission gearing, which is of the shaft type, and suspended from the rear engine bearing, instead of from an independent cross frame member, as is more usually done with shaft arrangements. In the latest machines of this type, the foot brake is arranged to throw the clutch out of action, while as in the older models, the gear lever, which acts selectively, also is made to control the emergency brake.

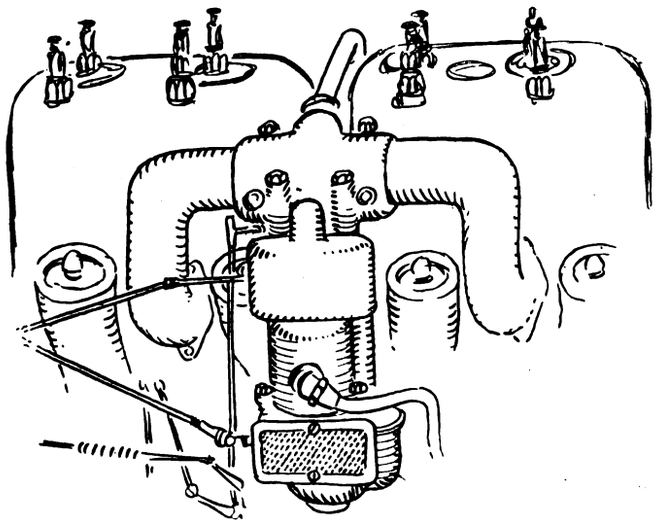
In the larger model, more conventional design is employed, save for the engine, which retains the peculiar cylinder formation employed in the lighter car, which embodies a liberal water jacketing area at the sides of the cylinders, but air-cooled heads. The motor is set upon an incline in order to secure a practically straight line drive under normal load conditions, and on this account a special arrangement of the lubricating system is required to prevent the oil from "banking" against the rear cylinders. This system is worked out with customary ingenuity. The transmission is of the selective, sliding gear type, controlled without the use of a segment, and the clutch is of the multiple disc type.

In the McCue-Hartford, was to be found another absolutely new vehicle, produced by one of the many old-line carriage makers who are so rapidly coming over to the ranks of the automobile builders, and who are bringing a vast store of useful traditions as to the methods best suited to the handling of the vehicle trade. The car is of conventional design, but is made extremely light for its power, which is rated at 30 horse, by the liberal use of high grade steels in the chassis construction, and of aluminum in the building of the body. In this connection it is noteworthy that not a single section of the body which could be built of the latter metal has been overlooked, hood and mounting, panels, fenders and wings included; so that the total weight of the roadster complete is but a trifle over 2,000 pounds. A four-cylinder motor, selective gearset, 36-inch tires and other standard features, presented in touring, runabout and roadster equipments complete the outline of this latest of Connecticut's contributions to the market.

Another of the new cars displaying con-

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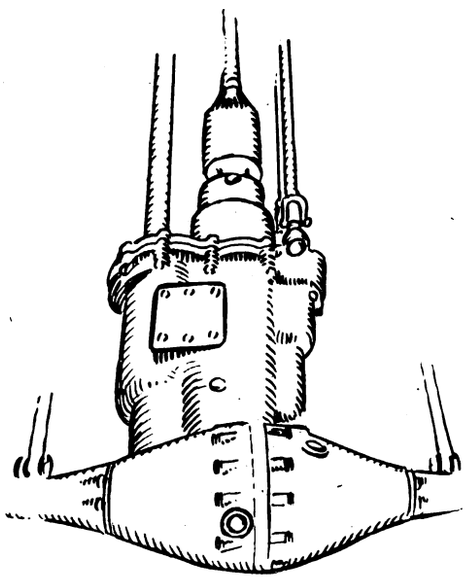
siderable ingenuity—this time in the mounting of its rear axle-transmission unit—was the Regal. In this car the torsion, driving and shaft-housing functions are all carried out by the single torque tube, which is mounted at its forward end in a ball bearing seated on a cross frame member placed well forward in the chassis. The severe and manifold strains which are thrown on the construction at this point are resisted by the use of two Hyatt roller bearings, which are placed one on either side of the ball joint in the tube. The gear housing differs somewhat from ordinary axle-transmission construction in that the gearset is placed slightly forward of the differential casing, and is enclosed in an entirely separate compartment. The valves, carburetter and magneto of the four cylinder motor are located on the left side of the assemblage, this arrangement affording ample room for the mounting of the steering gear, which is carried well to the front, and mounted entirely above the chassis. The car, which is rated at 30 horsepower, is produced in two models which have roadster and touring equipments, respectively.



AMERICAN SIMPLEX, TWO-CYCLE MOTOR.

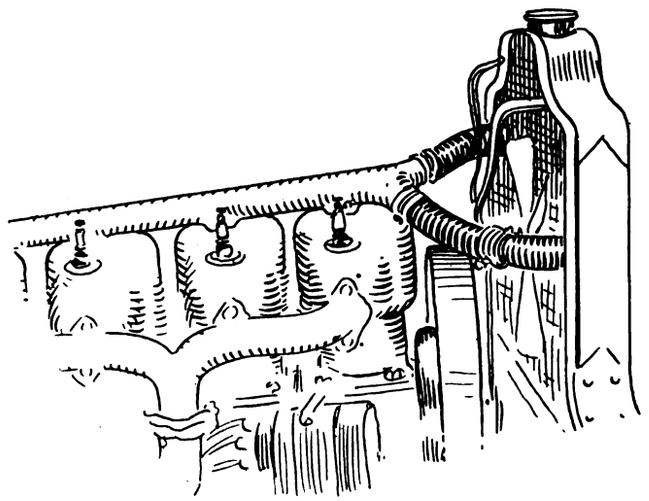
Already mentioned as possessing what is claimed to be the largest two-cycle motor ever installed in a motor car, the American Simplex, which, though several years old, never before has come to a New York show, possesses a number of other interesting features, as displayed in the single and latest model which was shown. As for the motor itself, it is described by its makers as being an ordinary adaptation of the three-port principle with no unusual or original devices to contribute to its success save in the way of perfected design worked out after long experimentation. The cylinders are cast in pairs, with jackets integral are of 5-inch "square" dimensions, and the motor has a rated output of 50 horsepower. Aside from this the machine is noteworthy because of the elaborateness of its mechanical construction—ball bearings being applied to all possible working parts outside the motor, for example—and for the massiveness and solidity of its design.

The transmission mechanism includes a five-plate clutch, with cork inserts, and an axle mounted transmission which is of unusually massive construction. The propeller shaft is equipped with two universals and a slip joint and the torque rod, which is carried well forward to a point directly beneath the footboard, is given a suspension which is absolutely universal. The driving action is taken by a pair of radius rods equipped with ball joints and also very long, thus giving the least possible amount of angular displacement as the chassis alters its relative position to the axle under the action of the springs. The selective gear shifting mechanism is so contrived that the selection is made directly inside the frame and close to the rocker shafts, while the gear shifting rods only extend to the gear housing on the axle. The car was mounted in roadster and touring forms, as shown at the stand.



AMERICAN SIMPLEX, REAR AXLE

The Speedwell, which though more than a year old, has not before appeared at the Palace, has undergone a few minor alterations since its initial appearance, notably in a lengthening of the wheel base and in the adoption of roller bearings for the telescoping journal at the forward end of the transmission shaft. This latter point, which is none too well protected in many gear boxes, is here given a thorough treatment, both thrusts and radial loads being well taken care of. The car, which is mounted on Timken roller bearings almost without exception, has a 40-45 horsepower, four-cylinder, vertical motor, and carries its gear box in the familiar location in the waist of the chassis, where it is mounted on a sub-frame extended back from the front of the vehicle. The master clutch is of the cone type, and many of the structural features are of purely standard type. In the construction of the motor, however, is to be found a commendable feature in the way in which the auxilliary drive is taken care of. The oil pump—which feeds the crank case from a sub base of liberal volume—the magneto and the timer are driven from a vertical shaft located in front and on the right side of the machine, the group being assembled in a stable service pillar of aluminum which supplies a complete housing for the drives, and for the hardened worm driving gears. The car is built in a number of different styles of body mounting, but at the Palace appeared in roadster form together with a stripped chassis for demonstrating purposes.

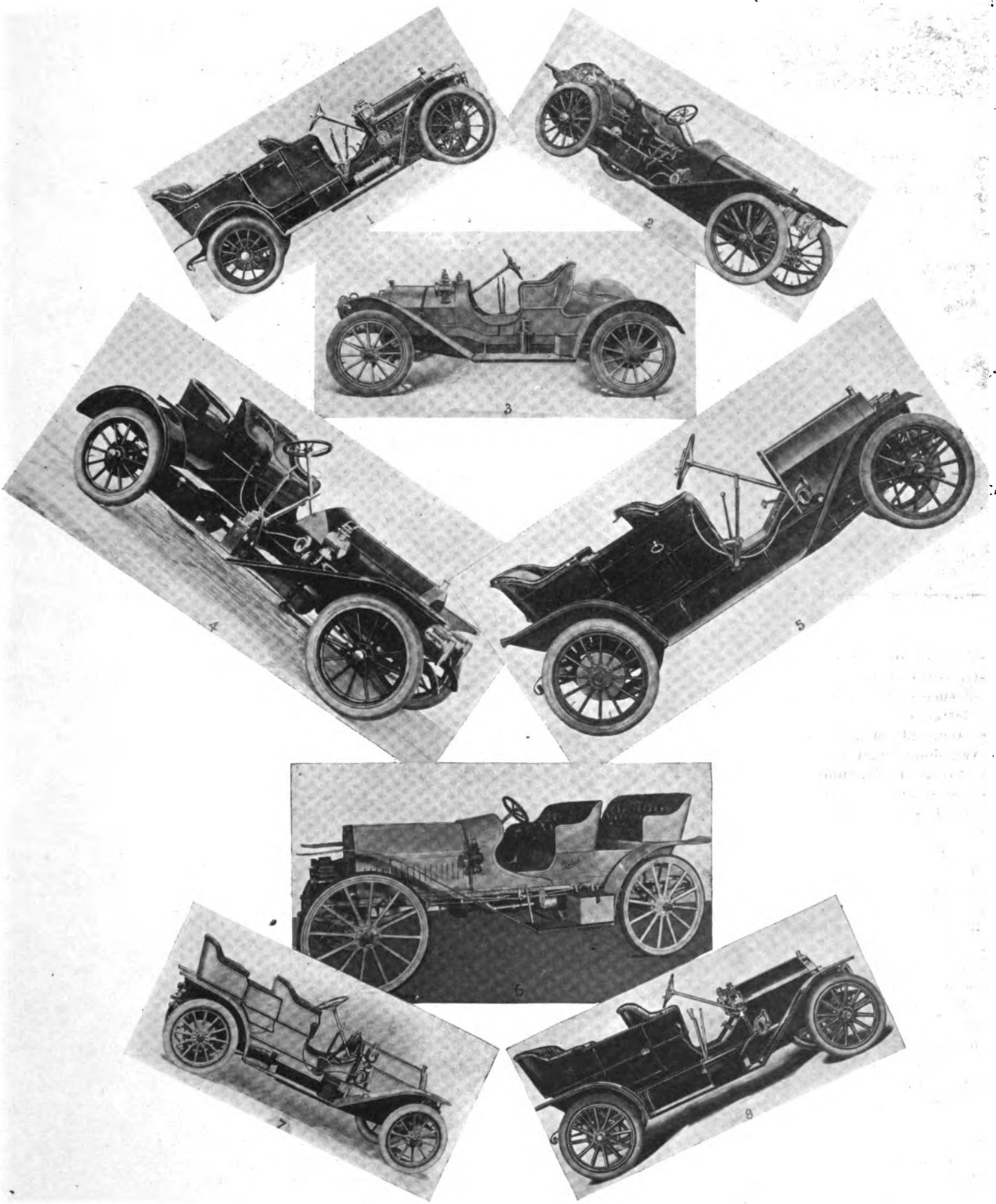


DETAIL OF MAXWELL PIPING

Considerable stir was created at the recent Garden City Sweepstakes on Long Island, when a proverbial "dark horse" in the Sharp Arrow fulfilled the mission which its name implied and carried off the honors in the event. The machine was absolutely unknown before, and now appears in public for the second time, the presence of a stripped chassis at the Palace affording opportunity for the alleviation of the considerable amount of curiosity which had been

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SOME DISTINCTIVE NEW CONSTRUCTIONS AT THE SHOW



1. AMERICAN SIMPLEX, TWO CYCLE, 50 H.P. TOURING. 2. AMERICAN TRAVELER, 60 H.P., 40-INCH WHEELS. 3. COATES-GOSHEN 32 H.P. RUNABOUT. 4. PULLMAN 20 H.P. ROADSTER. 5. MARMON "THIRTY-TWO." 6. BLACK "40" HIGH WHEEL ROADSTER. 7. PREMIER "30" ROADSTER. 8. INTER-STATE 35-40 H.P. TOURING.

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McINTYRE EXHIBIT, SHOWING NEW THREE PASSENGER HIGH WHEEL ROADSTER

expressed as to its construction. In this, it appears, considerable stress is laid upon the use of such of the newer metals as permit the designer to secure great strength with the saving of considerable weight. The use of vanadium steel in the springs effected a saving of 50 pounds, it is claimed, and the same process carried out pretty much through the entire machine resulted in the development of a car which is unusually light for its rated output of 40 horsepower. In general it is of conventional design, but evidence is not lacking of careful attention in the development of numerous small details. A typical instance of this is to be found in the arrangement of the torque rod suspension, which, as the traction drive is maintained through the front ends of the rear springs is free to move forward and back in the chassis. To allow for possible displacements of the axle from its proper transverse plane, however, the end of the torque rod is slipped into a bronze ball, which, in turn, is free to slide or roll in a hanger which is spring supported from the frame.

In the Coates-Goshen, is to be found a car which the gospel of the ball and socket joint is carried out to the last extreme, practically every articulation in the entire chassis being equipped with this form of connection, worked out after the general plan which is almost universally adopted in the arrangement of steering connections. In addition to this an original torque provision is found in the shape of a torsion resisting member which is affixed to the differential housing in the usual way, but instead of being carried forward to an independent support on the frame, is forked at its forward end, and affixed to a yoke and collar surrounding the propeller shaft just behind its point of suspension from the cross frame member. This machine also is provided with a rigid and positive interlocker to safeguard the gears from misuse and also with a contrivance for throttling the carbureter automatically whenever the clutch is withdrawn from engagement. Another original characteristic is found in the arrangement of the gear shifting mechanism which embodies the now familiar principle of the two short rocker arms which are selectively engaged by the hand lever. This mechanism being rather obtrusive at one point, it has been necessary to form an elongated yoke in the lower part of the emergency brake lever in order to clear the selective device—this arrangement furnishing a ready means of identifying the car. The "double drop" frame employed affords means of providing a low-hung body without sacrificing clearance, and the car is put out in runabout, touring and cab forms, on the same style of chassis, though in two sizes, namely 25 and 32 horsepower. The runabout and cab styles were shown on the stand.

A distinguishing feature of the Midland is the use of finger pawls on the gear shifting and emergency brake levers placed so far down on the levers that to reach them must require a conscious effort on the part of the driver. This is done with design, and with the direct intent of making mistakes in the handling of these same pawls, which release the reverse and brakes, respectively, practically impossible. In the mounting of the gear levers, it should be observed, some little ingenuity is displayed, particularly as to the manner in which selection is made possible without the use of the gate or gridiron segment. The hand lever, which is pivoted universally at its lower end, is adapted to engage either one of two forked levers when moved either in or out. In doing so, it depresses the upper end of a short lever carried by the rocker arm and itself pivoted at about its middle point, its lower end forcing over a small pin, which causes another lever, carried by the second arm to be forced oppositely to it, thus entering the stationary single segment and so locking the idle gearset in position. Aside from this feature, the car is mainly of conventional design: 30-35 horsepower motor, cork-insert-plate clutch, sliding gearset and shaft drive. At the Palace it was shown in the touring form, which is known as Model "G-9".

The Middleby is one of the "great-deal-for-the-money" cars. Aside from its air-

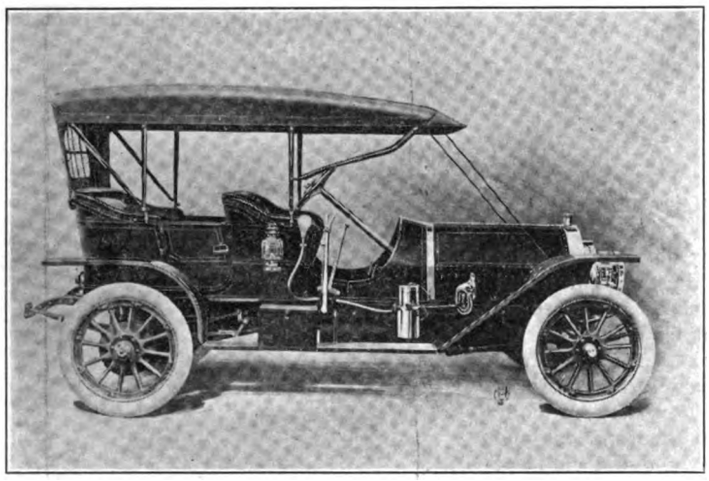
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cooled motor, which, by the way, is hung in the frame by means of transverse angle steel members instead of the more common arms cast integral with the crank case, it possesses little out of the common run in everyday construction. At the same time, it is equipped very fully, the regular allotment of accessories included magneto ignition with battery equipment as a standby, and a special convertible body of original design, which may be used either as a surrey or runabout by virtue of its folding and disappearing rear seat. The motor, which is rated at 25 horsepower, is equipped with main and auxiliary exhausts, the former being guarded by mechanically actuated valves. The same vehicle with a few reductions in equipment and a simpler runabout body, is put out at the remarkably low price of $850.

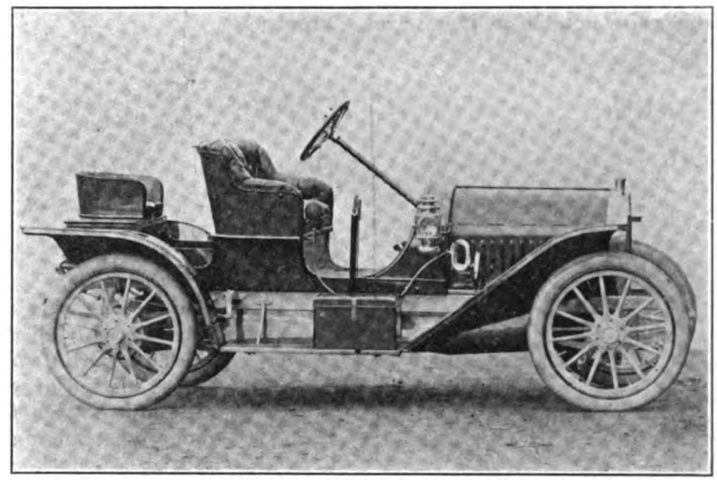
Among the newcomers, not hitherto mentioned, was the Benner Six—a light, racy type of vehicle, exhibited in chassis and grey racing body, rated at 25-30 horsepower and generally built to cater to the wants of the patron of speed who desires to limit his cash outlay to such an amount as may secure for him a vehicle of moderate size but considerable speeding capability. Aside from its peculiar racing characteristics, the machine presented few features not already canvassed in connection with the characteristics of the more familiar types of car.

That corner of the first gallery which was devoted to the display of the Browniekar was rendered conspicuous by the fact that one of the diminutive vehicles was there mounted on a trestle some five or six feet in height in order to enable the visitor the better to inspect its under mechanism. The subterfuge also served to attract the attention of passing visitors who otherwise might not have been keen enough of vision to see the exhibit at all, so small were the vehicles by comparison with the commercial vehicles staged nearby. The toy car, which it is in all truth, despite its practical construction, is equipped with a single-cylinder, vertical, water-cooled motor, and transmission by the primitive single flat belt to a countershaft, from which the rear wheels are driven through individual V-belts. Varying speeds are obtained by altering the pressure applied to one of the two foot pedals, while the simple mechanism of control is completed by a second brake pedal and the usual spark and throttle levers mounted on the steering wheel.

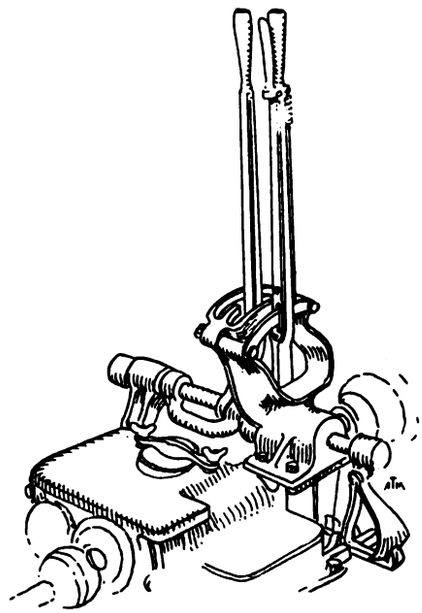
Taximeter, otherwise public service cab operation, has given rise to a number of vehicles built for just this purpose, and displaying characteristics especially suited for work of the sort. Of the two such vehicles shown at the Palace, the Rockwell, which is entirely new, exhibited several noteworthy features, among them the use of but two sizes of nuts and studs in the entire assemblage of the power plant, and the ingenious maner in which the transmission mechanism or the block type motor could be dismounted within a very brief space of time. In the former instance, the only tool required is a socket wrench—the gear case sliding out of engagement with the propeller shaft with its self-suspended torsion tube as soon as the four holding studs are relieved. In the second case, the use of spanners to disconnect the water connections also are necessary. Both of the two units come away from the remainder of the chassis complete and with their appurtenances integral and both are capable of ready repair or replacement on short notice. The cab in question is further distinguished by the use of left side control of the vehicle, with levers centrally placed and mounted hard and fast on the top of the gear case. The body construction also is distinguished by the use of a half front seat, the remaining space on the foot board being designed for the transportation of luggage. The motor is rated at 18-20 horsepower, ignition is by magneto with fixed spark, and the chassis is equipped with a neat five-pasenger extension landaulet body.



SPEEDWELL TOY TONNEAU



REGAL ROADSTER



ROCKWELL GEARSET

A second newly built cab, of somewhat similar construction in several respects, is the Ewing, which is equipped with a 20 horsepower motor, with 3⅞ by 4 inch cylinders, selective gearset mounted with levers in the centre of the footboard, shaft drive and generally standard construction. By means of an automatic pump arrangement, which ensures constant circulation of the lubricant between the sub-base and the crank case, lubrication is rendered entirely automatic, and as no sight-feeds or adjustments are provided, that feature requires absolutely no attention from the operator. The vehicle is provided with a neatly designed landaulet body seating five passengers inside. Structurally, it reveals no departures from standard practice in other lines, and appears as well suited to the requirements of the private town-car user as to the needs of the taximeter patron.

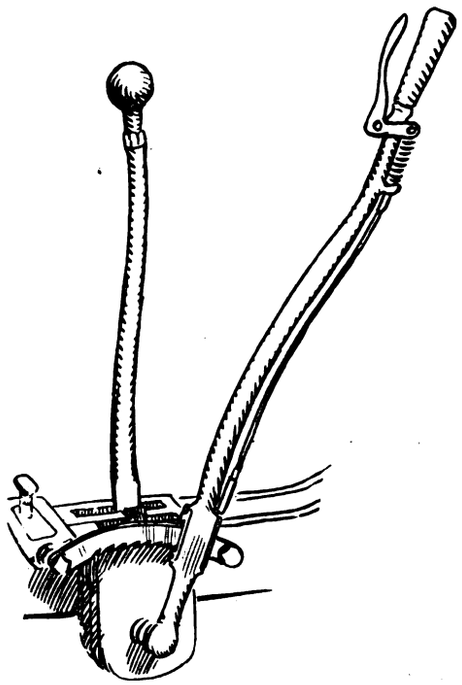
Still another vehicle answering to the same general description in the matter of intended service is the Sultan. This machine is practically an American assemblage of a foreign car, since motor, change gear and other chassis parts are imported entire, while the wheels, body work and accessories are assembled in this country.

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It is controlled from the right side, is of generally standard construction, and is driven by a 12 horsepower motor having four paired cylinders of 3 by 4⅜ inches dimensions, thermo-syphon cooling, magneto ignition, progressive gear change and shaft drive. It also is produced with town car, landaulet body, with or without extension top. As shown at the Palace, only the plain straight-front landaulet body was in evidence.

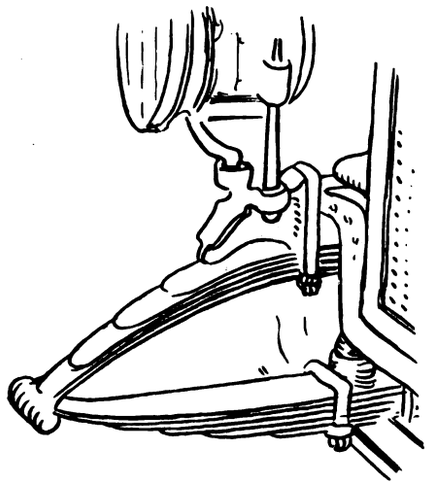
NEW MODELS OF OLD CARS.

Among the cars which represent the product of several years progress among the makers, numerous examples were to be found of new models which either constituted rather striking alterations over those which had preceeded them, or which were otherwise notable in themselves. Properly



STODDARD-DAYTON SIDE LEVERS

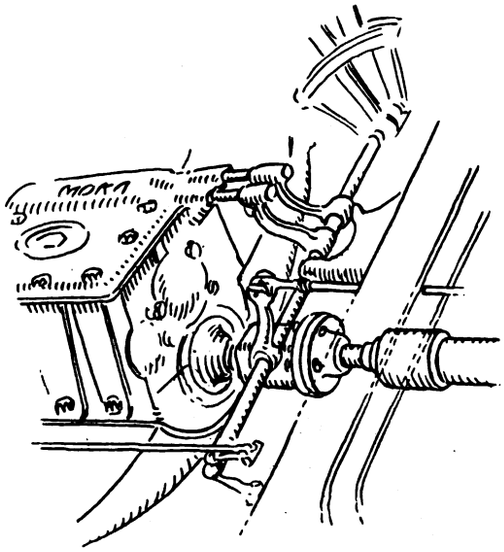
belonging in the latter class was the display of the new Model "N" Ford cars. Despite the considerable prominence which these vehicles already have achieved, they still attracted a deal of attention both because of the remarkable amount of car offered at the prices ranging from $850 to $900 for the various body mountings, and also because of the clever method in which they are constructed. In particular the manner of incorporating the magneto in the engine fly wheel and without the employment of rotating conductors of any sort should be mentioned, while the unit power plant design, including the use of the block type of cylinder casting except for the cylinder heads also is noteworthy. The heads in this case, contrary to the usual practice in the design of block motors, are closed with a single, water-jacketed member, the ready removal of which permits complete access to the cylinders and pistons for purposes of repair or cleaning. Another departure exists in the manner of suspending the chassis. Two semi-elliptical end springs are used, which are bolted hard and fast to the chassis at front and rear while the ends are shackled to the axle ends. In the case of the rear members, additional clearance for



JACKSON LAMP BRACKET

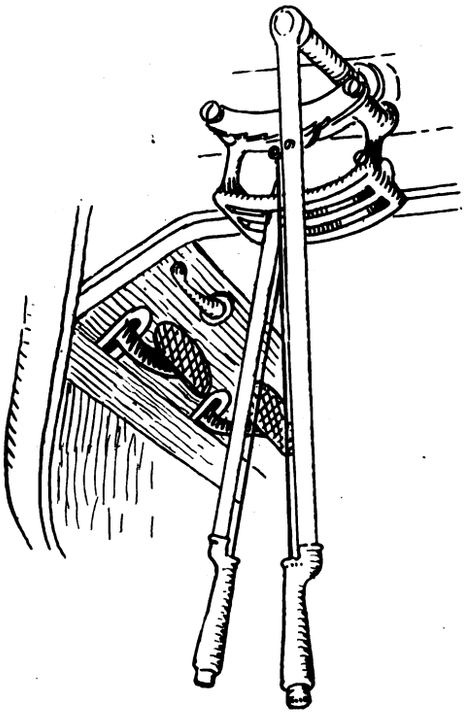
the differential housing is obtained by arching the spring upward in the center and also by elevating the shackle points somewhat by applying the connections to the insides of the integral covers for the brake drums instead of to the axle proper. Fords are now obtainable in a variety of body mountings ranging from the runabout and touring car to the town car and cab, not omitting a very neat adaptation of the principle of the inside driven coupe.

In the Stoddard-Dayton line, this unique bit of enterprise is manifest, that all of the



MORA TRANSMISSION

three chassis styles produced are of precisely the same design. That is to say, though the motor sizes, wheel bases and other dimensions are increased in proportion as the power of the cars increases for each of the models, the structural features, materials and arrangement, even to the body design remains practically unchanged. By way of variation, a very great number of different body designs are presented so that the line from which the purchaser may select is unusually extensive. For this year, comparatively few alterations have been made over the practice in vogue a year ago. The construction of the motor has been altered to the extent of abandoning the copper water jackets which used to be employed, and the substitution of the integral construction with large pressed steel end plates to complete the enclosure of the twin cylinder units. The overhead valve construction is retained as is the general arrangement of the valve gear. At the same time, a new system of constant flow lubrication has been installed which gives an endless supply of oil under pressure to all the bearings, actuated by a cam operated



MITCHELL SIDE LEVERS

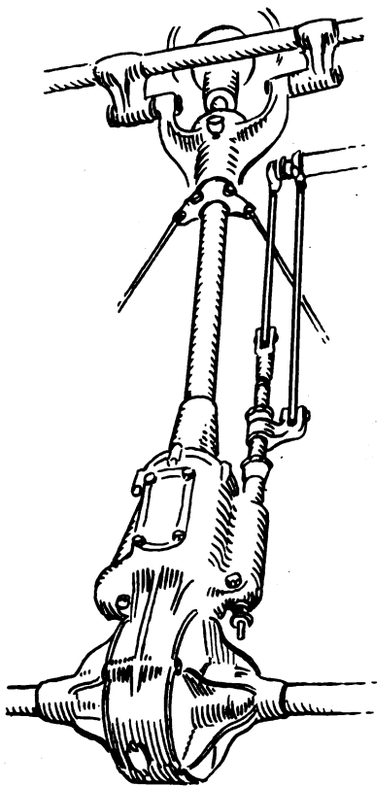
pump, driven from the cam shaft; and one or two other minor changes have been made. As for the chassis construction, some slight alteration has been brought about in wheel bases, tire sizes and the like, while on one or two models the foot accelerator has been adopted. In all models the position of the gear shifting mechanism has been altered so that now the gear lever comes outside the frame line instead of within it as before.

With probably a majority of the cars staged at the Palace there were presented practical reconstructions of previous models with only the usual number of annual refinements which the more stable makers find it expedient to introduce at the beginning of the year. Among these was the Mitchell line, in which a change has been made from the progressive to the selective method of gear shift, magneto ignition introduced reg-

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ularly on the 30 and 40 horsepower models, and on the latter a platform rear spring suspension. This model also is distinguished by a rather unusual type of foot accelerator which instead of following the usual pedal design, is arranged to swing in a circular arc parallel to the inclined toe board and so placed that the foot may control it without being tilted above the floor. In consequence the ankle strain arising from long periods of continuous driving is alleviated.

Full elliptic springs applied to the entire line, are a feature of the latest Jackson models, and of course, were given considerable prominence in connection with demonstrations of the new Model "H." This is

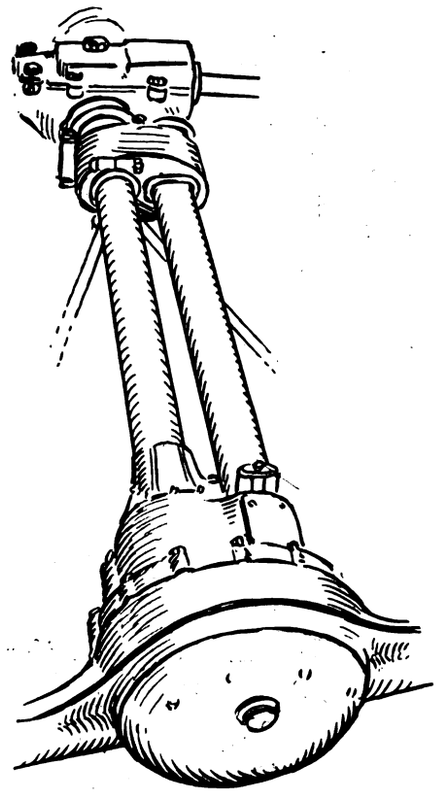


MARION TRANSMISSION

a clean lined little 30 horsepower car, equipped with quadruple motor having valves on the left, magneto ignition, and selective gearset arranged with the lay shaft over the main or driving line. By this means the desideratum of compact design has been secured, while the position of the gear box well forward in the chassis is such as to give it complete accessibility.

In the new light Mora rather unusual construction was found in the method of assembling the torsion and driving group. Instead of mounting the torque tube which encloses the propeller shaft in an independent spherical bearing, supported directly by the frame, as is more frequently done, the member is given a long bearing on the shaft itself, while the entire stress of the driving action in the shaft and the torsion of the axle group is thrown upon the rear bearing of the gear box—itself mounted on a suspension member attached to the frame. Otherwise the car is of light, well-designed and thoroughly practical construction.

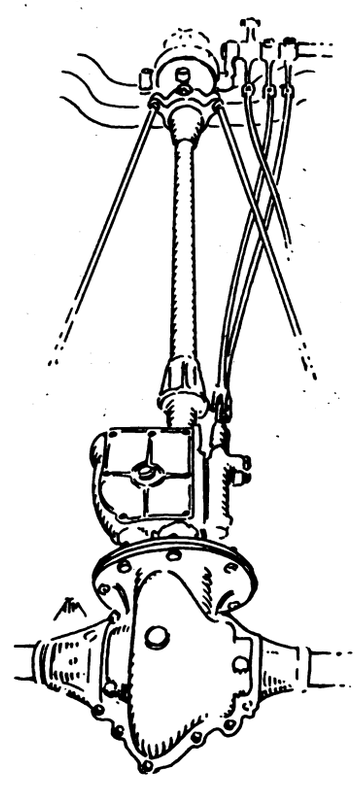
The use of 40 inch wheels on the Traveler model of the American car already has been referred to. This vehicle also retains in its integrity the underslung suspension which has remained an exclusive feature with its makers for several years, but introduces this year for the first time the adaptation



MARMON TRANSMISSION

of it to the four passenger vehicle. On the newer models engine dimensions have been increased from 5¼ by 5½ to 5⅜ by 5½ inches. The Wayfarer, Gadabout and Limousine models in addition to the Traveler are new this year. The first of the three in question is a very compact and low hung adaptation of the close coupled principle, though employing the usual method of frame suspension; the second is an embodiment of the baby tonneau idea, built with ample foot room between the front and rear seats; and the third is a more conventional vehicle of neat and attractive lines. The Tourist, Roadster and Speedster models are retained, with sundry minor changes. Three of the roadster models and one of the touring car were on view at the show.

In the new model Marmon, otherwise known as the "Thirty-two," is to be found an unusually neat rear axle assemblage which also embodies the change gear group. The axle housing is composed entirely of pressed steel, constructed with stiffening webs above and below and closed at the back with a light cover plate, also a stamping. The torque resisting medium is in the form of a tubular housing for the propeller shaft, while along side it is a second housing which encloses the pull-out rods which actuate the sliding sets in the change gear mechanism. The latter is so contrived that the [illegible] through the removable cover plates without disturbing the axle in the chassis, while at the same time, when in service every moving element in the transmission is completely enclosed against the inroads of dust and dirt. The motor is water cooled, neatly drawn and well mounted in the frame. A second and larger model, possessing many of the same features as the other, but having the change gear mounted in the waist of the frame in the more conventional manner is rated at 50 horsepower.



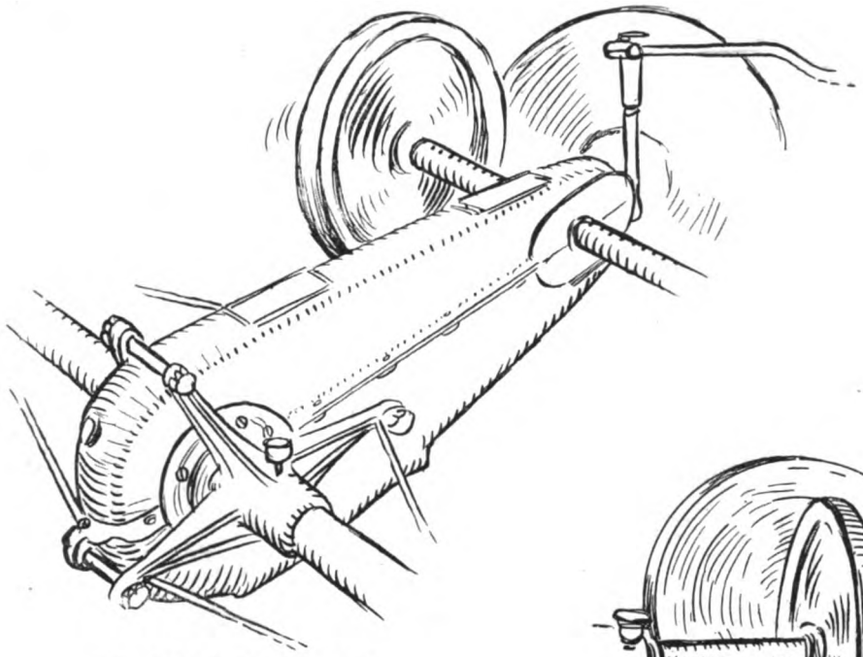
REGAL TRANSMISSION

The Marion cars, which also are numbered among those mounting the change speed gear on the rear axle, are equipped with a selectively actuated mechanism this year instead of the progressive type formerly employed. Another new feature is the adoption of magneto ignition with dry cells as a standby in place of the old accumulator equipment. The show display consisted of one of the 32-35 horsepower chassis and a top tonneau touring car. Adjacent to this booth was that of the Overland Automobile Co., at which were shown several of the newer models of that name, bearing the selective change gear—like the former mounted on the rear axle—but operated by side levers instead of by pedals alone, as was the case with the planetary change gear which figured on last year's model. This arrangement is still retained as an option, and appears likely to continue in use as the convenience of the leverless control, especially where women drivers are

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concerned, is of unquestionable advantage. Touring, roadster and the inside-driven coupe model already mentionel, figured in the display.

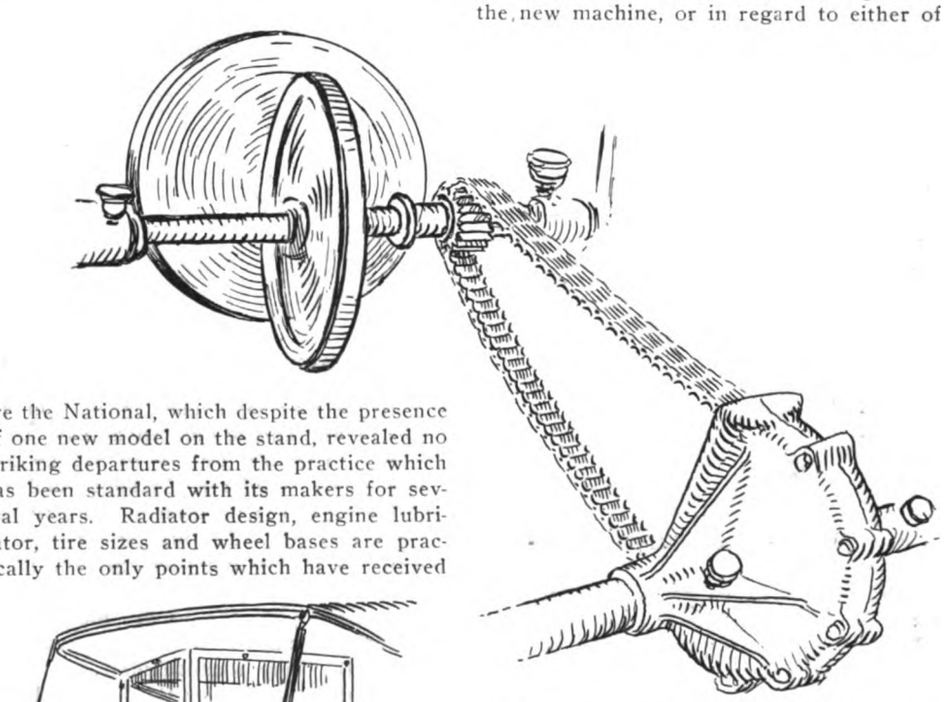
Maxwell has become a name for the seekers of the low-priced car to conjure with since the recent introduction of the little runabout known appropriately as the "Maxwell Junior." In general details, this little machine which has not graced a show before, follows the details of the two-cylinder opposed type which already has been so successfully exploited by its makers in cars of larger power and price. The opposed motor, planetary change gear and shaft drive to live rear axle employed on the larger machines are here faithfully reproduced. To complete the line, there are the 14 and 20 horsepower opposed models, continued over from last year, and the 30 horsepower quadruple engined car, which is built both in touring and roadster models.



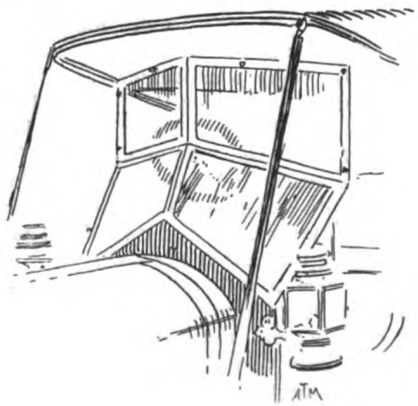
CARTERCAR CHAIN CASE

One of the two friction driven cars of conventional mould to be shown was the Cartercar, which was displayed in two models, the smaller of which was the new offering priced at $1,000 and making a most creditable showing at that figure. Mechanically, its most striking feature outside the use of the friction change gear, which is retained without change, is the use of a complete, grease and dust-tight enclosure for the chain which drives from the countershaft to the rear axle. This is put up in a neat and workmanlike manner and as shown in chassis form on the working model, served to attract considerable attention. The second machine of the group in question, was the Lambert, the smallest model of which now boasts a somewhat striking innovation in the shape of a silent chain belt connection between the countershaft and the rear axle. This machine also was shown with its transmission in running order and driven by an electric motor it formed one of the rare and welcome moving exhibits of the show. The transmission feature comprises merely the use of the chain applied to a pair of spur gears and eliminates the noise as well as one or two other of the disagreeable features usually supposed to accompany the use of the sprocket chain drive.

Other cars which fall into this category are the National, which despite the presence of one new model on the stand, revealed no striking departures from the practice which has been standard with its makers for several years. Radiator design, engine lubricator, tire sizes and wheel bases are practically the only points which have received extra attention in the production of the models of 1909. In the case of the Atlas, otherwise distinguished by the use of its original two-cycle motor, changes have been made affecting principally the transmission, and the arrangement of the engine auxiliaries. In the former instance, the planetary gear formerly employed has now been done away with to a very large extent and a selective sliding gear has replaced it. The thermo-syphon cooling system also has been displaced by a pump system. The engines still are produced in two and three cylinder units.



LAMBERT CHAIN-BELT TRANSMISSION



GAETH WIND SHIELD

The same principle of relatively few changes with occasionally the addition of a new model cast along the lines already wrought out, but differing from its fellows largely in matters of power and body equipment apply equally well to such cars as the Acme, Premier, Pullman, Moon, Gyroscope, Kissel, Pennsylvania and Reo. The Premier has a new method of demounting the clutch this year, the Moon a new system of twirling the magneto shaft in order to obtain an impulse when it is desired to start "on compression"; the Pennsylvania was shown for the first time in six-cylinder form, but otherwise practically without alteration in design either in general with regard to the new machine, or in regard to either of the two four-cylinder models; the Reo in addition to a newly designed front axle is now so arranged that the radiator may be filled without lifting the front hood.

The little Brush runabouts now are equipped with a new planetary change gear system embodying a multiple disc clutch, and also with a new type of carburetter. Otherwise they remain practically unaltered. The Gaeth in addition to a few minor changes in the construction of the chassis, was shown mounting a brand new type of wind shield of original design, which was arranged in four converging planes meeting

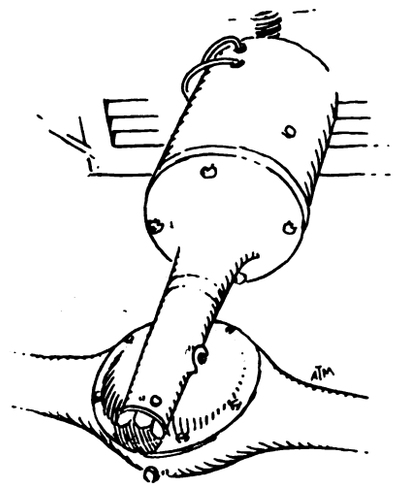
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in the center and a little above the dash. Both upper and lower sections were thus contrived to deflect the air currents, and while the upper one was placed at only a very slight angle to the vertical, the lower was inclined to the rear sufficiently to bring the upper section of the shield close to the faces of the occupants of the front seat. Folding and sash replacement features also were pointed out among its advantages. The "Perfected" Great Chadwick, still retains its peculiar copper water jacket formation enclosing the twin cylinder engine groups, and its air of immensity in the mechanical sense. The gear control has been rearranged and a few other minor alterations made. The Allen-Kingston, formerly made for the selling company of that name at a factory in Kingston, N. Y., now is built by the Bristol Engineering Co., and in redesigned form appeared as a rather close copy of foreign car practice, and impressively heavy in construction.

MOTOR BUGGY DEVELOPMENTS.

Activities in the promotion of the motor buggy idea have resulted among other things in the production this year of an entirely new development in that connection. As revealed at the stand of the Black Mfg. Co., it took the form of a four-cylinder, 40 horsepower machine, patterned in respect to general body outline, after prevailing touring car practice, but lightened in keeping with the formation of the average high-wheeled carriage type of vehicle, and standing on 40 inch wheels, shod with solid tires. The same firm also produces a variety of other types, which with the vast number of options and combinations of options which only carriage makers of experience know how to offer results in a line of 22 different models—all mounted on high wheels and answering to the definition of the motor buggy. One of these is a particularly neat adaptation of the surrey idea, which also is seen in practical counterpart on the stand of th W. H. McIntyre Co. The latter concern, formerly known as the W. H. Kiblinger Co., has undergone a change of name during the past summer, but practically without change of status, the interests which have controlled the business for many years now having entirely displaced those from which the company took its name when first established in the production of horse-drawn vehicles. The McIntyre Co., in addition to staging several types of runabout and roadster, in addition to the surrey mentioned, also announce the expected production of larger types in the not distant future, to be driven by four and even six-cylinder motors, but otherwise to be of the true high-wheeled variety.

Among the more familiar names in this connection, that of the Holsman—the pioneer vehicle in its class—was distinguished by the presence of a new "Gentleman's Automobile," in which a form of closed coupe body, with central controlling pillar adapted to be operated from either end of the seat was combined with a somewhat modified form of the direct transmission so long employed on this machine, using a chain belt of exclusive form. The most striking feature of the structure, however, proved to be the new motor, which is suspended on the transmission countershaft, and is of the four-cylinder, air-cooled, opposed variety. Instead of the usual crank and connecting rod assemblage, the opposed pistons are connected by an integrally cast web, which embraces a large annular ball bearing, so mounted as to have transverse play in its housing, but none longitudinally of the motor. As a result the movement secured is practically that of the old-fashioned Scotch yoke, but without the drawback of excessive friction which that mechanism possesses. The valves are automatic on the



COMMERCIAL TRUCK WORM DRIVE

intake side, and operated directly from the eccentric shaft which replaces the crank shaft, on the exhaust side, and the arrangement is unusually compact and light for the output of 26 horsepower claimed. Altogether it was the most radical departure in the engine line, revealed at the show.

Such of the other well-known names among this class of builders as were represented, presented but slight alterations in practice over last year. The Reliable-Dayton, which is a particularly solidly built vehicle revealing many of the engine and transmission characteristics of the low-wheeled cars, the Schacht, with its original form of friction drive, and the Anderson, with its combination of the buggy form of reach running gear with the chassis of the power plant hung on full elliptical end springs which also support the body, were among those in evidence.

NOVEL FEATURES OF COMMERCIAL TYPES.

Commercial vehicle interests at the show this year received no small impetus by the presence of three vehicles never before exhibited. In the Grabowsky, interest centers in the method of demounting the power plant complete. The driving mechanism comprises a twin-cylinder, opposed, water-cooled motor and planetary change gear, driving through a propeller shaft to the rear of the chassis, from which the rear wheels are actuated through a counter shaft and side chains. A sub-frame carries the plant, and is formed as a sort of slide upon which the plant rests and is secured by a simple fastening device. By disconnecting water and ignition leads and the muffler pipe, and swinging out the front cross member of the frame, it is possible to draw the plant out of the chassis in its integrity, when it rests upon a folding stand which is a part of the contrivance. The driver's seat is mounted above the power unit and the remainder of the chassis is thus left perfectly clear for the sort of body adaptation best suited to the needs of the purchaser.

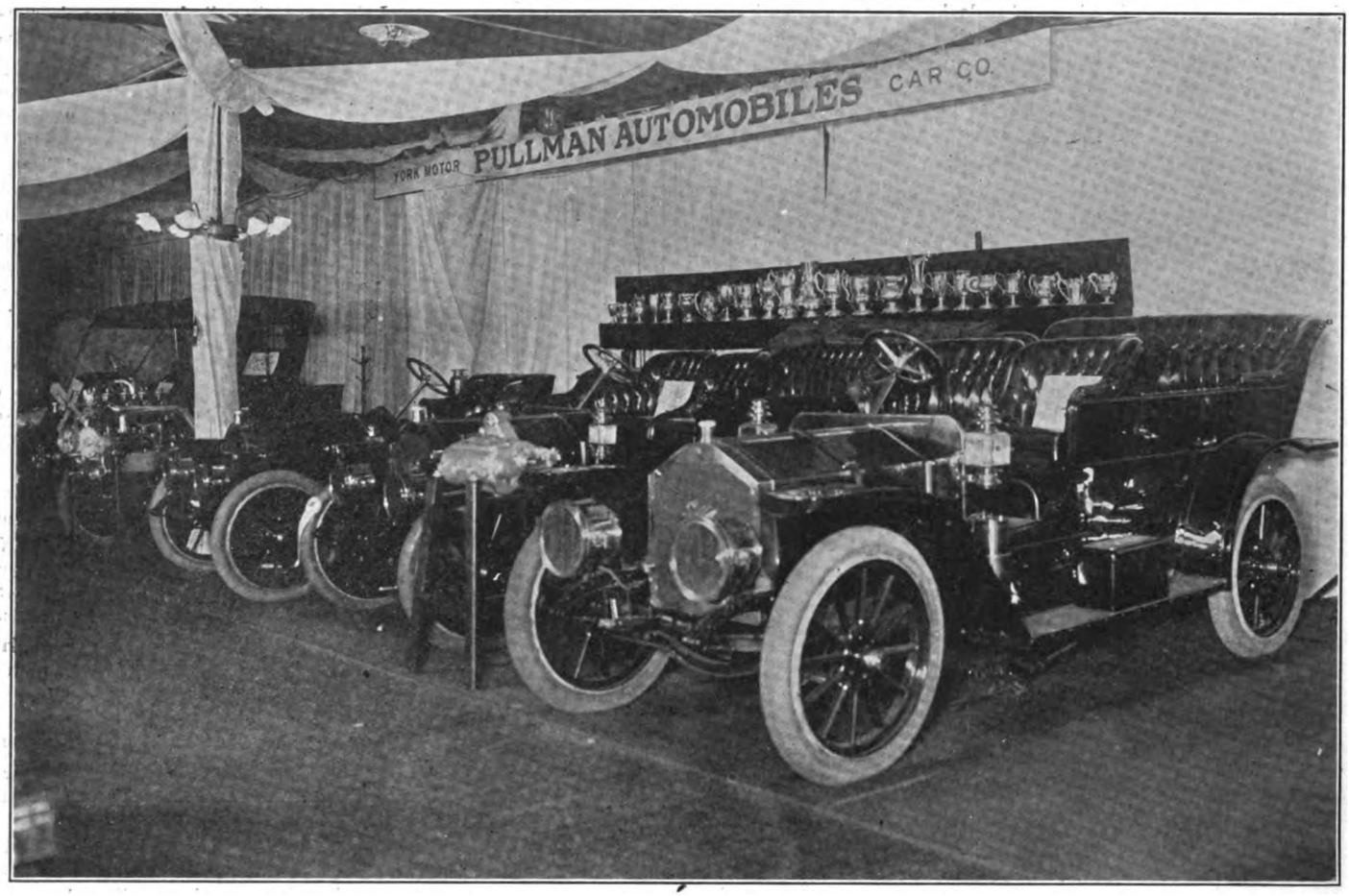
In the case of the Gramm-Logan, considerable originality is claimed for the adaptation of a sand box for securing traction for the driving wheels. This, it is said, never has been done hitherto in connection with motor vehicle construction. By depressing the proper lever, the driver is enabled to throw any desired amount of dry sand directly into the path of the rear wheels, as is commonly done for a similar purpose in railroad practice. The motors of this line are vertical and built with four cylinders, and the sliding gear transmission is connected through a multiple disc clutch of original design, and so thoroughly believed in by its makers that the practice of starting on the high gear is consistently recommended.

The third of the newcomers in this section is the Hart-Kraft—a 1,000 pound delivery wagon in which the demountable power plant feature also is played upon strongly. By disconnecting the plant from the frame of the vehicle at the three main points of support and uncoupling the ignition, water and exhaust leads, it is possible to remove the entire assemblage intact in a relatively brief space of time. This machine is further distinguished by being equipped with 36-inch wheels shod with 2½-inch solid tires—a size said to be produced especially for its makers.

As in former years, the Rapid line produced the most impressive display, with its wide variation of body adaptation applicable to the simple chassis construction employed as a standard feature. The double-opposed motor which has been a feature of this line for several years, and still is employed in the 20 to 30 horsepower units, now is supplemented by a 60 horsepower, vertical construction, which is calculated to extend the capacities of the line to cover practically all the demands of the commercial field. At the same booth, the light chemical truck equipped by the Tea Tray Co., called attention to the possibilities of the motor vehicle in connection with fire patrol systems.

Mack Bros.' Motor Car Co., the Reliance Motor Truck Co., and the American Motor Truck Co., each contributed their share of

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PULLMAN EXHIBIT, SHOWING ARRAY OF TROPHIES

heavy vehicles, gasolene driven, and intended for the arduous service of the heavy duty truck. Electric propulsion gained its share of publicity through the exhibits of the Lansden, Pittsburgh Motor Vehicle and Commercial Truck Co., of America's exhibits.

In the latter case, a particularly neat adaptation of the worm drive principle was shown on a heavy delivery wagon. The single driving motor is enclosed in a full steel housing which is bolted firmly to a tubular member enclosing the short length of driving shaft and made integral with the upper section of the differential and worm gear housing. The unit housing thus formed acts as combined motor and drive enclosure and torque resisting member, and is suspended from the frame at its forward end.

The Lansden exhibit, in addition to a display of trucks and wagons of different sorts conforming in general to the previous practice of this maker, also featured a unique platform truck intended solely for industrial transfer purposes. It consists of a low platform, supported on a pair of driving wheels placed under the centre and a single steering wheel mounted centrally under either end. The platform being divided at the centre any inequalities in load or road surface are compensated for by flexure in the chassis, so that uniform traction always is secured for the steering wheels. These are cross-coupled and may be controlled from either end, the steering wheel and controller lever being removable. The affair shows great promise and affords a welcome hint at one of the greatest possibilities in the future of the electric vehicle.

Commercial types of vehicle also were shown by the makers of the Maxwell, Atlas, Holsman, McIntyre and Brush cars. An unheralded newcomer was the Saurer truck, a Swiss importation, which was staged among the accesories on the second gallery, where its carburetter and motor starting and braking devices were the chief objects of attention.

DEVELOPMENTS IN FOREIGN PRACTICE.

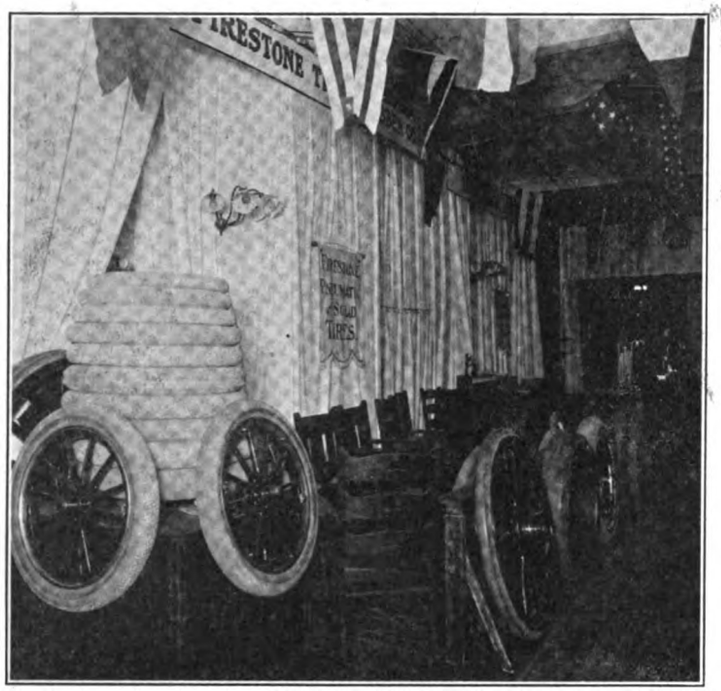
The foreign section, dignified by little signs attached to the cars showing that the exhibitors were mebers of the Importers' Automobile Salon, furnished a number of interesting contributions to the show, among them none, perhaps, more significant from the trade standpoint than those contained in the exhibits of the DeDion, Renault and Delahaye agents, where were shown types of the light car construction which is enjoying a brisk renewal of European popularity. The DeDion machines, with one exception, were of the single cylinder variety and mounted with bodies to accommodate different numbers of passengers and of types ranging from the semi-racing to the taximeter cab. The taxicab chassis already in general use in New York City was shown on the Delahaye stand, while the Renault exhibit revealed in addition to a number of large cars, a little twin-cylinder runabout in every sense of the word a miniature roadster, equipped with top, magneto ignition, and the full list of accessories and other equipment.

Magnificent examples of block cylinder casting were shown on the Fiat, Delaunay-Belleville and C. G. V. stands, the latter display featuring the new light pleasure and cab chassis, fresh from the recent Paris Salon, which mounted the unusual arrangement of the dashboard radiator, somewhat similar in principle to that so long employed by Renault, but differing from it in the direction taken by the air currents, and also from the fact that the cooling fan was encased within the radiator proper in an opening formed in its central section. The new Lancia car, with its neatly designed power plant and careful workmanship, attracted the attention which its recent racing notoriety sufficed to induce, while the details of its construction were such as to fix attention so drawn.

For the most part, the construction of the foreign vehicles was mainly a reproduction of that already seen at the Importers' Salon in New York last spring.

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PARTS AND ACCESSORIES AT THE PALACE SHOW





New Things Shown in the Display of Tires

When the girls of the village blossom out in new raiment on Easter Sunday they are the same girls as before, but they look better than ever, and similarly at the automobile shows the majority of the accessory exhibits are not strangers to the public and the trade but they look particularly new and fresh in their show-time clothes. Here and there real novelties do appear, however, so that the seeker after these is sure to be in some degree rewarded.

At the Palace show, the visitor came upon the exhibits in very mixed order so far as concerned the nature of the articles shown. Tires, ignition devices, lubricants, axles, speed indicators and all the variety of things which are included in the general group were arrayed side by side without classification. In a way, this contributed to the interest, each stand being quite unlike its neighbor as to the character of its wares.

It took investigation to discover the new things but there were quite a few of them —even more than the forecast had indicated. What contributed most to the value of the accessories exhibits, in the opinion of many, was the wealth of demonstration apparatus installed by the exhibitors for making clear by scientific means the merits of their goods. This effort to reinforce verbal argument with proof appeared stronger than at any previous show, and was particularly observable in the ignition exhibition. The production of so many new magnetos, as well as new types of coils, timers, distributers and the like, indeed gave a big incentive to such demonstrations. The ignition people were at every turn, and with their blue sparks flashing no matter which way the eye roamed, they quite ozonated the atmosphere. But the speed indicator, shock absorber and other exhibits were likewise alive with action.

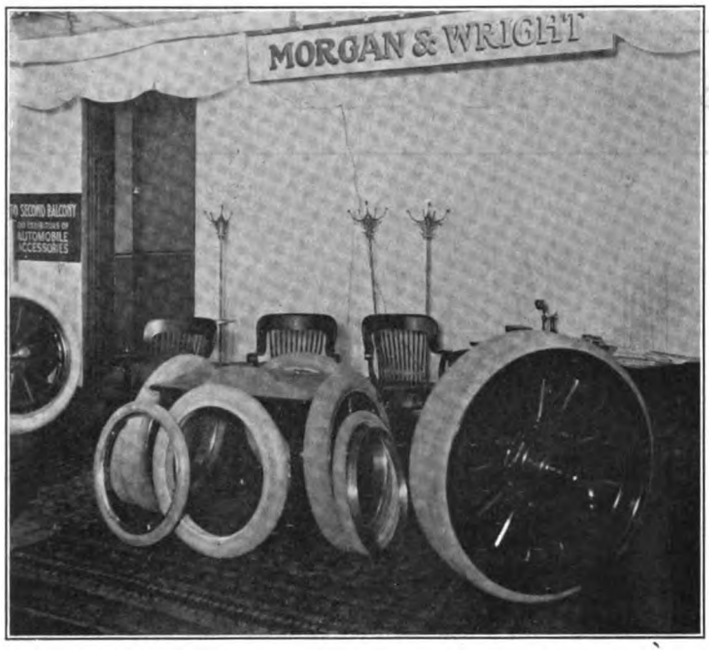
Makers of parts and purveyors of special metals were present in significant force, many of them looking for business in the far future rather than for any immediate accessions to their contracts. Concurrent with the first exhibition appearance of new ideas and construction in parts makers' products, however, some of the newer cars were found to contain them.

Demountable and quick acting rims flourished in nearly all of the tire exhibits and in some instances separately. Radical innovations in tires themselves were not apparent, although there were a few novelties and variations in the working out of familiar ideas. Among the newer products was an inner tube really consisting of several tubes, contained one within the other. Upon the bursting of the outer tube, the air valve could be turned to a position where pumping would inflate the next tube, and if that were to meet with accident the valve could be turned to inflate still a third tube contained inside the others. The device was heralded as the Faultless tube. A line of "motor buggy" tires was disclosed at the Swinehart stand, in recognition of the growing use of this type of vehicle, while special soft, resilient tires for electric pleasure cars were to be found at several stands.

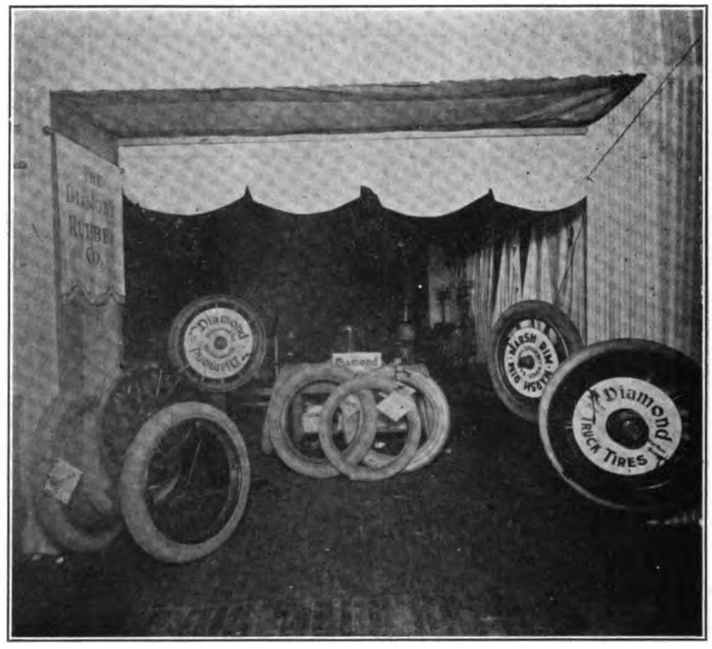
Tire shooting constables can be handed the "merry ha-ha" by the driver whose car is equipped with "bullet-proof" tires, as exhibited by the Zeglen Bullet Proof Cloth Co., of Chicago. For the fabric, real bullet proof cloth is used, such as is utilized for policemen's vests. It is made of heavy silk threads, woven in a peculiar manner. Revolver shots at close range cannot puncture it, and the flattened bullets that in tests had vainly tried to penetrate the cloth formed part of the company's exhibit. It was pointed out that where bullets fail, not much chance is given to nails, broken bottles and other unpleasant tire deflators. The casings using the bullet proof cloth cost in the neighborhood of $100 apiece.

The $5 prize hung up once a day by the Continental Caoutchouc Co., of New York, for the quickest change on their demountable rim, attracted some nimble workers and served to acquaint many owners and drivers with both the construction and the merits of the device. The company's display included Continental round tread and "AC"

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MORGAN & WRIGHT TIRE EXHIBIT



DIAMOND TIRE EXHIBIT

flat tread, the flat tread type course and the non-skid steel studded tires, guaranteed for 3,500 miles, 4,500 miles and 2,000 miles, respectively.

Following the development of its demountable rim for racing purposes, the Diamond Rubber Co., of Akron, O., has produced a simplified and improved form for the tourist. This rim was shown at the Diamond booth as one of the features, together with Diamond grip tires and the many other styles in the established line. At the Morgan & Wright display the leaders were the new heavy, flat tread tires and the new "Standard Universal" quick detachable rim. In the former an increased traction surface has been obtained by increasing the width as well as the thickness of the tread. It is claimed that although giving increased puncture protection and greater traction, this construction has been effected without a diminution of the tire's resiliency or an increase in the liability to fabric separation. The makers' tests have developed an increased traction efficiency in this type over the regular round tread of as high as 50 per cent. in some sizes and an average of 33⅓ per cent.

Decorations of automobile tires equipped with wings were scattered so generally through the building that the casual trade visitor might easily have received the impression that the whole show was dominated by and given in honor of the Hartford Rubber Works Co., of Hartford, Conn., for whom the symbol in question has long been a trade mark. There was considerable comment and amusement over the fact that some of the company's rivals sported the Hartford winged-tire on their decorative signs. The company did not suffer by the unintended spread of its mark, but was conspicuously present, anyway, and enjoyed a prominent location. The new "Standard Universal" quick detachable rim was also on display at the Hartford stand, together with specimens of the new large size tires to fit 30x3½ and 32x3½ rims, respectively.

Modelers' clay in a long strip on a board hung at the corner of the space of the Firestone Tire & Rubber Co., of Akron, O. The clay bore the imprint caused by the passage over it of one of the new Firestone non-skid tires, which was recently brought out. It will be recalled that the tread of the Firestone has raised lettering in rubber, reading "Firestone Non-Skid," the letters themselves affording the variety of angles, edges and points of road contact necessary for the non-skid effect. In reverse the clay showed the lettering plainly, just as the impression would be made in a soft spot on a country road. The Firestone demountable rim, which may be used in connection with either clincher or quick detachable tires was made prominent, visitors being reminded of the success with which the equipment was used by the winning Locomobile in the Fairmount Park race at Philadelphia. The regular line of Firestone tires made up the balance of the display.

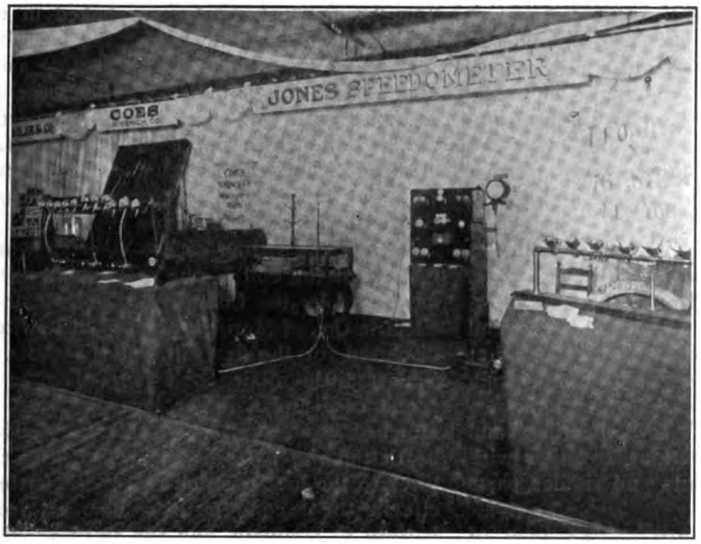
"How about Lohengrins in a Goodyear air bottle?" was one of the perplexing questions of the show, resulting from the fact that one of the larger sizes of these ingenious compressed air containers was used to operate the three-octave Gabriel horn which occasionally supplanted the band in supplying music. It was found that the capacity of such a tank was greatly in excess of any estimate that would be made by the appearance and size of the bottles used. These bottles, which inflate tires more quickly than any pump, were the headliners in the exhibit of the Goodyear Tire & Rubber Co., of Akron, O., and ranged in size from little fellows up to enormous affairs for garage use, fitted on trucks so that they may be wheeled from one place to another. The main body of the exhibit, of course, consisted of the Goodyear detachable and clincher tires in plain, heavy tourist and Bailey treads, together with the Goodyear quick acting rim.

Leather-covered, steel studded tires have been added to the line of Empire tires, made by the Empire Automobile Tire Co., of Trenton, N. J. Attention was directed to the fact that the studs in the tread are set within a cut, hardened steel washer, giving greater traction surface than the ordinary stud, and so hardened as to be almost unaffected by wear. The Empire red rubber tubes and patches were also shown, as supplements to the line of outer covers.

"That casing looks as if it needed a shave," was the stock and somewhat bromidic joke which the passers-by perpetrated on the demonstrators at the Republic stand, where the new stagged tread, non-skid tire was on view. The basis for these humorous attempts was that in the molding of the tread with its rubber projections, small hair-like ends are formed in the air outlets of the mold and these were not removed from the exhibition tire. To test the quality of the rubber used in the tread, visitors were privileged to pluck at the rubber bands.

Numerous types of cushion and solid tires were staged, from the kind having big solid rubber pads like elephant's feet to near-pneumatics and very soft, light tires for electric carriage service. The accessories of one kind and another were also plentiful, from chain grips, as shown by the Weed Chain Tire Grip Co., of New York, to tire jackets of the latest cut, fashioned to accommodate spare tires with demountable rims. Outside non-skid treads, electric vulcanizers, acid cure solutions,

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JONES SPEEDOMETER EXHIBIT



STEWART & CLARK SPEED INDICATOR

gum fillings, blow-out emergency patches, and a host of other tire things, such as pumps, pressure registers, tank inflaters, tools, and the like were plentifully in evidence. The Stepney spare wheel, carrying inflated tire and ready to slip on where the regular tire has met with trouble, was revealed in various sizes and colors, one of the models being a "combination" wheel capable of being fitted to two different sizes of rim.

SPEED INDICATORS NEW AND OLD.

Throwing steel nails at a big suspended magnet was the diversion offered by the Warner Instrument Co., of Beloit, Wis. After the bystanders had thrown all the nails the magnet would support, the boy in charge pressed a button breaking the circuit, and the nails tumbled down on a flat table beneath with a clatter that startled everybody in the vicinity. The apparent object was to impress the onlookers with the fact that the Warner Auto-Meter is actuated on the magnetic principle as distinguished from other speed indicators. The new Warner instruments differ radically from the former models, and have a circular case enclosing the mechanism, including the odometer. The readings appear through openings in the face of the case. The speed indicator is of the same interior construction as formerly, but the odometer is now of the company's own manufacture and registers to 1,000 miles in the trip and to 100,000 miles in the season total. A small electric light, concealed under the glass, makes it possible to illuminate the whole face of the instrument at night. A fixture combining a clock is supplied if desired. The old model Auto-Meter is still retained, but is sold at a reduction of $25 in the price. Four instruments were displayed at the show, including the old and new models with and without the clock. A tachometer for r.p.m. readings was also shown, operating on the same magnetic principle as that employed in the automobile speed indicators.

Nineteen models of Jones speed indicators, odometers, clocks, annunciators and other specialties were mounted in the Jones Speedometer stand, not to mention the new taximeter which the company is producing. The speedometers ranged in price from $15 to over $100, the low price instrument being one of the new productions for the coming season. Display cases contained the internal parts of some of the speedometer mechanisms, arranged under electric lights to show the high quality of the workmanship.



NEW WARNER AUTO-METER

At the exhibition space of the Stewart & Clark Co., of Chicago, two general types of speed indicators were shown. Most of the models were of the centrifugal type, but the latest addition to the Stewart family is an instrument working on the multipolar induction principle. In prices from $15 up, the speed indicators were ranged in the whole variety of the extensive line which the company is putting out, and some of the combinations with clocks were also on view. Favored visitors at the Steward space were given medals so much like gold in appearance as to be highly ornamental, while bearing a bas-relief of the leading Stewart speed indicator on one side and on the other a familiar but expressive motto as to the tribulations of poverty. Several lesser known makes of speed indicators were staged at the show, but this year found no new manufacturers essaying the field.

IMPROVED SYSTEMS OF IGNITION.

More magnetos and simpler, better ones than at any previous show were to be found among the ignition exhibits. The list of magneto makers has been considerably increased, and about a dozen different makes were disclosed. As becomes veterans in the field, the Bosch Magneto Co. had quite a large space where both high and low tension types were mounted. The exhibit was very complete, the different types of magnetos being arranged with hand cranks and the necessary sparking equipment so that the visitor could see each type in actual operation. Spark plugs and magnetic make-and-break devices completed the display.

From New England two new magnetos appeared, bearing the Heinze and the Pittsfield name-plates, respectively. Both high and low tension magnetos are being made by the Heinze Electric Co., of Lowell, Mass. The magnets are curved to a circular form and the complete devices are enclosed in long cylindrical cases. The design contemplates the use of the magnetos in places where the height of the ordinary magneto forbids. The Heinze company has also taken up the manufacture of spark plugs this year, and is supplying them in both mica and porcelain insulation. A feature of the exhibit was a complete arrangement of timer, coil and spark plugs, all eight times as large as the normal size, but operated the necessary sparking equipment so that

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mous coil and plugs, with the big sparks which the latter gave off, suggested in appearance the ignition equipment of a giant's car.

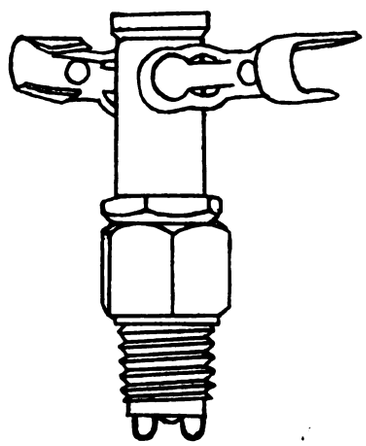
The show space of the Pittsfield Spark Coil Co., of Dalton, Mass., was full of other things beside the new magneto which the company disclosed but the enthusiasm of the attendants was all for the new product. Both the primary and secondary windings of the device are in one vertical coil at the end and outside the horseshoe magnets. Extension pieces at the top and bottom bring the coil within the path of the magnetic lines of force. The coil is stationary, but is easily removable. The balance of the Pittsfield exhibit was made up of such devices as timers, distributers, spark plugs and coils. A new "short coil" has been introduced in the company's line, being about two inches shorter than the regular coil. It is fitted with a pair of hinge brackets, which allow it to be dropped forward to take out the units for adjustment. This feature is of especial value where there is an overhung dash. The coil is fitted with a kick-off switch which can be assembled for either two sets of batteries or for magneto and battery.

Remy high tension alternating current magnetos appeared in considerable numbers at the exhibit of the Remy Electric Co., of Anderson, Ind. They were shown equipped with distributers for two, three, four and six cylinder motors. In the Remy the winding is stationary, doing away with moving contacts for the primary circuit. The latter is conveyed to a dash coil of special design, from which the secondary circuit is led to a distributer on the magneto and thence to the various cylinders. Years of experience have been incorporated in the 1909 models, and the latter are distinguished for a compactness and neatness of finish that properly reflects their interior excellence.

A white marble display board was one of the attractions in the space of the Splitdorf Laboratory, of New York. Mounted on the board was a Splitdorf coil and a revolving arm from which high tension sparks jumped to four brass plates arranged in a circular path. The mechanism was operated by a motor controlled by a rheostat to give any desired speed. The board showed the action of the Splitdorf magneto in connection with the Splitdorf coil. A small glass chamber containing a set of sparking points and equipped with a connection to a pump so that the interior air pressure could be raised to correspond with the compression in a motor cylinder, was also a part of the display board fittings. Through the glass it was observable under test that while the spark from battery ignition is inclined to diminish and fail as the pressure is increased, magneto ignition gives a bigger and more brilliant flame the higher the pressure goes, a phenomenon that proved very surprising and interesting to visitors.

To overcome the difficulty of starting large motors on the magneto, an ingenious device has been embodied in some types of the U. & H. magnetos shown by J. S. Bretz, of New York City. No matter how slowly the motor—and correspondingly the magneto—may be turned, the device in question gives a quick snap to the rotation of the magneto armature, thus producing a strong spark. When the motor has attained speed, the device automatically retires from action and the magneto takes its drive in the ordinary way. Various models of the U. & H. were displayed in the Bretz space, all showing a high perfection of workmanship and excellent design. The magnetos were but one of several lines of automobile specialties that Bretz handles, however, the exhibit also including F. & S. bearings and Bowden flexible connections, together with Hartford universal joints and similar parts and accessories.

Another German magneto but now of American manufacture was shown in the



EDISON DOUBLE SPARK PLUG

Hess-Bright, while at the Wheeler & Shebler space a magneto of new design and very low price was displayed. The Motsinger dynamo generator, used in connection with ar accumulator, was represented, being the only one of its type at the show. At the stand of the Witherbee Igniter Co., of New York, the new Volta magneto was on view, bearing evidence of the quality and efficiency which characterize all of the Witherbee products. The well known Witherbee igniters were likewise displayed, together with an imposing array of Wico timers, distributers, switches, spark plugs, lamps and similar electrical accessories. Winking lights and flashing sparks in the exhibit served to draw visitors to a closer examination of the devices as shown in actual operation.

Two plugs in one were demonstrated by the Edison Auto Accessories Co., in their Edison plug, which contains in one porcelain two distinct and separate sets of electrodes. The diameter of the porcelain core in this plug is not much greater than that in the single plug, despite the fact that it contains the double system. The plug is of the conventional, the secondary contacts being on the side instead of on the top. The "central" electrodes are baked in the porcelain and come flush with the porcelain surface at the bottom, not projecting as in commonly the practice. The base is equipped with two wire "points", one from either side, which curve over the central electrodes and recive from them the spark. The plug is designed to be used in connection with the double ignition system.

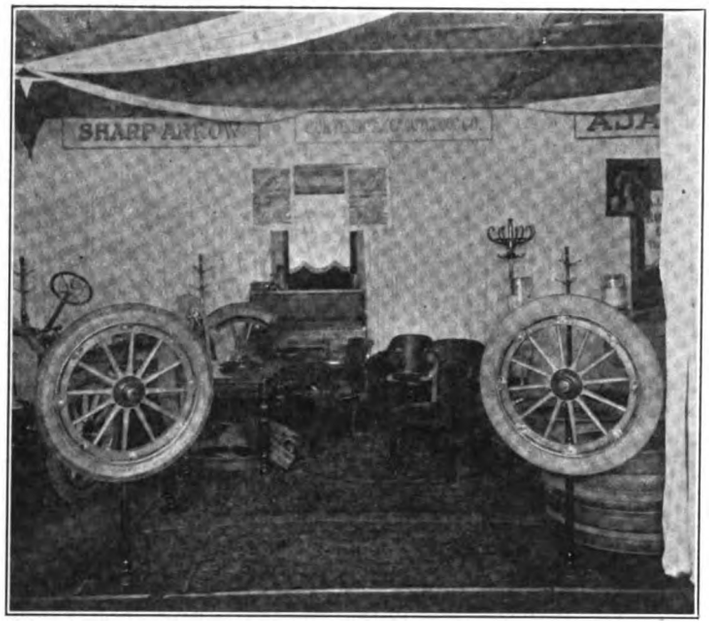
Putting the switch on the steering wheel instead of the coil is one of the new ideas developed by the Connecticut Telephone & Electric Co., of Meriden, Conn. The switch, disclosed for the first time at the show, is a neat little affair consisting of a small round case and a finger lever. It can be attached to the steering pillar or underneath the rim of the wheel. Pressing the lever to the first position closes the battery circuit, the second position changes from battery to magneto, and the third position throws both the battery and the magneto circuits into operation together. Thus the car may be started on the battery and later switched to magneto or both without reaching down to the coil. The Connecticut exhibit, of course, listed the company's coils, timers, distributers, switches, indicators and quick detachable primary and secondary terminals.

During the week many of the ignition exhibitors took advantage of the National Carbon Co.'s pretentious testing apparatus for determining the action of coils, timers, distributers and the like, particularly as to current consumption and accuracy of timing. The indicators registered in units of one-thousandth of an ampere in disclosing the current consumption, while the revolving sparkers on a black background showed just how many sparks were delivered to each cylinder and at what point in the stroke. Four sets of ignition apparatus could be tested in comparison at one time, and the wide difference in the showings made was the occasion for no little astonishment at times, not to mention some warm feeling. The National company, as a matter of course, openly favored those forms of ignition outfits which were the most economical in battery current consumption and which would thus insure satisfactory service from the igniter dry cells and the "multiple" batteries which the company offered.

Numerous improvements in ignition apparatus were shown by other exhibitors, including a new form of Atwater Kent sparking device, and a "battery saving timer" perfected by the Autocoil Co., of Jersey City. Porcelain extension terminals were featured on Kingston coils, the terminals extending through the dash so that the wiring might be concealed.

Reliance spark plugs, made by the Jeffry-Dewitt Co., of Newark, N. J., have undergone refinements since they first were introduced two years ago. Where formerly a slight gap was incorporated under the cap, is now a pellet of high resistance metal which supplies the advantages of the gap but lacks its objectionable features. The

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CONTINENTAL TIRE EXHIBIT



J. S. BRETZ CO.'S EXHIBIT

makers of Reliance have brought out a new plug to be sold for considerably less, called the J. D.

The Auto-Contact battery box, exhibited at Chas. J. Downing's space, is designed to hold dry cells and to connect them in various series and multiple series combinations without employing wires. The contacts are made through the agency of stiff copper flat springs which are attached to the box lid. When closed these metal surfaces bear on the battery terminals while the nature of the connection is controlled through the agency of two switches contained within the box. The claim is made that with this battery case there will be no batteries improperly connected, no loose or broken connections, no accidental short circuits and that the cells can not be improperly placed. The box is made of metal and is in several sizes and colors.

A simple and effective lock switch for attachment to the coil box has been produced by the Safety Device Co., of Indianapolis. The appliance consists of a Yale lock and a two-way switch for use in connection with two sets of batteries or for a battery circuit and a magneto. The possessor of the key can use either of the circuits, but when the lock is closed and the key not at hand, it is impossible to make use of either circuit without destroying the coil. The device may be attached to any coil and is also applicable to electric vehicles.

Of the Patterson wireless dry battery holder, exhibited by Stanley & Patterson, of New York, the chief feature is the molded rubber composition plate which forms the top and into which as been incorporated threaded sockets to receive the cells. Each threaded socket or cell receptacle is provided with an automatic bridge of heavy spring copper. To connect the cells one need only screw them into the receptacles and proper contact is made. If for any reason it is desired to reduce the number of units the required number of cells may be screwed out a turn or two and the series contact between the other cells will be maintained through the automatic bridge. No wiring is employed and no operation is required to connect the cells other than the simple act of screwing into the receptacles. By an ingenious device, which also is protected from moisture, it is possible without opening the box to obtain any combination of connections which may be desired. By altering the position of a thumb screw a series connection, a multiple-series, or half the cells, with the balance in reserve, may instantly be obtained. Cells with the necessary screw tops can now be obtained from most battery makers, it is claimed.

The dry cells of the Eastern Carbon Co. have been familiar to patrons of automobile shows for several years, but this year the company showed something new. The innovation takes the form of a square cardboard box which is now supplied to whoever prefers it to the conventional round jacket formerly used. The advantage of the square box is that it prevents the cells from turning and that it keeps the battery in the position in which the user places it.

Despite the fact that in the field of carburetters the Stromberg is known as "the one with a glass float chamber," this transparent feature is one of the least important of the claims put forward by the Stromberg Motor Devices Co., of Chicago. This carburetter is of the float feed type and in demonstrating it to the public, the exhibitors called attention to the fact that the instrument contains a fine woven wire gauge through which the gasolene must pass before entering the float chamber. The gauze serves as a separator and prevents the introduction of water into the motor cylinders. The usual form of needle valve to control the gasolene flow is employed, but the needle has an unusual feature in that the upper part of it is surrounded by a spiral spring which tends to keep it from being jounced out of its seat and assists in maintaining a constant level. On the top of the float chamber, on the outside, is incorporated an adjusting screw by means of which the gasolene level can be altered. This adjustment is of special value on force feed cars where it tends to encourage the fuel consumption by maintaining a constant level under conditions of pressure. The gasolene passages throughout the carburetter are accessible from the outside, opportunity being given by this arangement for cleaning by removing threaded plugs. The spray nozzle is not adjustable, the fixed opening having been designed for duty without recourse to the familiar needle-valve adjustment. Through a choked air passage that creates a high velocity of air at all speeds the gasolene is drawn from the nozzle in ratio to the speed of the motor. This feature is responsible for the ease with which an engine can be started. The spray, as it leaves the nozzle, falls on a wall heated by a water jacket surrounding the wall. The result is immediate vaporization. The auxiliary air is introduced through this heated chamber by means of a valve controlled by two springs, one spring operating at low speed and the other drawn into action at high speed. The entire instrument is highly finished and with its glass housing around the float chamber, presents an attractive appearance.

A two port carburetter made in various sizes made the sole exhibit of the Allen Fire Department Supply Co., of Providence, R. I. A horseshoe shaped cork float controls the gasolene level, a spray nozzle with an adjustable needle valve regulates the vaporizing and a sliding valve serves for throttle control. A single port suffices for the air intake at low speeds while the open-

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ing of the throttle brings the auxiliary into service and increases the speed of the motor. The carburetter does not contain springs, a diaphragm or sensitive valves. An adjustable low throttle varies the density of the vapor according to the r.p.m. of the motor.

On the theory that vapor is more perfect when the gasolene is drawn through a small jet, two small rather than one large fuel opening distinguishes the Economy carburetter, invented by Adolph Saurer, of Switzerland, and exhibited by Albert Otto, of New York. A float chamber contains a brass float which controls the gasolene flow through the usual needle valve medium. The outlet from the float chamber is a straight channel in the bottom of the mixing chamber. From this channel the two jets rise, though in separate chambers. One of the two jets or nozzles is in service whenever the motor operates. When the opening of the throttle increases the speed of the motor an automatic clock valve is caused to open, bringing into service automatically the second nozzle. The clock valve is controlled by a plunger in a dash pot working against a spring.

In the improved Webster gasolene gauge, disclosed at the stand of the Randell Faichney Co., of Boston, is found a method of attachment obviating the use of the blow torch or soldering iron, yet permitting an entirely tight union which anyone can make in a very few minutes. As an integral part of the gauge base, near the dial, is arranged a flange with slotted ends. Three holes are drilled in the tank, the larger or center one being for the body of the gauge, and two smaller holes to coincide with the slotted flange. Through the larger hole is inserted a collapsible collar which when opened inside the tank brings into position three holes similar to those drilled in that receptacle. The two end holes in this collar are tapped for 10-24 machine screws With the collar in place the screws are turned in, first passing through a flexible gasket on the outside of the tank. All that then remains to be done is to insert the gauge in the tank, place the outer flanges so that the screws pass through the slotted ends, tighten the screws, and an air tight union is effected. The gauge proper has not been changed save in one important item, the price, and this item has been reduced despite the improvement.

A new separator with simple mechanism developed comment at the exhibit of the Austro-American Separator Co., of Cleveland, O. The No-Shammy Automatic Separator consists of a tubular compartment in which a float, so made that it is lighter than water and heavier than gasolene. As water accumulates in the tube the float rises until eccentrically a needle valve enters its valve seat and shuts off the supply from the tank. Opening a set cock in the bottom of the float chamber draws off the water, the float falls, the needle valve opens and the contents of the tank may again circulate. A small quantity of water in the chamber does not affect the gasolene which passes over the top of it, but when the water has risen to an extent where a little more would permit it to enter the pipe leading to the carburetter the float automatically checks the flow until the chamber is drained. Obviously the separator is incorporated in the gasolene line, between the tank and the carburetter.

GENERAL ACCESSORIES.

In the general accessories the Gabriel horns, cut-out valves and shock absorbers made by the Gabriel Horn Mfg. Co., of Cleveland, were conspicuous, the Gabriel combination of some 39 separate horns operated from a musical keyboard being one of the big features of the show. In lamps the Badger Brass Mfg. Co.'s exhibit was as complete as could be found. The Besnard system of lens and reflector arrangement was shown in the larger types of the Kenosha company's "Solars" and the eclipsing device for lessening the light when driving on city streets was mounted for examination. Charles E. Miller, the New York importer and jobber, in addition to a regular line of accessories, offered a new automobile headlight of enormous candlepower, the light being supplied by an incandescent mantle heated by a gasolene flame.

In even so minor a thing as an oil gun, the exhibits disclosed many detail improvements. One of the newer types has a hinged spout, which when turned up parallel with the barrel closes a valve at the bottom and prevents any outflow, but which in action may be turned at right angles to the barrel, to get into awkward places, or may be extended straight down as in the ordinary gun. The piston and plunger are also devised so that with the spout turned up, the gun may be carried full of oil in the tool kit, without danger of leakage. The gun, which made its first appearance at the show, has been named the Autocrat and was among the specialties displayed by the American Thermo-Ware Co., of New York.

A shock absorber exhibited by Ernest Fientje, of Cambridge, Mass., consists of a cylinder and piston made of prosphor bronze, connected to the car by steel hangers. The cylinder is tubular shaped and contains, in the larger size, a quart of glycerine. The piston is made with four holes about ¼ in. in diameter, and two holes about half that size drilled through it. Over the larger holes caps are arranged which permit the glycerine to freely pass through on the downward motion of the body but which close on the recoil. The smaller holes are always open. The absorber is to be attached to the body of the car and the axles. When a jounce is encountered the downward movement is not checked unless the action is violent, when it is quickly overcome. At the rebound of the body the larger holes in the piston are automatically closed so that the glycerine is permitted to return to its storage chamber through only 15 per cent. of its channels, causing the body of the car to rise slowly and gradually. The operation of the device is noiseless and all parts are sufficiently strong for their work. The absorber is made in two sizes.

The Joyce-Cridland telescoping motor jack, shown by the Joyce-Cridland Co., of New York, consists of two screws, one inside the other, both screws operate at the same time, permitting twice as much lift or drop as the single screw jack to an equal amount of handle motion. The handle, which moves in a horizontal direction, is equipped with a ratchet and the usual ratchet control pawl. The inner, solid, screw is made of high grade steel; the outer, hollow, screw and the base are of selected malleable iron; the base contains a well of oil into which both screws dip when not in use, lubricating them thoroughly and adding to the life of the threads and minimizing friction.

A self-starter exhibited in connection with the Sauer motor truck was offered as being of unusual merit. To the chassis is attached a long cylindrical pressure tank supplied by an air compresser which, when needed, is operated by the main driving shaft of the car. From the tank a pipe conducts the air to a manifold located on top of the engine. The manifold has ducts leading to the cylinders and contains a four way valve, the operation of which is controlled by the cam shaft. When it is desired to start the motor a lever attached to the dashboard is thrown in position and air is released into the four-way valve which directs it into a cylinder, starting the motor. The air pressure required for the initial movement is very little, and the directing valve continues a distribution of the air pressure to the cylinders until the lever is thrown out of position and the normal function of the engine commences. Throwing the same lever in another position engages the air compressor, the tank is refilled until a gauge, located also on the dash, signifies a sufficient storage, when the lever will discontinue the action of the compressor. By throwing the throttle lever past the "off" position, the turning of the engine may be altered by the shifting of the cam shaft and the cylinders made to act in compressing successive charges of pure air drawn through a special part in the intake connection, whereby any desired amount of braking effort may be secured and the cylinders given the additional benefit of a thorough scavenging.

Suggesting in appearance a cross between some kind of a hand truck and an equally queer looking amusement device, the "Auto-Creeper," brought from Syracuse by The Brown Co., of that city, was explained to be a useful appliance for anyone who has to crawl under a car to do repair work. The "Creeper" is about 4 feet long and 2 feet wide. It is composed of 5 wooden slats laid on two cross beams, castors are set in the braces and the whole thing is only 4 inches high. Its purpose is to provide easy access to the under parts of the car with-

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out requiring the repair man to crawl through or lie in any grease which may be there. He has but to lie on the creeper, roll it and himself under the car and work from a more advantageous position than is possible when lying on the floor.

In the S. P. R. muffler cut-out the valve is made to open against the exhaust pressure, instead of with it as is the usual custom and often the cause of leaks. The cut-out is attached by clamping it in position so that the body covers the space in the bottom of the exhaust pipe where a piece has been sawed from the pipe near the muffler. This method of attachment does away with the necessity of removing the exhaust pipe for the purpose of attaching. The body of the cut-out forms a pocket into which much of the residue from the engine falls and this is forced out when the cut-out is opened instead of finding lodgment in the muffler. The action of the muffler can be directed by a foot pedal. The device was shown by the S. B. R. Specialty Co., of New York.

When it becomes necessary to inject five or ten pounds of heavy grease into a transmission case which is provided with only a very small opening, it is necessary either to remove the upper half of the case or inject the lubricant by means of a grease gun. The latter method is the simplest, but the difficulty with it lies in the fact that it is an inconvenient and slow operation to load the gun with the grease. In the Tuckahoe gun a means of instantly filling the magazine, even with the heaviest grease, has been devised. When it is desired to fill the inner chamber it may be easily removed and plunged into the grease, the piston is forced back by the entering charge, the air is expelled and the chamber fills. It then is replaced in the outer shell and operated in the usual manner. It is a cleverly worked out device and was shown by the Rubly Mfg. Co., of New York.

In the improved washer shown for the first time by the I. J. Smith Mfg. Co., of New York, the long pipe through which the water is conducted to the hose has the usual free circular movement, but it differs from the former type in that the pipe extends in the opposite direction considerably beyond the pivot on which it is hung, thus permitting the introduction of a counter balance which maintains the arm in a horizontal position when not in use. When it is desired to wash a car the attendant puts a slight strain on the hose, the pipe arm is inclined and the inclination opens a valve permitting the flow of water. The radius of the arm is sufficiently great to deliver a stream to any part of a vehicle without moving the latter, and the automatic cut-out serves to economize on the water by preventing waste when the apliance is not in actual use.

A dash shield with the lower section inclined toward the driver and the upper section in the usual perpendicular position was put in new by the E. T. Burrowes Co., of Portland, Me. In addition to the protecting qualities the shield has additional desirable features in that the slant of the lower section of the shield adds to the appearance of the vehicle and reduces the wind resistance to a marked degree. The shield has no bars across the glass and no extended supporting rods in front. There is nothing to rattle, yet it may readily be padded up or used in various positions. The exhibit contains also the Burrowes spare wheel and Burrowes number plate hangers.

PARTS AND MATERIALS.

For the eye of the manufacturer and the designer the offerings of special parts and materials covered an extensive range, from the steel frames of A. C. Smith and Driggs-Seabury down to the finishing fittings for bodies. Special metals were the subject of several exhibits, the different alloys offered



being characterized by individual merits of a nature to invite their use for this or that purpose. The display of the American Ball Bearing Co., of Cleveland, O., included front tubular and I-beam axles complete with hubs, the latter fitted with either the company's own make of 2-point ball bearings or with annular bearings of German manufacture. A complete line of bevel and chain drive rear axles was also shown, some of these being fitted with the 2-point bearings and others with the German annular bearings throughout, and still others fitted with roller bearings. One of the newer productions was a novel steel jacketed rear axle with planetary transmission, having automatic clutches all running in oil. In fact the steel jacketed rear axles shown deserved particular attention. The housings for both the differentials and the drive shafts were drawn from sheet metal. Some of the axles were fitted with short drive shaft for two universals and others with an extended shaft for one universal. In some cases the axles were shown with the adapter for receiving sliding gear transmission by bolting on at the upper end of the drive shaft. The display combination of the newer types with some of the standard axles which have been made by the company for well known cars for several years, revealed how much the automobile manufacturers lean on outside assistance.

The great amount of publicity that had been given the new pressed steel rear axles of the Timken Roller Bearing Axle Co., of Canton, O., made these the subject of prompt inspection by inquirers in a position to contemplate their use as well as by the merely academic investigators. The feature of the steel casing which forms the housing is that it is one piece extending from hub to hub, tubular at and near the ends and tapering up to an enlarged globular center to receive the gear carrier. The latter, which contains the differential, bevel gear, pinion and all bearings, may be removed bodily from the axle proper without in any way affecting the latter and while the car rests on its own axle, if desired. Adjustment, which is provided for all bearings, can be accomplished entirely from the outside. The one piece steel housing is so designed that it is of gradually increasing strength toward the center of the axle and all sudden changes in strength of cross section have been eliminated. Consequently the usual truss rod can be done away with, improving the looks of the axle very materially. The axles are made in two sizes, of either the fixed hub or full floating type. The smaller size is made with long driving shaft and concentric enclosing tube. The Timken roller bearings were shown in a number of other axle and hub combinations.

Axles and bearings were also the elements of the exhibit made by the Standard Roller Bearing Co., of Philadelphia. An extensive variety of ball bearings was shown, of both the full and silent type, sets for some of the prominent cars which equip with Standard bearings being mounted under glass in suitable frames. Roller bearings had as the leader the new, improved Grant bearing, which is made interchangeable with any other form of conical or tapered roller bearing, while the new annular roller bearing was represented, the latter being interchangeable with the principal standard sizes of annular ball bearings. Thrust bearings, too, were offered. In the axle display the Standard three speed transmission axle was featured. In this the transmission is mounted on the rear axle within the same housing as the differential mechanism, comprising with the axle itself and its anchorage to the sub-frame of the car a very neat arrangement. Special axles as made to manufacturers' orders were likewise mounted on the display rack.

The many uses of Parsons' manganese bronze in front axle castings, steering gear castings, housings, brake banks, engine frames, lamp brackets, differential gear cases, transmission gear cases, levers and other parts were forcefully presented by the William Cramp & Sons Ship and Engine Building Co., of Philadelphia. Some of the larger specimens of rear axle housings cast in this metal were very remarkable. Bear-

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ing castings of Parsons' white brass were likewise on view.

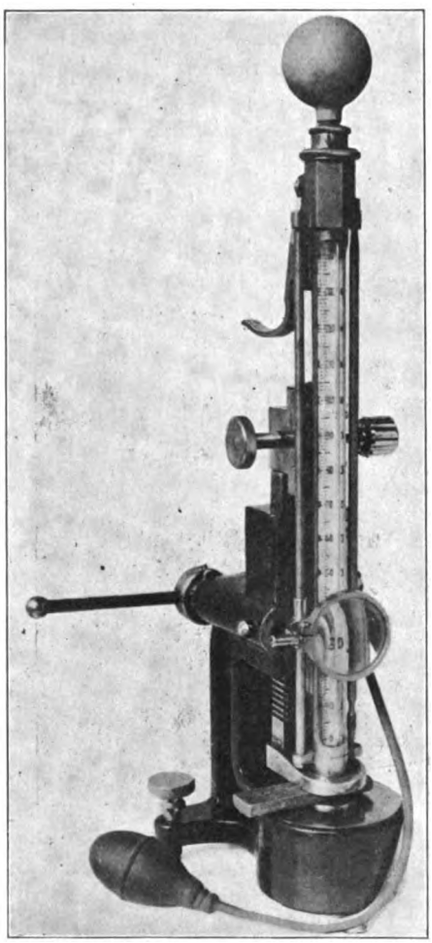
Steering, transmission and differential gears were plentiful. In steering gears the very newest to be disclosed was the product of the Baldwin Chain & Mfg. Co., of Worcester, Mass. In general principle it consists of a bevel pinion at the bottom of the steering pillar, the pinion engaging a geared ring which when rotated actuates the rocking arm. The Brown-Lipe Gear Co., of Syracuse, N. Y., revealed a new model transmission gear, together with its established line of older models in both progressive and selective types. The company's differentials and steering gears were displayed in several styles, as usual. The Warner Gear Co., of Muncie, Ind., in a comprehensive exhibit offered among other things a transmission and clutch group of radical design. The transmission is mounted and supported on the case surrounding the forward end of the propeller shaft, doing away entirely with any frame or sub-frame support. The transmission has the disc clutch unit contained therein, getting all the benefits of unit construction and at the same time avoiding putting the weight on the rear axle. The arrangement makes it possible to have the propeller shaft casing serve the triple purpose of radius rod, torque and support for the gear case.

Power plants of several makes were staged, the Rutenber motors of the Western Motor Co., of Logansport, Ind., being to the forefront. Three models of the four cylinder Rutenbers were shown and a six-cylinder 50 horsepower model. The radiator displays were not lacking. The Briscoe Mfg. Co., of Detroit and Newark, had a strong exhibit, a new radiator of the square effect Mercedes type being featured. Chains for all classes of service were offered by Charles E. Miller, of New York, with the famous Brampton line; by the Whitney Mfg. Co., of Hartford, Conn., with the numerous types of Whitneys, and by the Diamond Chain and Mfg. Co., of Indianapolis, Ind.

THE SCLEROSCOPE A FEATURE.

Sensational among the show exhibits was an instrument called the Shore "Scleroscope" for measuring the hardness of metals and the physical properties of materials such as rubber, fabric and other components of things used in automobile practice. Because of the technical nature of the instrument, probably the best presentation of its character and purpose is that offered by its manufacturers, which is in part as follows:

"As hardness is not an energy like heat, it could not act on or move an indicator unless energy is externally applied or stored up in the indicator. This is the underlying principle of the scleroscope, and the process is as follows: A tiny little plunger weighing about one-twelfth of an ounce is allowed to drop less than a foot in height inside of a highly polished glass tube on to the metal to be tested. The plunger or drop hammer has a diamond set in its striking point which enables it to slightly penetrate the hardest steel for an unlimited number of times. This penetration is simply nervous touch carried out very far and is for the purpose of getting the metal's own expression of its physical hardness or rigidity. When thus the drop hammer strikes a metal, it has stored up in it a certain amount of



SHORE SCLEROSCOPE

energy—enough to make it rebound almost the full height of the fall, provided none at all is absorbed by the metal or other substance. However, this is not possible, for there is always some energy lost due to the yielding of the material. Softer metals naturally yield more than hard ones and thus we come to be able to get responses from different metals with such a contrivance as the instrument in question, and it is very clear that the higher the rebound of the indicator hammer the greater must be the actual hardness of the metal. In addition to the energy absorption hypothesis, it has also been found that the harder the metal or other substance, the greater is its recuperative power after having caused a permanent deformation and its is this recuperative effort on the part of the metal struck that serves to throw up the indicator hammer to heights equal to the hardness of the metal. The recuperative power of a metal is not elasticity or resiliency.

"When soft lead is struck by this instrument, an indentation is made which if imitated by putting a steady weight on the same point, would require about twelve pounds. As the metals under test are harder, the weight must be greater, until when hard steel is reached more than a hundred pounds are required. As the area of the point is very small it will be seen that when these weights are multiplied by the said area enormous pressures are obtained. The actual striking force of the little drop hammer is thus estimated to be from thirty thousand to five hundred thousand pounds per square inch, or in the latter case over twenty thousand times its own weight.

. . .

"Hardness of a material having been duly measured, it is very easy to ascertain the other important properties of a metal by indirect methods, and when no further testing by expensive machinery is required. Hardness, multiplied by the degrees of flexure in bending a strip of metal until it begins to take on a permanent set, gives the approximate strength and elastic limit, while hardness multiplied by ductility, the total amount of bending in degrees, gives the ultimate strength."

The device was exhibited by the Shore Instrument & Mfg. Co., of New York. It is the invention of Albert F. Shore, who has developed in connection with it a number of valuable formulae for determining the qualities of various metals and materials. The attention it attracted from engineers and technical experts indicated how largely the latter are studying the problems of material selection.

Ramblers at a "Private" Show.

Among the several "private" shows which are being held this week, is that staged at the headquarters of the New York branch of Thomas B. Jeffery & Co., 38-40 West Sixty-second street. With interior and exterior handsomely decorated with American flags, bunting and evergreens, this exclusive exhibit is one to cause many a passer-by to pause, while the "Welcome to our Show" sign at the door is a cordial invitation to step inside. On the grade floor are displayed the various Rambler models in touring, roadster, runabout and close-coupled body mountings. They include a Model "44" close-coupled touring car, a spacious seven-seated Model "45," Model "35" shown in close-coupled and five-passenger styles, and two specimens of the popular two-cylinder opposed, 22 horsepower model. A polished 35 horsepower chassis sectioned to reveal the working of the parts, and beautifully executed, adds an effective finish to the array, while the new Rambler spare wheel, which is now a part of the regular equipment is a feature of practical interest. The exhibition will be continued at the salesroom until the close of the Madison Square show, January 23.

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Summary of Automobile Exhibits, Including Exclusive and New Features

Acme Motor Cor Co., Reading, Pa. Acme gasolene cars. One 45 h.p. 6 cylinder touring car, one 45 h.p. 6 cylinder tourabout, one 40 h.p. 4 cylinder tourabout.

American Motor Car Co., Indianapolis, Ind. American Roadster gasolene cars. Three 60 h.p. 4 cylinder roadsters, one 4 cylinder touring car. On two roadster models wheels enlarged to 40 inches diameter. Exclusive feature: Under-slung frame, low center of gravity, clearance 12 inches.

Atlas Motor Car Co., Springfield, Mass. Atlas (2-cycle) gasolene cars. One 30 h.p. 3 cylinder touring car, one 30 h.p. 3 cylinder runabout, one 20 h.p. 2 cylinder runabout, one 20 h.p. 2 cylinder taxicab, one 20 h.p 2 cylinder delivery wagon. New models have centrifugal pump instead of thermo-syphon cooling, geared instead of belt driven fan. Atwater-Kent ignition system, sliding gear transmissions. Exclusive feature, construction of 2-cycle motor.

Austin Automobile Co., Grand Rapids, Mich. Austin gasolene cars. One 60-90 h.p. 6 cylinder touring car, one 60-90 h.p. 6 cylinder limousine, one 45-50 h.p. 6 cylinder touring car with close-coupled body, latter model new this year. Exclusive feature, demountable baby tonneau or rumble showing no separation.

Benz Auto Import Co., of America, New York City. Benz gasolene cars. One 40 h.p. 4 cylinder limousine, shaft drive; one 40 h.p. chassis, chain drive, and Grand Prize 120 h.p. racer. Special feature: demountable limousine.

Brewster & Co., New York City. Delaunay-Belleville gasolene cars. One 25-40 h.p. 6 cylinder chassis, one 10-15 h.p. 4 cylinder chassis, one 20-30 h.p. 4 cylinder landaulette. New 6 cylinder model. Ignition changed from make-and-break to Bosch, and chain drive changed to shaft. Cylinders on light models cast en bloc.

Brush Runabout Co., Detroit, Mich. Brush gasolene cars. Two 7 h.p. 1 cylinder runabouts, one 7 h.p. 1 cylinder delivery wagon and "New York to San Francisco" runabout. New multiple disc clutch, planetary change gear and carburetter. Exclusive feature: use of wood in frame and axles, spiral springs, change gear design.

Buckeye Mfg. Co., Anderson, Ind. Lambert gasolene cars. One 35 h.p. 4 cylinder touring car, one 35 h.p. 4 cylinder roadster, one 28 h.p. 4 cylinder baby tonneau, one 28 h.p. chassis, one 20 h.p. 2 cylinder runabout. Latter model entirely new. All friction driven. Silent chain and internal expanding brakes new feature. Exclusive feature: friction transmission.

C. V. G. Import Co., New York City. C. G. V. gasolene cars. One 20-30 h.p. 4 cylinder, chain drive limousine; one 12-15 h.p. 4 cylinder chassis, shaft-drive; one 12-15 h.p. 4 cylinder runabout, one 8-10 2 cylinder town car. The two lighter models new this year. Exclusive feature: radiator mounted in dash with fan enclosed.

Cartercar Co., Pontiac, Mich. Cartercar gasolene cars. One 24 h.p. 2 cylinder touring car, one 24 h.p. 2 cylinder coupe, inside driven; one 24 h.p. 2 cylinder chassis, one 18 h.p. 2 cylinder runabout, latter model new this year. All friction drive. Exclusive feature: dustproof chain case.

Chadwick Engineering Works, Pottstown, Pa. Chadwick Great Six gasolene cars. One 60 h.p. 6 cylinder touring car, one 60 h.p. 6 cylinder racing runabout, one 6 cylinder chassis. New features, internal expanding clutch and magneto self-starting device. Exclusive feature: copper water jackets.

Dayton Motor Car Co., Dayton, O. Stoddard-Dayton gasolene cars. One 40-45 h.p. 4 cylinder touring car, one 40-45 h.p. 4 cylinder limousine, one 30-35 h.p. 4 cylinder touring car, one 40-45 h.p. 4 cylinder toy tonneau, one 25 h.p. 4 cylinder runabout, one 40-45 h.p. 4 cylinder chassis. New models have water jackets or steel instead of copper; 4 cam gears instead of 5; gear shift outside of frame. Exclusive feature: only difference between models is in size. Design identical throughout line.

De Dion Bouton Selling Branch, New York City. De Dion Bouton gasolene cars. Two 8 h.p. 1 cylinder runabouts, one 8 h.p. 1 cylinder taxicab, one 12 h.p. 4 cylinder landaulet, one 18 h.p. 4 cylinder limousine, one 1 cylinder chassis. Exclusive feature: transversal cardan shaft on rear axle.

Delahaye Import Co., New York City. Delahaye gasolene cars. One 35 h.p. 4 cylinder touring car, one 35 h.p. 4 cylinder runabout, one 12-14 h.p. 2 cylinder town car (shaft drive), one 12-14 h.p. 2 cylinder chassis, one 16-18 h.p. 4 cylinder runabout, one 35 h.p. 4 cylinder chassis. All chain-drive except town car. Exclusive feature: Delahaye demountable rim.

De Luxe Motor Car Co., Detroit, Mich. DeLuxe gasolene cars. One 4 cylinder touring car, one 4 cylinder limousine, one 4 cylinder close coupled tourabout—all 50-60 h.p.; one 4 cylinder chassis. Exclusive feature: rear axle construction.

Fiat Automobile Co., New York City. Fiat gasolene cars. One 40 h.p. 4 cylinder landaulet, chain drive; one 25 h.p. 4 cylinder runabout, shaft drive; one 18 h.p. 4 cylinder town car, shaft drive; one 12 h.p. 4 cylinder landaulet, shaft drive; one 12 h.p. chassis, shaft drive; one 18 h.p. 4 cylinder chassis, shaft drive; one 40 h.p. 4 cylinder chassis, chain drive; one 45 h.p. 6 cylinder chassis, chain drive; one 45 h.p. 4 cylinder chassis, chain drive. Five of the seven models are shaft driven. Also five of the seven models are now fitted with Bosch high tension magneto.

Ford Motor Co., Detroit, Mich. Ford gasolene cars. One 4 cylinder touring car, one 4 cylinder coupe, one 4 cylinder town car, one 4 cylinder roadster, one 4 cylinder taxicab—all 20 h.p. Roadster model entirely new design. Exclusive features: cylinders cast en bloc, control on left side, new clutch, magneto in fly wheel, vanadium steel construction.

Gaeth Automobile Co., Cleveland, O. Gaeth gasolene cars. One 35-40 h.p. 4 cylinder touring car, one 35-40 h.p. 4 cylinder tourabout, one 35-40 h.p. chassis. Exclusive features: "V" shaped folding wind shield, patent ratchet automatic self-finding gear-shift; contracting band clutch, make-and-break ignition.

Holsman Automobile Co., Chicago, Ill. Holsman gasolene motor buggies. One 26 h.p. 4 cylinder surrey, one 26 h.p. coupe, one 12½ h.p. 2 cylinder delivery wagon, 1,000 lbs. capacity. All friction-chain drive, air-cooled, high wheels. Exclusive features: direct transmission from engine shaft to rear wheels by friction chain; motor construction.

Hol-Tan Co., New York City. Lancia gasolene cars. One 25 h.p. 6 cylinder chassis, one 18 h.p. 4 cylinder chassis, one 18 h.p. touring car and 18 h.p. 4 cylinder Lancia "Lampo," Savannah racer; two 18 h.p. 4 cylinder landaulets.

Hotchkiss Import Co., New York City. Hotchkiss gasolene cars. One 65 h.p. 6 cylinder toy tonneau, one 45 h.p. 4 cylinder toy tonneau, one 16-20 h.p. 4 cylinder limousine.

Isotta Import Co., New York City Isotta-Fraschini gasolene cars. One 20 h.p. 6 cylinder town car landaulet, one 14-20 h.p. 4 cylinder limousine, one 40-45h .p. 4 cylinder limousine, one 18-24 h.p. 4 cylinder brougham, one 50-65 h.p. 4 cylinder tourabout, one 50-65 h.p. 4 cylinder L. I. Sweepstakes racer, and one 50-65 h.p. Briarcliff racer. New feature: shaft drive on 40-45 h.p. model.

Jackson Motor Co., Jackson, Mich. Jackson gasolene cars. One 40-45 h.p. 4 cyl-

CENSUS OF THE SHOW.

Total Exhibitors		**277**
Cars ..... 77; **Accessories**		**200**

PLEASURE CARS.

Gasolene:		
One cylinder	11	
Two cylinder	30	
Two cylinder (2-cycle)	2	
Three cylinder (2-cycle)	2	
Four cylinder	136	
Six cylinder	21	
Total Gasolene Pleasure		**202**
Steam cars		**3**
Total Pleasure		**205**
Touring Cars	66	
Enclosed Cars	50	
Runabouts	36	
Roadsters	34	
High-wheeled Motor Buggies	14	
Racing type	5	
Chassis:		
One cylinder	1	
Two cylinder	8	
Four cylinder	29	
Four cylinder (2-cycle)	2	
Six cylinder	5	
Total Chassis		**45**
Air-cooled cars		**17**
Water-cooled cars		**185**

COMMERCIAL CARS.

Gasolene:		
One cylinder	1	
Two cylinder	14	
Two cylinder (2-cycle)	2	
Three cylinder (2-cycle)	3	
Four cylinder	7	
Total Gasolene		**27**
Electric		**8**
Total Commercial		**35**
Commercial Chassis	2	
Total Gasolene Vehicles		**229**
Total Steam Vehicles		**3**
Total Electric Vehicles		**8**
Total all Vehicles		**240**

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inder touring car, one 35 h.p. 4 cylinder touring car, one 35 h.p. 4 cylinder tourabout, one 20 h.p. 2 cylinder tourabout with detachable baby tonneau, one 40-45 h.p. 4 cylinder chassis, one 35 h.p. 4 cylinder chassis. The 35 h.p. model new this year and has cylinders cast in pairs; other models individual cylinders. On 40-45 h.p. model, foot accelerators and low tension Splitdorf ignition, new details.

Lorraine-Dietrich Import Co., New York City. De Dietrich and Mercedes gasolene cars. De Dietrich—One 40-50 h.p. 4 cylinder touring car, one 40-50 h.p. 4 cylinder roadster, one 40-50 h.p. 4 cylinder chassis, one 20-30 limousine. Mercedes—One 35 h.p. 4 cylinder folding limousine.

Lane Motor Vehicle Co., Poughkeepsie, N. Y. Lane steam cars. One 30 h.p. roadster, one 20 h.p. touring car, one 20 h.p. runabout.

Marion Motor Car Co., Indianapolis, Ind. Marion gasolene cars. One 32-35 4 cylinder toy tonneau, one 32-35 h.p. chassis. Selective instead of progressive type change gear; magneto and dry cells in place of accumulator. Exclusive feature: axle mounted change gear.

Maxwell-Briscoe Motor Co., Tarrytown, N. Y. Maxwell gasolene cars. One 30 h.p. 4 cylinder limousine, one 30 h.p. 4 cylinder touring car, one 30 h. p. 4 cylinder roadster, one 20 h.p. 2 cylinder touring car, one 14 h.p. 2 cylinder runabout, one 10 h.p. 2 cylinder runabout, one 30 h.p. 4 cylinder chassis, one 10 h.p. 2 cylinder chassis, one 20 h.p. 2 cylinder delivery wagon and one 3 cylinder 9-passenger drag "built by J. W. Wilkins in 1876." Magneto and full elliptic springs on all 1909 models except 10 h.p.; latter new model this year.

McIntyre Company, W. H., successors to Kiblinger Co., Auburn, Ind. McIntrye gasolene auto buggies. One 16 h.p. 2 cylinder opposed runabout, one 12 h.p. 2 cylinder runabout, one 16 h.p. 2 cylinder surrey, one 16 h.p. 2 cylinder delivery wagon, 1,000 lbs. capacity; one 28 h.p. 4 cylinder vertical. All models air-cooled and 12 and 16 h.p. have offset cylinders. Entire line new models this year.

Midland Motor Car Co., Moline, Ill. Midland gasolene cars. One 30-35 h.p. 4 cylinder touring car. Rear axle full floating instead of semi-floating, magneto equipment.

Mitchell Motor Car Co., Racine, Wis. Mitchell gasolene cars. One 40 h.p. 4 cylinder touring car, one 30 h.p. 4 cylinder runabout, one 20 h.p. runabout, one 20 h.p. 4 cylinder roadster. Thirty and 40 h.p. models now have magneto; 40 h.p. has full floating rear axle.

Moline Automobile Co., East Moline, Ill. Moline gasolene cars. One 35-40 h.p. 4 cylinder baby tonneau, one 24 h.p. 4 cylinder baby tonneau. Double ignition system on 30-35 model, new cork insert clutch, shaft or double chain drive on 24 h.p., former giving 14 inches clearance.

Moon Motor Car Co., St. Louis, Mo. Moon gasolene cars. One 30 h.p. 4 cylinder landaulet, one 30 h.p. baby tonneau, one 30 h.p. roadster. Exclusive feature: new magneto self-starting device.

Mora Motor Car Co., Newark, N. J. Mora gasolene cars. One 42-50 h.p. 6 cylinder touring car, one 42-50 h.p. 6 cylinder "Racytype," one 24-28 4 cylinder roadster, one 24-28 4 cylinder "Racytype," one 24-28 h.p. 4 cylinder limousine, one 24-28 h.p. chassis. Selective instead of progressive change gear, frame pressed steel instead of armored wood. The 24-28 h.p. model new.

National Motor Vehicle Co., Indianapolis, Ind. National gasolene cars. One 45 h.p. 6 cylinder touring car, one 40 h.p. 4 cylinder touring car, one 30 h.p. 4 cylinder touring car. The latter model new. New crank case oiler and increased tire sizes on old models. Exclusive features: double ignition, ball bearing crank shaft, floating rear axle.

Nordyke & Marmon, Indianapolis, Ind. Marmon gasolene cars. One 50 h.p. 4 cylinder touring car, one 32 h.p. 4 cylinder touring car, one 32 h.p. 4 cylinder roadster, one 32 h.p. coupe, one 32 h.p. chassis. All motors water cooled, special double internal expanding brake, pressed steel brake drums, Bosch ignition, one set plugs. Exclusive feature: rear axle, design, easily removable differential and transmission, axle mounted change gear group.

Oakland Motor Car Co., Pontiac, Mich. Oakland gasolene cars. One 40 h.p. 4 cylinder touring car, one 40 h.p. 4 cylinder roadster, one 40 h.p. 4 cylinder runabout, one 20 h.p. 2 cylinder touring car, one 20 h.p. 2 cylinder roadster, one 20 h.p. 2 cylinder landaulet. The 40 h.p. models new. New pressure feed lubrication, and clutch on 20 h.p. car. Exclusive feature: change gear control and engine balancing system.

Overland Automobile Co., Indianapolis, Ind. Overland gasolene cars. One 45 h.p. 6 cylinder baby tonneau, one 30 h.p. 4 cylinder runabout, one 30 h.p. 4 cylinder touring car, one 30 h.p. 4 cylinder inside drive coupe. High tension magneto used instead of accumulator; selective or planetary transmission optional on 4 cylinder cars; 6 cylinder model new this year. Exclusive feature: pedal control only on smaller model.

Panhard & Levassor, New York City. Panhard gasolene cars. One 65-80 h.p. 6 cylinder tourabout, one 35-45 h.p. 4 cylinder limousine, one 18-30 h.p. 4 cylinder limousine, one 18-30 h.p. 4 cylinder landaulet, one 15-20 h.p. 4 cylinder landaulet.

Pennsylvania Auto Motor Co., Bryn Mawr, Pa. Pennsylvania gasolene cars. One 6 cylinder 75 h.p. baby tonneau, one 4 cylinder 25 h.p. landaulet, two 4 cylinder touring cars, one 25, one 50 h.p.; one 50 h.p. chassis. Six cylinder model new.

Premier Motor Car Co., Indianapolis, Ind. Premier Gasolene cars. One 45 h.p. 6 cylinder touring car, one 30 h.p. 4 cylinder touring car, Premier "Century" roadster, one 30 h.p. 4 cylinder chassis. New demountable clutch, three-quarter elliptic springs, larger wheel bases.

Regal Motor Car Co., Detroit, Mich. Regal gasolene cars. One 30 h.p. 4 cylinder touring car, one 30 h.p. 4 cylinder runabout, one 30 h.p. 4 cylinder chassis. Horsepower increased from 25 to 30; transmission selective; new double ignition system.

Renault Freres Agency, New York City. Renault gasolene cars. One 35-45 h.p. 4 cylinder roadster, one 30 h.p. 4 cylinder special roadster, one 20-30 4 cylinder landaulet, one 10-14 h.p. 4 cylinder town car, one 8-10 h.p. 2 cylinder taxicab, one 8-10 h.p. 2 cylinder voiturette, one 35-45 h.p. 4 cylinder chassis. The 20-30 and 35-45 models are equipped with special self-starting device.

Reo Motor Car Co., Lansing, Mich. Reo gasolene cars. Two 22 h.p. 2 cylinder touring cars, two 12 h.p. 1 cylinder runabouts, one 2 h.p. 2 cylinder runabout, one 22 h.p. 2 cylinder chassis. Drop forged front axle new design; radiator arranged so as to fill without lifting hood.

Simplex Motor Car Co., Mishawaka, Wis. American Simplex (2-cycle) gasolene cars. Two 50 h.p. 4 cylinder touring cars, one 50 h.p. 4 cylinder chassis. Exclusive features, engine design, axle mounted change gear, extended use of ball bearings.

Welch Motor Car Co., Pontiac and Detroit, Mich. Welch gasolene cars. One 75 h.p. 6 cylinder baby tonneau, victoria top, one 75 h.p. 6 cylinder limousine, two 50 h.p. 4 cylinder touring cars. The 6 cylinder model is new. New transmission system.

York Motor Car Co., York, Pa. Pullman gasolene cars. One 40 h.p. 4 cylinder touring car, one 40 h.p. 4 cylinder roadster, one 30 h.p. 4 cylinder touring car, one 20 h.p. baby tonneau, one 20 h.p. 4 cylinder runabout. The 40 h.p. models have full floating roller bearing rear axle; new oiler enabling regulation of height of splash system; all except 20 h.p. have Bosch magneto.

Allen-Kingston Motor Car Co., New York City. Allen-Kingston gasolene cars. One 48 h.p. 4 cylinder chassis. Entirely new model this year.

Benner Motor Car Co., New York City. Benner gasolene cars. One 25-30 h.p. 6 cylinder runabout, one 25-30 h.p. 6 cylinder chassis.

Black Mfg. Co., Chicago, Ill. Black gasolene motor buggies. One 20 h.p. 2 cylinder surrey, one 20 h.p. 2 cylinder roadster, one 14 h.p. 2 cylinder buggy one 40 h.p. 4 cylinder roadster, one 14 h.p. 2 cylinder chassis. Small cars now have off-set cylinders instead of direct opposed; mechanical oiler in place of pressure-feed, magneto on large model. Exclusive feature, new 40 h.p. model highest powered motor buggy on the market.

Bristol Engineering Corporation, Bristol, Conn. Bristol gasolene cars. One 18-20 h.p. 4 cylinder landaulet, one 18-20 h.p. 4 cylinder chassis. First time shown. Exclusive feature: interchangeable design of power and transmission units.

Cameron Motor Co., Beverly, Mass., and New London, Conn. Cameron air-cooled gasolene cars. One 30-36 h.p. 6 cylinder baby tonneau, one 20-24 h.p. 4 cylinder chassis, two 20-24 h.p. 4 cylinder runabouts, one 20-24 h.p. 4 cylinder touring car. Steel frame now used instead of wood; tubular axles, Remy low-tension magneto; force feed oiler with geared pump. Exclusive feature: axle mounted change gear.

Cleveland Auto Cab Co., Geneva, O. Ewing gasolene cabs. One 20 h.p. 4 cylinder taxicab. First time shown.

Coates-Goshen Automobile Co., Goshen, N. Y. Coates-Goshen gasolene cars. One 32 h.p. 4 cylinder runabout, one 32 h.p. 4 cylinder landaulet. First time shown. Exclusive features: use of ball and socket joints on all connections; special torque group.

Crawford Automobile Co., Hagerstown, Md. Crawford gasolene cars. One 20-25 h.p. 4 cylinder touring car, one 40 h.p. 4 cylinder touring car. 20-25 h.p. model is new this year. Shaft drive.

Gyroscope Automobile Co., New York City. Gyroscope gasolene cars.. One 18 h.p. 2 cylinder roadster. New roller bearing crank shaft on 1909 model. Exclusive feature: vertical crankshaft on opposed motor, friction transmission, shaft drive.

Inter-State Automobile Co., Muncie, Ind. Inter-State gasolene cars. One 35 h.p. 4 cylinder touring car, one 35 h.p. 4 cylinder baby tonneau, one 35 h.p. 4 cylinder tonneau. First time shown. Exclusive feature: change gear and rear axle design.

Kissel Motor Car Co., Hartford, Wis. Kisselkar gasolene cars. One 60 h.p. 6 cylinder touring car, one 40 h.p. 4 cylinder touring car, one 30 h.p. 4 cylinder touring

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car, one 30 h.p. 4 cylinder chassis. Double ignition applied to all 1909 models.

The McCue Co., Hartford, Conn. McCue-Hartford gasolene cars. One 30 h.p. 4 cylinder roadster, one 30 h.p. 4 cylinder touring car. First time shown.

Middleby Automobile Co., Reading Pa. Middleby gasolene cars. One 25 h.p. 4 cylinder roadster, one 25 h.p. 4 cylinder runabout—both air-cooled. First time shown.

Omar Motor Co., Newark, N. J. Browniekar gasolene cars (jevenile). Three 3 h.p. 1 cylinder runabouts. First time shown.

Reliable Dayton Motor Car Co., Chicago, Ill. Reliable Dayton gasolene motor buggies. One 20 h.p. 2 cylinder surrey, one 15 h.p. 2 cylinder runabout, one 15 h.p. 2 cylinder chassis. The 20 h.p. model is new this year. Exclusive feature: sliding change gear design.

Schacht Mfg. Co., Cincinnati, O. Schacht gasolene motor buggies. One 20 h.p. 2 cylinder high wheel runabout, one 20 h.p. 2 cylinder low wheel chassis. The 1909 models have increased power. Exclusive feature: friction change gear design.

Sharp-Arrow Automobile Co., Trenton, N. J. Sharp-Arrow gasolene cars. One 40 h.p. 4 cylinder chassis. First time shown. Speedwell Motor Car Co., Dayton, O. Speedwell gasolene cars. One 40 h.p. 4 cylinder toy tonneau, one 40 h.p. 4 cylinder chassis. The 1909 models have full floating pressed steel roller bearing rear axles and Bosch magneto. Exclusive feature: method of assembling roller bearings in change gear.

Sultan Motor Co., New York City. Sultan gasolene taxicabs. One 12 h.p. 4 cylinder taxicab. First time shown.

Wayne Works, Richmond, Ind. Richmond gasolene cars. One 22½ h.p. 4 cylinder touring car, one 22½ h.p. 4 cylinder roadster, one 22½ h.p. 4 cylinder runabout. The 1909 models are larger and lighter than formerly.

Anderson Carriage Mfg. Co., Anderson, Ind. Anderson motor buggies. Two 12 h.p. 2 cylinder air-cooled motor buggies, one 12 h.p. 2 cylinder demonstration chassis.

Commercial Vehicles.

American Motor Truck Co., Lockport, N. Y. American gasolene motor truck. One 55 h.p. 4 cylinder 3 ton truck.

Commercial Truck Co. of America, Philadelphia, Pa. Commercial electric trucks. One 1,000-lb. truck, 40 cells, battery; one 2,000-lb. delivery wagon, both entirely new models. Exclusive features: spiral gear drive, enclosed and running in oil; special control from steering-post only, instead of by side levers.

Grabowsky Power Wagon Co., Detroit, Mich. Grabowsky gasolene trucks. One 30-35 h.p. 2 cylinder opposed, 12 passenger palace car, one 1 ton 30-35 h.p. 2 cylinder express wagon, one 30-35 h.p. 2 cylinder 2-ton truck, one 30-35 h.p. 2 cylinder chassis. First time shown. The 1909 models have double ignition magneto and storage battery. Exclusive features: removable power plant; thermo-siphon cooling system with condensing chamber; hardened steel bushings in 28 places where removals are frequently necessary.

Gramm-Logan Motor Car Co., Bowling Green, O. Gramm-Logan gasolene trucks. One 45 h.p. 4 cylinder 3-ton truck (water cooled), one 25 h.p. 4 cylinder 1,500-lb. delivery wagon (air cooled). First time shown. The 1909 models have new disc clutch of original design; ball and socket joints at each end of strut rods. Exclusive feature: sand box in center of chassis, controlled from seat.

Hart-Kraft Motor Co., York, Pa. Hart-Kraft commercial power wagons. Two 14 h.p. 2 cylinder opposed delivery wagons. First time shown. Exclusive feature: method of detaching complete power unit.

Lansden Co., The, Newark, N. J. Lansden electric commercial vehicles. One 1-ton express wagon, one 2-ton express wagon, one 1,500-lb. delivery wagon, one 2-ton industrial platform truck. Exclusive feature: design of latter.

Mack Bros. Motor Car Co., Allentown, Pa. Manhattan gasolene trucks. One 50 h.p. 4 cylinder, 5-ton truck; one 50 h.p. 4 cylinder 16-passenger bus.

Otto, Albert T., New York City. Saurer gasolene commercial trucks. One 30-40 h.p. 4 cylinder, 5 ton truck. First time shown in New York. Exclusive features: automatic motor brake, pneumatic starting device and double jet carburetter..

Pittsburg Motor Vehicle Co., Pittsburg, Pa. Pittsburg electric commercial vehicles. One 1-ton delivery wagon, 22 cells; one 1-ton delivery wagon, 42 cells.

Rapid Motor Vehicle Co., Pontiac, Mich. Rapid gasolene trucks. One 24 h.p. Glidden tour truck, one 30 h.p. 20-passenger tourist, one 30 h.p. 12-passenger "Pullman," one 24 h.p. 1-ton delivery wagon, one 24 h.p. ambulance, one 30 h.p. stake wagon, one 30 h.p. fire patrol, one 60 h.p. 5-ton truck, one 30 h.p. chassis—all 2 cylinder except 60 h.p. model, which is 4 cylinder. Several models new this year.

Reliance Motor Truck Co., Owosso, Mich. Reliance gasolene trucks. One 45 h.p. 3 cylinder, 2-cycle, 3-4 ton truck; one 30 h.p. 2 cylinder, 2-cycle, 2-ton truck; one 45 h.p. 3 cylinder, 2-cycle, 3-4 ton chassis. Exclusive feature: flexibility of power plant construction and interchangeability.

Summary of Accessories Exhibits

Ajax-Grieb Rubber Co., New York City—Ajax tires.

American Ball Bearing Co., Cleveland, O.—Ball bearings and axle equipments.

American Electrical Novelty Mfg. Co.,—Ever Ready Batteries, lamps and tire specialties.

Atwater-Kent Mfg. Works, Philadelphia, Pa.—Igniters and timers.

Atwood-Castle Co., Amesbury, Mass—Lamps.

Autocoil Co., Jersey City, N. J.—Coils.

Auto Improvement Co., New York City—Self starting devices and motor specialties.

Badger Brass Mfg. Co., New York City and Kenosha, Wis.—Solar lamps and acetylene generators.

Baldwin Chain and Mfg. Co., Worcester, Mass.—Baldwin chains, sprockets and steeringgear.

Bowser & Co., S. F., Ft. Wayne, Ind.—Tanks, measuring pumps and gasolene storage systems.

Briscoe Mfg. Co., Detroit, Mich.—Radiators and fittings.

Brown-Lipe Gear Co., Syracuse, N. Y.—Transmissions, differential and steering gears.

Byrne, Kingston & Co., Kokomo, Ind.—Kingston carburetters, mufflers and pumps.

Coes Wrench Co., Worcester, Mass.—Adjustable wrenches.

Columbia Nut and Bolt Co., Bridgeport, Conn.—Lock nuts.

Connecticut Telephone and Electric Co., Meriden, Conn.—Spark coils, switches and ignition specialties.

Consolidated Rubber Tire Co., New York City—Kelly-Springfield tires.

Continental Caoutchouc Co., New York City—Continental tires and demountable rims.

Cowles & Co., C., New Haven, Conn.—Specialties.

Cramp & Sons Ship & Engine Co., Wm., Philadelphia, Pa.—Bronze castings and automobile parts.

Diamond Chain and Mfg. Co., Indianapolis, Ind.—Chains and sprockets.

Diamond Rubber Co., Akron, O.—Diamond tires.

Dixon Crucible Co., Joseph, Jersey City, N. J.—Graphite and lubricants.

Dow Tire Co., New York City—Dow non-deflation tubes.

Edmunds & Jones Mfg. Co., Detroit, Mich.—Lamps.

Electric Storage Battery Co., Philadelphia, Pa.—Accumulators.

Empire Automobile Tire Co., Trenton, N. J.—Empire tires.

Firestone Tire & Rubber Co., Akron, O.—Firestone pneumatic and solid tires.

Fisk Rubber Co., Chicopee Falls, Mass.—Fisk tires and demountable rims.

G & J Tire Co., Indianapolis, Ind—G & J tires.

Gabriel Horn Mfg. Co., Cleveland, O.—Gabriel exhaust horns and shock absorbers.

Gemmer Mfg. Co., Detroit, Mich.—Steering gears and parts.

Gilbert Mfg. Co., New Haven, Conn.—Tires, jackets, lamps, covers, and rubber cloth specialties.

Goodrich Co., B. F., Akron, O.—Goodrich clinches tires.

Goodyear Tire & Rubber Co., Akron, O.—Goodyear tires and compressed air inflaters.

Gray & Davis, Amesbury, Mass.—Lamps.

Gray-Hawley Mfg. Co., Detroit, Mich.—Chime whistles and muffler cut-outs.

Ham Mfg. Co., C. T., Rochester, N. Y.—Lamps.

Harris Oil Co., A. W., Providence, R. I.—Lubricants.

Hartford Rubber Works Co., Hartford, Conn.—Hartford tires.

Hartford Suspension Co., Jersey City, N. J.—Truffault-Hartford shock absorbers.

Heinze Electric Co., Lowell, Mass.—Coils and ignition equipment.

Herz — Co., New York City—Timers, plugs and ignition specialties.

Hess-Bright Mfg. Co., Philadelphia, Pa.—Annular ball bearings and magnetos.

Hoffecker Co., The, Boston, Mass.—Speed indicators.

Hyatt Roller Bearing Co., Harrison, N. J.—Roller bearings.

Jones Speedometer, New York City—Speedometers, annunciators, odometers and specialties.

Kokomo Electric Co., Kokomo, Ind.—Kingston spark plugs, coils and timers.

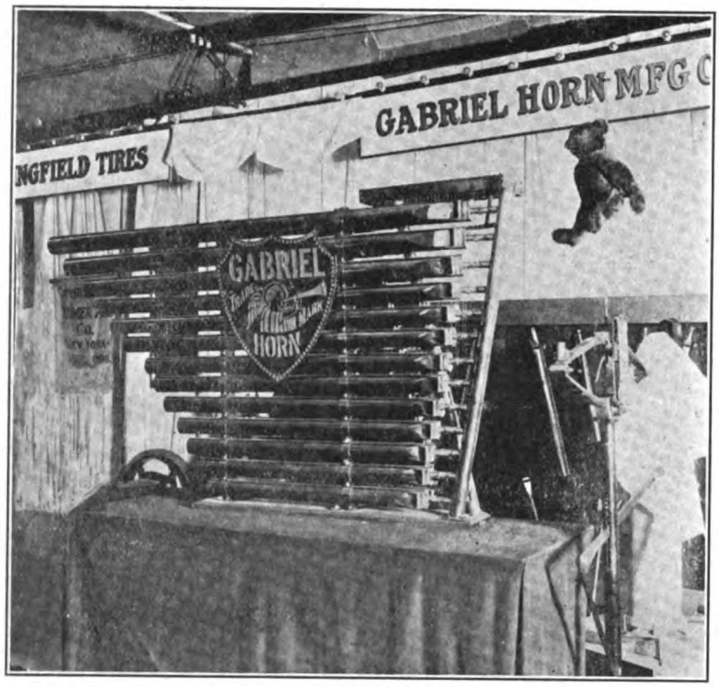
Leather Tire Goods Co., Newton Upper Falls, Mass.—Woodworth non-skid covers and chain grips.

Light Mfg. & Foundry Co., Pottstown, Pa.—Aluminum parts and castings.

McCord Mfg. Co., Chicago, Ill.—Radiators.

Mezger, C. A., New York City—"Soot-proof" spark plugs and automatic wind shields.

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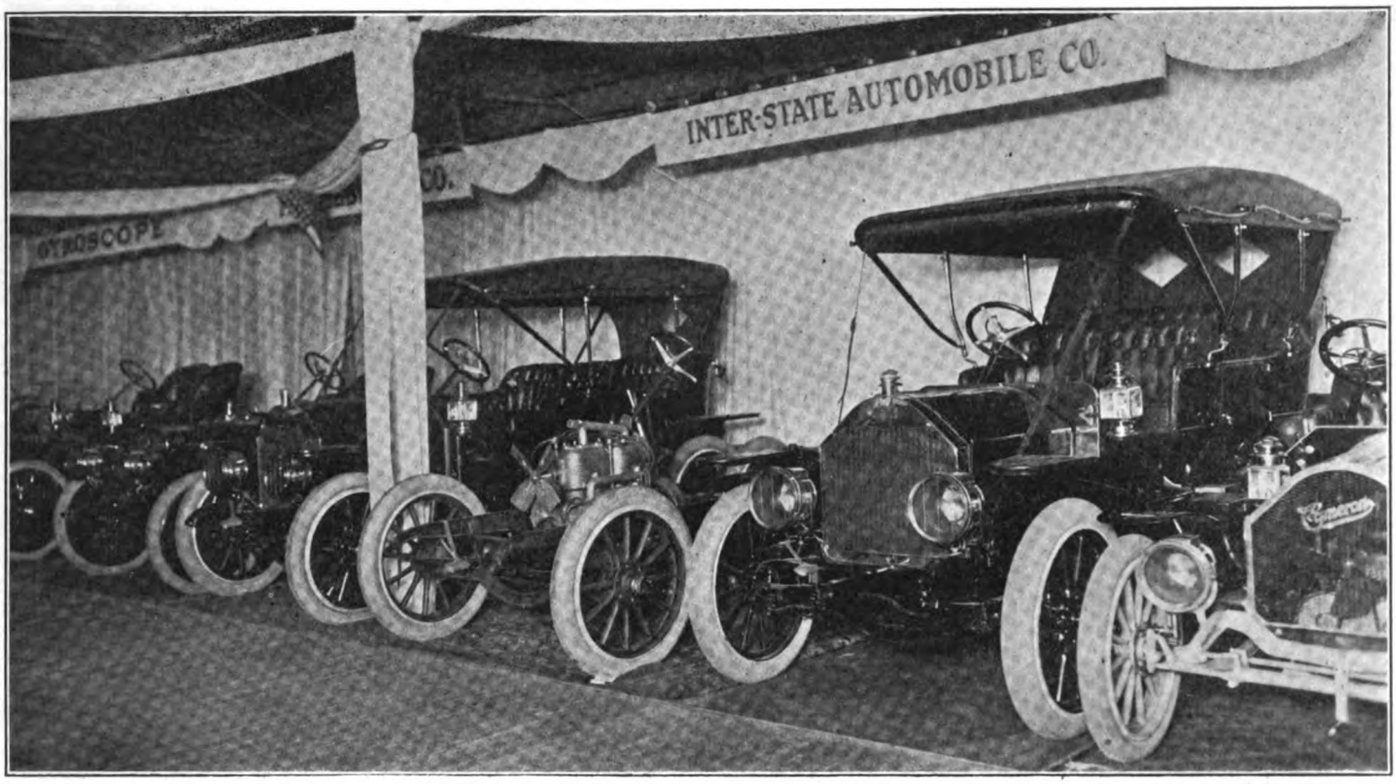
GABRIEL HORN EXHIBIT



HARTFORD SUSPENSION EXHIBIT

Michelin Tire Co., Milltown, N. J.—Michelin tires.
Miller, Charles E., New York City—Brampton chains, supplies and accessories.
Morgan & Wright, Detroit, Mich.—Morgan &Wright tires.
Mosler & Co., A. R., New York City—Spark plugs, timers, "Isti" rear end signals.
Motsinger Device Mfg. Co., Pendleton, Ind.—Auto sparkers, switchboards and mufflers.
Motz Clincher Tire and Rubber Co., Akron, O.—Clincher and solid tires.
National Battery Co., Buffalo, N. Y.—Accumulators.
National Carbon Co., Cleveland, O.—Dry batteries.
National Coil Co., Lansing, Mich.—Spark coils, plugs and magnetos.
Newmastic Tire Co., New York City—Tire filling compound.
N. Y. & N. J. Lubricant Co., New York City—Lubricants.
Oliver Mfg. Co., Chicago, Ill.—Peerless jacks.
Pantasote Co., New York City—Top and upholstering materials.
Pennsylvania Rubber Co., Jeannette, Pa.—Pennsylvania tires
Pittsfield Spark Coil Co., Dalton, Mass.—Ignition systems.
Randall-Faichney Co., Boston, Mass.—Oil and grease guns, the Webster gasolene gauge.
Rand Mfg. Co., Detroit, Mich.—Tops and wind shields.
Remy Electric Co., Anderson, Ind.—Magnetos.
Republic Rubber Co., Youngstown, O.—Tires.
Sager Co., J. H., Rochester, N. Y.—Supplementary springs, bumpers, demountable rims, tire grips.
Shaler Co., C. A., Waupum, Wis.—Electric vulcanizers.
Shelby Steel Tube Co., Pittsburg, Pa.—Cold drawn steel tubing.
Smith Co., A. O., Milwaukee, Wis.—Pressed steel frames and stampings.
Spicer Universal Joint Mfg. Co., Plainfield, N. J.—Universal joints.
Splitdorf, C. F., New York City—Timers, distributors, coils and ignition specialties.
Sprague Umbrella Co., Norwalk, O.—Tops and wind shields.
Standard Roller Bearing Co., Philadelphia, Pa.—Roller bearings.
Standard Welding Co., Cleveland, O.—Tubing and electrically welded parts.
Stewart & Clark Mfg. Co., Chicago, Ill.—Speed indicators.
Swinehart Clincher Tire & Rubber Co., Akron, O.—Swinehart tires.
Timken Roller Bearing Axle Co., Canton, O.—Roller bearings and axles.
Veeder Mfg. Co., Hartford, Conn.—Tachometers and tachodometers.
Warner Gear Co., Muncie, Ind.—Gears and parts.
Warner Instrument Co., Beloit, Wis.—Speed indicators and odometers.
Weed Chain Tire Grip Co., New York City—Non-skid tire chains.
Westchester Appliance Co., Yonkers, N. Y.—Batteries and spark plugs.
Wheeler, F. H., Indianapolis, Ind.—Shebler carburetters and W. & S. magnetos.
Whitney Mfg. Co., Hartford, Conn.—Whitney chains and keying systems.
Witherbee Igniter Co., New York City—Witherbee storage batteries, Wico ignition specialties and Volta magnetos.
Alexander & Co., H. T., New York City—Panhard oil.
Allen Auto Specialty Co., New York City—Tire jackets and specialties.
Allen Fire Dept. Supply Co., New York City—Two-port carburetters.
American Metal Hose Co., New York City—Metal specialties.
American Thermos Bottle Co., New York City—Thermos bottles.
American Thermo Ware Co., New York City—Goggles, hydrometers.
Anderson Forge Machine Co., Detroit, Mich.—Crankshafts, gears.
Automobile Supply Mfg. Co., Brooklyn, N. Y.—Horns, tubing and brass specialties.
Auto Body & Taxicab Co., New York City—Taxicab bodies.
Auto Tire Inflating Co., Brooklyn, N. Y.—Tire pumps.
Austro-American Separator Co., Cleveland, O.—Gasolene funnels.
Bosch Magneto Co., Robt., New York City—Ignition systems.
Bretz Co., J. S., New York City—Ball bearings and high tension magnetos.
Briggs, Wm. M., Brooklyn, N. Y.—Rock Island vises, 20th Century jacks, and telescoping motor truck jacks.
Balzer, Gus, New York City—Limousine bouquet holders, monograms, lamps, generators.
Batavia Rubber Co., Batavia, N. Y.—Tires.
Brown Co., The, Syracuse, N. Y.—Gauges and pressure indicators.
Brown Mfg. Co., John W., Columbus, O.—Lamps.
Brownell Motor Co., F. A., Rochester, N. Y.—Gasolene motors.
Buda Foundry & Mfg. Co., Chicago, Ill.—Jacks.
Buffington & Co., C. A., Berkshire, N. Y.—Folding seats.
Bunnell & Co., J. H., New York City—Batteries.
Burnett Compound Spring, Incorporated, Newark, N. J.—Suspension springs.
Burrowes Co., E. T., Portland, Me.—Wind shields and emergency wheels.
Brandenburg & Co., New York City—Motors, bodies, gears, oilers and specialties.
Caloris Mfg. Co., Philadelphia, Pa.—Caloris bottles.
Circle Rotary Automobile Light Co., New York City—Lamps.
Courtney Rubber Co., New York City—Tires and tubes.
Dayton Rubber Mfg. Co., Dayton, O.—Airless tires.
Downing, Charles J., New York City—Supplies, specialties.
Driggs-Seabury Ordnance Corporation, Sharon, Pa.—Crank shafts and frames.
Duffy Grease Co., New York City—Lubricants.
Eastern Carbon Works, Jersey City, N. J.—Dry cells.
Edison Auto Accessory Co., New York City—Edison spark plugs.
Elite Mfg. Co., Ashland, O.—Jacks and pumps.
Ennis Rubber Mfg. Co., Newark, N. J.—Tires.
Empire Auto Top Co., New York City—Tops.

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Excelsior Storage Battery Co., New York City—Accumulators.
F. R. V. Auto Parts Co., New York City—Shock absorbers.
Faultless Tube Co., New York City—Inner tubes.
Federal Mfg. Co., Lowell, Mass.—"Rex" batteries.
Flentje, Ernest, Cambridge, Mass.—Shock preventers.
Fulton & Zinke, Chicago, Ill.—Breeze carburetters, Victor lamps and generators, Duplex coils.
Geiszler Bros., New York City—Storage batteries.
Garage Equipment Co., Milwaukee, Wis.—Specialties, timers, cut-out valves.
General Storage Battery Co., New York City—Batteries.
Globe Metal Polish Co., New York City—Metal polish.
Gloversville Auto Glove Co., Gloversville, N. Y.—Gloves.
H. & C. Bottle Mfg. Co., New York City—Janus bottles.
Havoline Oil Co., New York City—Lubricants.
Healy Leather Tire Co., New York City—Healy leather tires and demountable rims.
Hill Mfg. Co., Buffalo, N. Y.—Tops, seats and wind shields.
High Wheel Auto Parts Co., Muncie, Ind.—Parts for motor buggies.
Hydraulic Oil Storage & Dustributing Co., Detroit, Mich—Tanks. "Snells" storage systems.
Ideal Windshield Co., New York City—Windshields.
Jeffrey-Dewitt Co., Newark, N. J.—Spark plugs.
Johnson & Co., Isaac G., Supyten Duyvil, N. Y.—Steel and nickel copper alloy forgings and castings.
Keystone Lubricating Co., Philadelphia, Pa.—Lubricants.
Lavelette Co., New York City—Magnetos.
Lutz-Lockwood Mfg. Co., New York City—S. X. dry cells.
Long Island Auto Supply Mfg. Co., Brooklyn, N. Y.—Supplies, Hicks speedometers.
Marko Storage Battery Co., Brooklyn, N. Y.—Accumulators.
Merchant & Evans Co., Philadelphia, Pa.—Multiple disc clutches and automobile fittings.
Metal Stamping Co., New York City—Radiators.
Miller & Sons, Wm. P., Long Island City, N. Y.—Lubricants.
Monitor Mfg. Co., Boston, Mass.—Timers and distributors.
Motor Accessories Co., New York City—Specialties.
Nathan Novelty Mfg. Co., New York City—Tire covers and cases.
National Auto Top Co., New York City—Tops.
New Departure Mfg. Co., Bristol, Conn.—Ball bearings.
New York Coil Co., New York City—Spark coils.
New York Leather Belting Co., New York City—"Grip-On" brake-band lining.
New York Portable Bungalow Co.—Portable garages.
Nightingale Whistle Mfg. Co., New York City—Nightingale whistles and circulatory pumps.
Noonan Tool & Machine Works, A. S., Rome, N. Y.—Tools.
Philadelphia Timer & Machine Co., Philadelphia, Pa.—Timers.
Perfection Wrench Co., Port Chester, N. Y.—Wrenches and tools.
Pneu l'Electric Co., New York City—Tires.
Polson, W. F., Buffalo, N. Y.—Wind shields.
Quincy-Manchester-Sargent Co., Plainfield, N. J.—Auto wrenches and steel castings.
R. I. V. Co., Inc., New York City.—Annular ball bearings.
Reeves & Son, Paul, Philadelphia, Pa.—Bearings, castings.
Royal Equipment Co., Bridgeport, Conn.—Brake lining materials and brakes.
Rubly Mfg. Co., Tuckahoe, N. Y.—Tuckahoe grease guns.
Rushmore Dymano Works, Plainfield, N. J.—Acetylene lamps and generators.
S. B. R. Specialty Co., New York City—Muffler cut-outs.
Safety Device Co., Indianapolis, Ind.—Electric sundries.
Salman & Co., John A., Boston, Mass—Brass monograms.
Samson Leather Tire Co., New York City—Non-skid tires.
Seamless Rubber Co., New Haven, Conn.—Rubber goods.
Shore Instrument & Mfg. Co., New York City—Scleroscopes.
Sier-Bath Co., New York City—Gears, sprockets and machinery.
Silverite Metal Co., New York City—Aluminum alloy castings.
Sireno Co., New York City—Electric horns.
Smith Mfg. Co., I. J., New York City—Irving vehicle washers.
Snell, Irving, Little Falls, N. Y.—Double cushion tires.
Spare Motor Wheel of America, Ltd., Chicago, Ill.—Stepney spare wheels.
Standard Leather Washer Mfg. Co., Newark, N. J.—Leather washers, blow-out patches and leather specialties.
Stanley & Patterson, New York City—Battery holders.
Stromberg Motor Devices Co., Chicago, Ill.—Carburetters.
Troy Carriage Sun Shade Co., Troy, O.—Wind shields.
Traver Blow-out Patch Co., New York City—Tire repair outfit.
U. S. McAdamite Metal Co., Brooklyn, N. Y.—Aluminum alloy castings.
Union Battery Co., Belleville, N. J.—Batteries.
Universal Auto & Motor Boat Supply Co., New York City—Specialties.
Vanguard Mfg. Co., Joliet, Ill.—Wind shields.
Wetherill Finished Casting Co., Philadelphia, Pa.—Castings.
Wilkinson Co., John S., Newburgh, N. Y.—Fur goods.
Wilson Trading Co., New York City—Accessories.
Zeglen Bullet-proof Cloth Co., Chicago, Ill.—Non-puncturable tires and fabrics.

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WILKES-BARRE CAPTURES HONORS

Quaker City Endurance Run a Strenuous Test of Men and Machines—Sensational Accidents but no Disaster.

To one of the class of men in which heroes are as plentiful as swallows around a disused chimney fell the honor of winning what was, perhaps, the most exacting endurance run ever held in America—namely, the two days' endurance contest from Philadelphia to Wilkes-Barre and return on Friday and Saturday last, January 1st and 2nd, promoted by the Quaker City Motor Club. By vocation William Miller is a Wilkes-Barre fireman and perhaps his long experience in climbing up and down treacherous, ice-coated ladders had something to do with his proficiency in guiding his car car over a two days' run of slippery mountain roads without a single mishap. Not only did Wilkes-Barre people have just cause for jubilation because Miller and two other local drivers—Ross Anderson and John Dietrich—survived the test with honor to themselves but because the respective cars they drove were manufactured in Wilkes-Barre. In the final placing of the survivors Miller, Anderson and Dietrich, driving Matheson cars, respectively were first, third and fourth.

Every driver that finished the run was more or less of a hero and C. S. Carris, who brought a Franklin through the run with but 22 points penalization, is in the same class with Miller. Everyone who went through the run agrees that it is a tribute to the solidity of American construction that any of the cars were able to get through without greater penalization than was accorded to them.

The case of Ray McNamara, who drove a Premier car through both days with no observers' penalties and was disqualified because it was stated that the car did not carry its full quota of passengers up Giant's Despair was one to excite sympathy. It was announced that the Premier car was the only one to emerge from the Technical Committee's hands without penalization, but that it had been disqualified for the reason stated. It was reported that some of the passengers had been afraid to remain in the car during the tortuous ascent of the Wilkes-Barre mountain, and this resulted in its disqualification. Considerable feeling has developed in Philadelphia over the matter.

The nature of the findings of the technical committee was not divulged, but it was learned that most of the penalizations were for loose nuts and other trivial things of the sort to be expected after a contest of so strenuous a nature. Miller of the Matheson had a perfect road score but was assessed 11 points for trivialities, and the technical committee put 5 points on the score of the Franklin which, with the 17 points incurred previously, set down its score 22 points from the perfect goal. The other two Mathesons, driven by Anderson and Dietrich, had perfect road scores but were penalized 23 and 37 points, respectively, by the committee.

Of the seven runabouts that started only two finished and neither finished with a perfect score. George Brooks, Peerless, won the cup by having the lowest penalization, 270 points, as against the 528 points charged to W. L. Longstreth. On the whole it was a memorable contest with which to usher in the new year.



TYPICAL CROWD GREETS W. C. LONGSTRETH, MAXWELL, AT WILKES-BARRE

First Day—Friday.

It is not likely that any of the 31 drivers who started from Philadelphia Friday morning will soon forget that exacting first day's run over the ice-clad roads from the Quaker City to Wilkes-Barre. Without doubt the test put upon the contesting machines was one of the most severe ever put upon cars in a similar contest promoted by the Quaker City Motor Club. The route lay over ground glazed with ice and abounding in hills full of treacherous twists and turns. Accidents were frequent, but with no serious results, although several cars were temporarily put out of commission. A curious fact about the mishaps was that the most serious ones took place between Philadelphia and Stroudsburg, where the going was easiest. From Stroudsburg to Wilkes-Barre was by far the hardest part

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of the journey and the roads were covered with ice, overlaid by a treacherous blanket of snow. That serious accidents did not occur on some of these mountain twists was by kind dispensation of providence and the magnificent manner in which the cars were handled.



WILLIAM MILLER DRIVING THE WINNING MATHESON ON GIANT'S DESPAIR

Thirty-one cars got away from the Hotel Walton, Bert Maucher, in the ill-fated Peerless, setting the pace, with two minutes headway between each of the following cars. Class A, which was for touring cars, and for the permanent possession of the MacDonald and Campbell cup, drew 24 starters. In Class B, for runabouts and roadsters, there were seven starters. The prize in this latter class is a loving cup donated by the club.

As stated, the first day's run was from Philadelphia to Wilkes-Barre, a distance of 154 miles. Controls were established at Sellersville, Allentown and Stroudsburg, the time limit for the entire distance being 7 hours 40 minutes 52 seconds. When the cars finished at the Diamond City it was announced that only 12 touring cars and two roadsters had arrived with perfect time scores, the technical committee not having rendered a report. The cars thus honored for the first day's run were as follows:

Class A—William Crawford, 30 horsepower Cadillac; Ed. Burnshaw, 30 Cadillac; John Dietrich, 45 Matheson; William Miller, 45 Matheson; W. Bickle, 40 Stoddard-Dayton; E. C. Folberth, 40 Oldsmobile; H. B. Tuttle, 30 Stoddard-Dayton; Ross Anderson, 50 Matheson; C. Carris, 28 Franklin; Ray McNamara, 30 Premier; O. W. Hoffman, 40 Stearns, and F. W. Darnstadt, 34 Rambler.

Class B—W. C. Longstretch, 24 Maxwell, and George Brooks, 30 Peerless.

The run to Sellersville, the first control, was uneventful. The day broke clear and cold and the roads from Philadelphia to the first checking station were in perfect condition. Toll gates were passed without stopping as the Quaker City Motor Club previously had paid the tolls of all the competing cars, an example which might well be copied by other organizations promoting endurance runs through toll road abounding communities.

One of the first accidents happened to Dan Webster in the Oldmobile roadster. About five miles from Allentown the car caught in the car tracks and skidded around like a whirling dervish. The occupants were scattered in all directions and Webster found himself sitting alongside a telegraph pole holding a piece of the steering wheel in both hands.

Bert Maucher, who was one of the remaining unfortunates, told of a thrilling escape. His car was making a sharp curve near Easton when it skidded on the icy roads and dropped into a ditch, overturning and throwing out all the occupants except Lobell, the mechanic. He was pinned under the steering wheel but was saved from probably serious injury by James Davidson, who was one of the occupants. Although Davidson had been severely bruised about the legs he had presence of mind to lift the front of the car from Lobel and the latter was able to extricate himself. Maucher was injured about the shoulders and S. R. Stankowitz also was bruised.

Another narrow escape was that of H. C. Vetterlein, driver of the Stoddard-Dayton roadster; Jack Harkins, the mechanic, and an observer. The car skidded off the road into a fence, but all the occupants jumped to safety. Frank Hardhart, Jr., ran his Elmore into a porch at Bethlehem. The support was knocked from it and the porch roof fell, but Hardhart and his companions got out of the car in time. George Mauser, in a Franklin, turned turtle near Easton, but he managed to get the car on the road again and finish.

After smashing a wheel near Easton in an effort to avoid hitting a pedestrian, A. J Depew, Winton, unfortunately broke his crank shaft, but despite this set back, somehow managed to work his way to the finish. Thomas Wilkie skidded into a team near Bethelehem and put his Buick car out of the running, and Frank Yerger, Studebaker, was reduced to a state of desperation because of tire trouble. He finished in Wilkes-Barre, however.

The tortuous descent down Giant's Despair, just outside Wilkes-Barre, a mountain road that has become famous because of the climb held upon it every Decoration Day, was attended with several incidents. John Dietrich and William Miller, both in Mathesons, drove the first cars to arrive and then followed William Crawford in a Cadillac. All the cars see-sawed down Giant's Despair, but a thrilling moment was



C. CARRIS, FRANKLIN, GETS THE GLAD HAND AT PHILADELPHIA

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that when Fred Darnstadt, Rambler, reached the most tortuous turn in the road. The car commenced to slide sidewise and turned almost completely around before it practically came to a standstill in the middle of the road. Berger, in an Oldsmobile, was following closely, and he saw that his only chance to avoid a collision lay in driving his car straight into a ditch. Before trying to extricate their car Berger and his crew ran back to warn the approaching cars and thus avoided what doubtless would have resulted in a conglomerated mass of twisted steel and broken bones, had the following cars come down. The Oldsmobile was lifted out of the ditch and further danger at this point was avoided.

Second Day—Saturday.

According to a prominent member of the Quaker City Motor Club—name withheld because his reputation for veracity until now has been unquestioned—Archimedes once ventured the opinion that if he were allowed to take his now historical crowbar and pry Wilkes-Barre mountain, otherwise known as Giant's Despair, off the map into space, the world would revolve upon its axis once every ten hours, where now 24 hours are required for the cycle. The reason is that Giant's Despair presents such wind resistance that the progress of the world is accordingly retarded in its navigations through space. And all the enduranc-ers who survived the second day's run of the Quaker City Motor Club, are inclined to agree with the member who ventured this opinion.

To climb Giant's Despair under ordinary conditions one has to take a running start some fifteen miles back in the Pennsylvania landscape and then rush around its tortuous curves with the throttle wide open. Sometimes you get up and sometimes you don't—more frequently you don't. Even when the roads are hard and firm it is more or less like trying to walk up the backstretch of a loop the loop. But when the roads are covered with ice and snow—when a skid on one of the doubled-up-elbow turns is certain catastrophe, the task of the motorist is rendered many times more difficult. That was the first task of the Philadelphia motorists on the return trip to Philadelphia—to climb 6,000 feet of ice-covered mountain twists and turns, portions of which attain a gradient of 30 per cent. It is little wonder that some clean scores were dropped at the very start off.

The day's stories of accidents had their inception mostly on Giant's Despair. The trouble started when the first car got half way up, skidded, turned half way around and then blocked the road. The other cars following were enforced to halt and in a short time six or seven were stalled on the narrow road. After a deal of manouvering most of the cars got around the obstruction but F. G. Folberth in an Oldsmobile refused to proceed until the cause of the obstruction was removed. On this ground he made a claim of 44 minutes to the technical committee, because he was held up this length of time. Other complaints were to the effect that the official confetti car, on account of its heavy load had been obliged to circumvent the mountain, a distance of about 15 miles, and several of the cars were held up because the drivers were at loss to ascertain what roads to take when divers routes were presented for their choice.

On the whole the roads were about on a par with those that confronted the endurancers on the first day's run from Philadelphia. The worst part of the itinerary was after leaving Bear Creek to White Haven and to Freeland. Some of the grades were exceptionally steep while the road was narrow correspondingly. The hairbreadth escapes and minor accidents that happened on roads such as these never will be reported, as each mile from Wilkes-Barre to Reading was fraught with continual danger.

The day's controls were located at Hazleton, 36.9 miles from Wilkes-Barre; Hamburg, 71.9 miles; Reading, 88.1 miles; Pottstown, 104.8 miles; Norristown, 104.8 miles, and the finish in Philadelphia. Because of the numerous controls and the icy roads over which a schedule of 20 miles an hour had to be maintained many cars lost points. It was not the fault of the cars.

The accident to the Peerless car was a peculiar one. On one side of the road between Bethlehem and Hecktown was a deep ditch, coated with thin ice. As Maucher came around the curve the car skidded and scraped the edge of the ditch. Had the ground been solid nothing would have come of it, but one wheel went through and broke, the machine turning over completely. Fortunately none of the occupants was injured and they lifted the car back to its original position. The engine was still running and another Peerless not in the run came along just as Maucher ruefully gazed at the damaged wheel. The driver of the non-contesting car kindly offered one of his wheels, but unfortunately it was of a different model and after several attempts Maucher reluctantly allowed himself to be towed back to town.

It was a sorry looking lot of motorists that arrived in Philadelphia from 2 o'clock in the afternoon until after prayer meeting time. All the cars showed effects of the hard run and the occupants looked sleepless, careworn and cold-pinched. Drivers, mechanics and observers were numbed by the cold and exposure of the nipping frost and biting winds on the mountain roads. At a late hour 21 cars had finished and the technical committee took their magnifying glasses, pencils and paper and began their deadly work.

Car and Driver.	Controls										Checkers' Penalty.		Observers' Penalty.		Tech-nical Pen-alty.	Total Pen-alty.
	1	2	3	4	5	6	7	8	9	10	1st Day.	2d Day.	1st Day.	2d Day.		
William Miller, Matheson	0	0	0	0	0	0	0	0	0	0	0	0	1	0	10	11
C. Carris, Franklin	0	0	0	0	24	16	12	12	12	10	0	14	0	3	5	22
Ross Anderson, Matheson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	23
John Dietrich, Matheson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	37
Ed Burnshaw, Cadillac	0	0	0	0	16	19	0	0	0	0	0	43	0	1	37	81
William Crawford, Cadillac	0	0	0	0	19	43	30	11	12	1	0	116	0	0	23	139
Robert Shirk, Stoddard-Dayton	0	0	0	0	20	16	1	0	0	0	0	37	77	0	26	140
F. C. Folberth, Oldsmobile	0	0	0	0	44	44	44	44	44	44	0	220	4	0	9	233
Laurent, Stearns	0	0	0	0	43	43	43	43	47	43	0	219	1	0	29	249
T. W. Berger, Oldsmobile	0	4	0	0	111	111	52	51	51	51	4	376	0	0	10	386
Al McCormick, Acme	0	0	0	11	127	132	117	112	100	91	11	604	0	2	31	637
F. H. Yerger, Studebaker	0	0	60	81	128	128	128	128	128	128	141	648	2	0	4	654
William Frietag, Mitchell	0	0	0	1	132	132	131	131	130	127	1	671	0	2	15	688
A. H. Bitner, Maxwell	0	0	0	18	161	163	150	138	140	143	18	895	0	34	265	1194
W. M. Cram, Mitchell	0	0	0	4	71	252	253	241	227	238	4	1282	No cards		42	
H. B. Tuttle, Stoddard-Dayton	0	0	0	0	107	123	125	123	125	124	0	727	Out		45	
F. W. Darnstadt, Rambler	0	0	0	0	120	120	120	120	0	0	1	18	Out			
R. F. McNamara, Premier	1	0	0	0	18	0	0	0	120	120	0	720	Disqualified			
Bert Maucher, Peerless	0	0	Out													
Runabouts:																
George Brooks, Peerless	0	0	0	0	50	50	50	50	50	50	0	246	1	1	22	270
William L. Longstreth, Maxwell	0	0	0	0	115	112	99	87	74	51	0	452	0	1	75	528
Jack Harkins, Stoddard-Dayton	0	5	0	77	Out											
Charles Borie, Mitchell	44	0	0	19	Out											
William Bourque, Knox	0	0	0	5	Out											
Ira L. Brown, Rambler	1	0	3	23	Out											
Thomas Wilkie, Buick	2	0	Out													

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FORT FAVORS MORE LIBERAL LAW

New Jersey Executive to Recommend Changes in Automobile Act—Newark Board of Trade Enlightens Him.

That Governor Fort, in his forthcoming annual message to the New Jersey Legislature, will recommend some important amendments to the automobile law of that State is assured as a result of his conference, on the 30th ult., with a special committee representing the Newark Board of Trade. The matter was placed before the Governor in a very strong light by Clarence H. Bissell, chairman of the committee, who in asking the Executive's assistance in bringing about changes in the law that would be fair to owners of machines as well as to the public at large, said in part:

"The action of the board was brought about by the boycott of New Jersey made products entering into the construction of automobiles threatened by the automobile manufacturers located in other States. The Board of Trade was informed that the sale of automobile parts by manufacturers located in the city of Newark alone, last year, exceeded the sum of $8,000,000, and throughout the State would probably be several times this amount. We are informed that the total amount of money received from licenses and registrations of automobiles for the eleven months from January 1 to December 1, 1908, was $152,128.49.

"While $150,000 is a large sum of money to be derived from this source it is, in our judgment, a small amount when compared to the loss which the manufacturers and other business interests affected will suffer if the present law is continued in force without modification.

"The two features in the present law which are causing the antagonism of non-residents and automobile manufacturers, are, first, the clause which requires non-residents to be personally registered before entering the State, and second, the grafting country justices. Supplementing the resolutions, and by way of further explanation, the existing statute in our opinion, which compels a tourist to take out a license before he can enter the boundaries of the State violates the law of good-will, fair play and neighborly State reciprocity. We feel that the tourist should be allowed from five to ten days' use of the State roads without being compelled to register.

"In making this recommendation we feel that the revenue derived by the hotels, garages and others interested in this transient trade is more than a satisfactory offset to the damage to our roads occasioned by these visitors. Speed traps for private gain should be abolished. This refers to the maintenance of traps by country justices and constables, timing an automobile over a short course, the course often being incorrectly measured, and the arrest made not to conserve justice, but to collect the fee which these men have a legal right to extort."

Governor Fort expressed surprise at the magnitude of Newark's trade interest in automobiles, as stated by the committee. He agreed with the proposition of granting certain tourist privileges. As to "speed traps," he expressed disapproval of them. The Governor stated that already he had talked with Governor Hughes, of New York, about the subject of interstate comity of licenses, and if possible would have like talks with the executives of Massachusetts, and other States.

Whatever recommendations the Governor may make to the legislature will be strongly supported by petitions from other parts of the State. The Atlantic City Board of Trade took action on the 30th ult., to secure the presentation to the legislature of a resolution favoring an amendment conferring tourist privileges on non-residents.

To Define "Borrowing" as Larceny.

Whether or not the unauthorized use of a motor vehicle by an employe of the owner constitutes the crime of larceny is a question upon which the Automobile Club of America aims to get a decision from the higher courts. To that end, on the 30th ult., it was instrumental in securing a certificate of reasonable doubt in the case of Richard P. Cooke, whom the Court of General Sessions had convicted of petit larceny and sentenced to the penitentiary for nine months.

Cooke is a chauffeur formerly employed by the New York Taxicab Co., and lives in Philadelphia, for which city he had started with one of the company's cabs when he was arrested. At his trial he pleaded that he had not intended to steal the vehicle, but was taking it to Philadelphia to give his mother, sister and sweetheart a ride. In charging the jury, Judge Malone said:

"The chauffeur takes the motor car out at night without his employer's permission and uses up the motive power and lubricating fluids and wears out the tires. Isn't that larceny? And if the use and wear and tear is not larceny, isn't it high time that it was so defined legally? If you believe the owner of this machine was deprived of it for only ten minutes you may convict the defendant of larceny."

The sole interest the A. C. A. has in taking up the case is to make it the means of reaching a final decision which will define such "borrowing" of vehicles by employes as larceny. The club already had taken up for this purpose, the case of Frank Kenny, who "borrowed" a milk wagon, rode around in it for several hours and then abandoned it. Kenny was found guilty of petit larceny in that he used the axle grease of the wagon and deprived the owner of its use. Judge Foster sentenced him to the penitentiary for three months.

VERMONT MAY TAX HORSEPOWER

Measure to Assess Motor Vehicles on that Basis Passes the House—Opponents to Make Fight in the Senate.

Taxation of motor vehicles, based on horsepower rating of the machines, is proposed in a bill which passed the lower branch of the Vermont legislature just before the Christmas holidays, and upon which a strong fight is to be made in the Senate. This bill provides for a graduated registration fee, ranging from $5 to $55 per year. The fee for the first year is based upon the actual horsepower. The horsepower is computed at 25 per cent. less the second year, 50 per cent. less the third year, and 75 per cent. less the fourth year and each subsequent year. Provision is made that the receipts from registration fees shall be turned into the highway fund to be apportioned among the counties on the basis of population, and the bill is favored by C. W. Gates of Franklin, State highway commissioner. It is estimated that the tax would raise from $40,000 to $50,000 annually. The argument in support of the bill is that the use of automobiles is not local and is a a cause of damage to highways throughout the State.

Among the opponents of the bill, which was passed through the house by the strong aid of rural members, are representatives of the cities and large towns. The ground of their opposition is the unfairness of the measure in regard to the large places. Representative Barber, of Brattleboro, who has opposed it from the start, says the passage of the bill would take more than $125,000 of taxable property from Brattleboro's tax list, and the small towns would get the benefit of it. Probably twice as many automobiles are owned in Brattleboro as in all the rest of the county. Mr. Barber believes that there would be no justice in taxing automobiles on any other basis than other property is taxed or in making the 1,200 automobile owners in Vermont pay one-fourth of the entire highway tax of the State as would be the case under the method of taxation the bill contemplates.

Motorists Object to Gasolene License.

Fire Marshal Gladwin, of New Haven, Conn., has caused a sort of gasolene explosion in that city by putting in force a regulation which requires every person who keeps more than a pint of that commodity to pay a license fee of $1. If the amount kept is two gallons, or over, the fee is $5. Individual complaints by a number of motorists have led the Automobile Club of New Haven to work for the abrogation or at least a modification of the ordinance. Consultations have been held with Corporation Counsel Rogers and a favorable outcome is expected.

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REAL RACING AT ASCOT PARK

Two Days Meet Full of Thrills—Hughes Makes Fastest Mile and Seyfried's Car Throws Its Driver.

For thrills, fast times and general all-around interest at the two days' meet as Ascot Park track, Los Angeles, Cal., December 26 and 27, under the auspices of the Southern California Automobile Dealers Association, the first day's racing easily was the better. The grandstand at Ascot Park accommodates 6,000 people without crowding, but when Starter Moross called the first event a few minutes before 3 o'clock on Saturday, the stands were filled to overflowing; the program contained many exhibitions, but good racing was furnished in several of the competitive events.

The best race of the afternoon was the twenty-five miles stock car derby, despite the fact that Soules in a splendidly-tuned car, had much the better of the scramble from the crack of the gun at the start to the dropping of the flag at the end of the quarter century. Soules reeled off mile after mile in close to a minute and covered the entire distance in 25:36⅗, which from a standing start, is "going some" for a stock car. Harold Stone in a Marmon was second, and R. L. Greer, Mitchell, finished third. Soules also showed speed in the five miles handicap. Starting from scratch he rapidly overhauled the field and won handily in 5:08⅘.

Another interesting event was the five miles for cars costing $3,500 or less. The crowd had picked Hugh Hughes in a Pope-Hartford to win, but Gus Seyfried, in a White, upset all calculations by winning a brilliant victory in 5:46⅗, while Stone nosed Hughes out of second place.

Two novelty events afforded considerable amusement for the crowd. In the five miles, which G. A. Bingham, in the Jackson won, the cars picked up passengers on the second mile and discharged them on the next lap. The passengers consisted mainly of a lot of raw novices and a majority of them were in such a hurry to get off the cars that the track stretch resembled a football field after a hard scrimmage. The two miles novelty was won by Harold Stone in a Marmon car.

It was quite natural that the spotlight of public interest should be focussed upon the big racing cars of Oldfield, Seyfried, Soules and Hughes, and when Soules came out for his mile time trial, he was given the glad hand, for there are many persons that believe, given an equal chance, Soules can cut up just as many didoes on the track as can Barney Oldfield. In their exhibitions Soules did a mile in 1:01, and Oldfield in 56⅗ seconds.

The best time of the afternoon was scored by Hugh Hughes—a professed Englishman—who handled the big front drive Christie car. Had the track been less dusty Hughes might have broken the track record of 51 seconds held by Ralph DePalma. As it was he covered a lap in 53⅗ seconds.

There is no telling what Gus Seyfried might have done in the Whistling Billy White steam car had not his desire to make Oldfield, Soules and Hughes look like selling platers overcome his caution. Seyfried is a San Francisco boy and although his track experience dates back only six months the youngster has shown decided ear marks and fear is a word not in his vocabulary.

Seyfried got away to a splendid start and came down the stretch at a speed of 90 miles an hour. The clockers caught him at the eighth post in 6⅕ seconds, but just after that a thrilling sight occurred. Seyfried did not appear to slacken for the curve and the crowd held its breath and watched the long white mastodon point its nose toward the turn, then suddenly veer straight for the fence. The front wheels would not hold to the angle and just as one of them collapsed the car overturned, throwing Seyfried clear. Seyfried had one or two cuts in his face, but an hour later was around, smiling as though nothing had happened. When the car upset the gasolene leaked out and caught fire.

The match between Oldfield and Hughes, the latter driving the Christie, was a disappointment, as Oldfield won in a walkover. This freak front drive creation is possessed of great speed for a mile or so, but it does not seem able to hold up for longer distances and this proved the case at Los Angeles. Hughes held his own against Oldfield for a mile and one-half, but as he came into the stretch for the third mile, the car was missing badly. After that there was nothing to the race but Oldfield.

There was just as large a crowd present on Sunday as there had been on Saturday, but the racing was not up to what it had been the day before, due principally to a slow track. A heavy fog came up before the meet finished and almost obscured the back stretch.

There was only one accident during the afternoon and due to the cool-headedness of Harold Stone that, fortunately, was devoid of casualities. In the third lap of the 25 miles stock car derby the right front tire on Stone's Marmon burst and in the ensuing efforts to keep the machine from zig-zagging into the fence the steering knuckle broke. Stone jammed on the brakes just as the wheels parted and let the nose of the car into the track.

The exhibitions by Oldfield, Soules and Seyfried were nothing above the ordinary. Soules turned a mile in 58⅗ seconds, and Seyfried in a stock car did three miles in 3:20. Oldfield made one circuit of the track in 55⅘ seconds.

Stone in the Marmon won three of the stock car events, and Bingham, Jackson, took the short novelty race. Two good stock car victories went to the White.

The three miles match between Oldfield and Soules was exciting enough for the most exacting. These two veterans of the track chased each other for nearly 2½ miles, Soules having the advantage coming into the stretch. In the final sprint Oldfield came up fast, but Soules met his burst of speed with a sprint and the cars flashed over the tape so close that the judges had to decide a dead heat. The summaries:

First Day—Saturday.

Five miles for cars costing $3,500 or less—Won by Gus Seyfried, White; second, Harold Stone, Marmon; third, Hugh Hughes, Pope-Hartford. Time, 5:46⅗.

Five miles novelty, for cars costing $2,000 or less—Won by G. A. Bingham, Jackson; second, John Heyser, White; third, A. Bagsdale, Cleveland; fourth, W. Lee, Tourist. Time, 9.13 1-5.

One mile exhibition—By Charles Soules. Time, 1:01.

One mile exhibition—By Barney Oldfield. Time, 0:56⅗.

One mile exhibition—By Hugh Hughes. Time, 0:53⅗.

One mile novelty race—Won by Harold Stone, Marmon; second, A. Bagsdale, Cleveland; third, John Heyser, White. Time, 2:10.

Twenty-five miles stock car derby—Won by Charles Soules, Stearns; second, Harold Stone, Marmon; third, R. L. Greer, Mitchell. Time by five miles, 5:14⅗, 10:19⅕, 15:21⅘, 20:27⅗ and 25:36⅗.

Five miles free-for-all handicap—Won by Charles Soules (scratch); second, Harold Stone, Marmon (0:35); third, R. L. Greer, Mitchell (1:10); fourth, Hugh Hughes, Pope-Hartford (0:35). Time, 5:08⅘.

Five miles match between Barney Oldfield and Hugh Hughes—Won by Oldfield in walkover. Time by miles, 1:03⅘, 2:02⅕, 3:01⅘, 3:58⅕ and 4:54⅘.

Second Day—Sunday.

Three miles novelty—Won by G. A. Bingham, Jackson. Time, 5:14.

Five miles for stock cars listed at $3,500 and under—Won by Gus Seyfried, White. Time, 5:42⅘.

Five miles novelty—Won by Harold Stone, Marmon. Time, not given.

One mile exhibition—By Charles Soules. Time, 0:58⅗.

One mile exhibition—By Barney Oldfield. Time, 0:55⅘.

One mile combination race—Won by Harold Stone, Marmon. Time, 2:26.

Three miles match between Charles Soules and Barney Oldfield—Dead heat. Time, 3:00.

Three miles against time—By Gus Seyfried, White. Time, 3:20.

Twenty-five miles stock car derby—Won by Charles Soules, Stearns. Time, 28:30.

Five miles handicap—Won by White car (0:30); second, Harold Stone, Marmon (0:40); third, Charles Soules, Stearns (scratch). Time, 5:51.

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The Week's Patents.

900,111. Transmission Gear. Robert J. Million, Jefferson township, Carroll county, Ind. Filed June 12, 1906. Serial No. 321,334.

1. The combination of a revoluble member, a frame mounted thereupon and adapted to move so as to allow the said revoluble member to swing bodily upon an axis different from its axis of rotation, another revoluble member engaging said first mentioned revoluble member, a movable member supporting said second mentioned revoluble member so as to allow it to swing upon an axis independent of its axis of rotation, said revoluble members engaging each other directly, and means for turning said first mentioned revoluble member.

900,154. Lubricating Oil Distributor. Louis Dubrulle, Paris, France. Filed Jan. 2, 1907. Serial No. 350,505.

In a lubricator, a primary pump, a plurality of secondary pumps, and discharge pipes therefor; a rod on which all the pistons of the aforesaid pumps are mounted, a header provided with sight feeds for the secondary pumps, an inlet pipe and a discharge pipe leading, respectively, to and from the header, the primary pump being arranged to supply the header with lubricant and to remove the excess therefrom, the secondary pumps being arranged to take lubricant from the sight feeds and deliver it to the discharge pipes, and means for reciprocating the rods.

900,160. Motor Vehicle Truck. Rodolphus Fuller, Detroit, Mich. Filed Nov. 21, 1906. Serial No. 344,387.

1. In a truck for electric motor vehicle, the combination with a fixed axle and independent driving wheels thereon, of a drive shaft and a driven shaft substantially in the horizontal plane of the axle and in rear thereof, the driven shaft being in rear of the drive shaft and centrally provided with a differential gear, an electric motor upon one end of the drive shaft, a variable speed transmission gear upon the other end of said shaft and a drive pinion sleeved upon said shaft between the motor and said variable transmission gear and transmitting motion from the transmitting gear to the differential.

900,199. Roller Bearing. Julius A. Perkins, Omaha, Neb., assignor, by mesne assignment, to United States Roller Bearing Company, Jersey City, N. J., a Corporation of New Jersey. Filed Aug. 14, 1903, Serial No. 169,500. Renewed Aug. 28, 1908. Serial No. 450,743.

1. A box having a residuum receptacle provided with a plurality of webs crossing the box and connected with the opposite sides thereof, said webs being provided for part of their length at the upper edges with tracks over which bearing rollers travel in their planetary movement about the journal of the axle, said tracks being so located as to enable the entire periphery of each bearing roller in its plenetary movement to be exposed above a space of the residuum receptacle.

900,342. Transmission of Power. Frank M. Ashley, New York, N. Y. Filed Nov. 26, 1902. Serial No. 132,965.

1. In power transmitting apparatus, the combination of an accumulator of sufficient capacity to act as a storage of power as set forth, means for delivering liquid to said accumulator, a motor in operative relation with respect to the accumulator and embodying a plurality of rotary power elements of different diameters with respect to each other, nozzles coactive with said power elements and capable of a uniform jet velocity, and provision for independently placing said nozzles in communication with the accumulator.

900,359. Changing Batteries in Electrically Propelled Vehicles. Albert J. Doty, Mount Vernon, N. Y., assignor of one-half to Charles Berg, Philadelphia, Pa. Filed Feb. 3, 1909. Serial No. 413,948.

1. The combination with an electrically propelled vehicle having a battery receptacle depending from its bed and provided with an opening at each side of the vehicle, of a pair of battery trucks on opposite sides of the vehicle in position to deliver a battery from the other side, means for detachably connecting the trucks to the vehicle and mechanism for moving a battery from one of the trucks into the receptacle against a battery therein, whereby the latter will

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be displaced and delivered upon receiving truck.

900,388. Shock Absorbing Mechanism for Vehicle Springs. Wellington P. Kidder, Boston, Mass. Filed Jan. 11, 1907. Serial No. 351,852.

1. In a shock absorbing mechanism for vehicle springs, a vehicle body portion, a supporting axle, a spring intermediate of the axle and the body, a toggle joint intermediate of and connecting the axle and body and comprising a comparatively short member and a comparatively long member, the short member being provided with a curved bearing surface at its end farthest from the long member and a friction mechanism comprising a spring actuated plunger bearing against said curved surface on the short member for the purpose set forth.

900,389. Self Propelling Combined Harvester, Agricultural Engine, and Truck. Fred L. Kincaid and Henry T. Preble, Stockton, Cal. Filed Aug. 31, 1905. Serial No. 276,627.

1. A machine of the class described comprising a truck provided with a guide wheel in front and bearing wheels at the rear, two motors mounted on the truck, means for connecting either one or both of the motors with the bearing wheels, a threshing cylinder located upon the truck, and means operatively connecting the threshing cylinder with the motors.

900,450. Variable Speed Driving Mechanism. Marion E. Vaughn, Plainfield, Ind. Filed Feb. 8, 1906. Serial No. 300,103.

1. In a speed changing mechanism, driving and driven wheels with their sides in frictional engagement, and means for shifting the position of one wheel in the arc of a circle to which the engaging surface of the other wheel is tangential.

900,498. Pneumatic Tire. Horace W. Dover, Northampton, England. Filed April 8, 1907. Serial No. 366,985.

1. In a wheel provided with a pneumatic tire, the combination of a tire cover fastened to the sides of the wheel rim and having laterally extending hollow lobes situated radially beyond the point of attachment, a pair of side flanges gripping the said hollow lobes, and an inflatable inner tube confined between the cover and the wheel rim, in such manner that the internal pressure increases the grip of said lobes against the flanges, substantially as specified.

900,503. Driving Mechanism for Swinging Axles. Allen H. Fetzer, Galion, Ohio, assignor of one-eighth to Grover M. Shumaker and one-third to Melvin E. Shumaker, Galion, Ohio. Filed Nov. 30, 1907. Serial No. 404,478.

1. A mechanism of the character described, comprising an axle equipped with a ball having cavities in its periphery, the side walls of said cavities being convex and their end walls being concave and a sectional sprocket whose sections are provided with central aligning openings with their walls curved inwardly to conform to the periphery of said ball and means projecting from, and secured between said sprocket sections, for engagement with said cavities.

900,518. Gas Engine Starter. Raleigh W. Godfrey, Oberlin, Ohio. Filed Aug. 7, 1907. Serial No. 387,478.

1. A device of the class described comprising a reservoir, a tube or barrel adjacent thereto and containing a measuring chamber communicating with the reservoir through a port or duct, and two way valves in the tube or barrel adjacent to the ends of the measuring chamber, one of said valves being adapted to obstruct the port leading to the reservoir.

900,522. Picture Exhibition Device. James H. Gravell, Philadelphia, Pa., and George D. Farwell, Bridgeport, Conn., assignors of one-third to Percy C. Farwell, Bridgeport, Conn. Filed Nov. 1, 1907. Serial No. 400,306.

1. The combination of a self-propelled vehicle, a motor therefor, an electric generator, means for transmitting power from the motor to the generator, a picture exhibition outfit, and means for connecting the generator and picture exhibition outfit, with mechanism whereby the same motor is utilized for propelling the vehicle and for driving the generator, substantially as described.

900,604. Carburetter. Howard Small, Chicago, Ill., assignor to John W. Duntley and William O. Duntley, Chicago, Ill. Filed Dec. 28, 1904. Serial No. 238,600.

1. A carburetter having a plurality of vaporizing nozzles communicating with a common source of fuel and arranged in a circle, and a rotary disc valve for cutting one or more of the nozzles into and out of service at the will of the operator.

900,632. Pump for Pneumatic Tires. Henry M. Williams, Vincennes, Ind., assignor of one-half to J. Frank Whyte, Coatesville, Ind. Filed July 8, 1907. Serial No. 382,644.

1. In a mechanism of the class described, the combination with a revoluble support, of a guide-plate carried by said support, a cross-head slidably mounted on said guide-plate, a cylinder carried by said guide plate, a piston head in said cylinder, means connecting said cross-head to said piston head, a roller secured to said cross-head, and an adjustable cam member positioned contiguous to said cross-head and capable of being placed in the path of movement of said roller, whereby said piston will be reciprocated in said cylinder, when said revoluble support is rotated.

900,634. Ball Bearing. Frederick W. Witte, Chelmsford, England. Filed April 23, 1906. Serial No. 313,254.

1. A ball bearing comprising balls, a spacing device for the same adapted to unequally space the balls, an inner and an outer ring, each having a curved track, and having a gap for each ball in one of the rings only, passing from one side inwardly toward the track.



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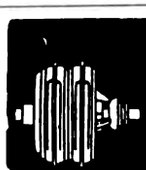
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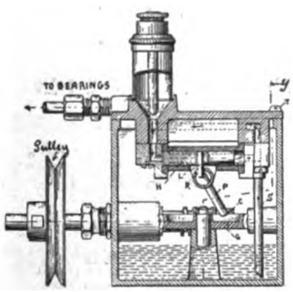
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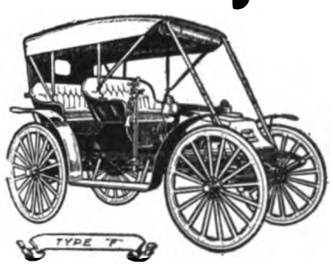
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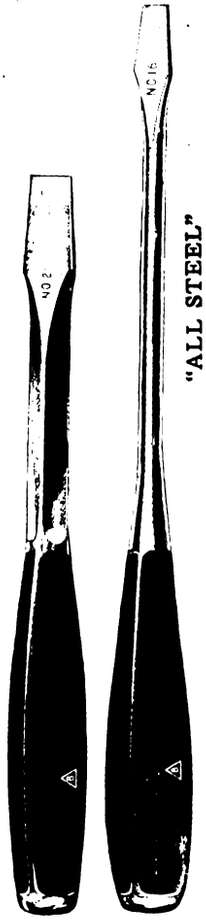
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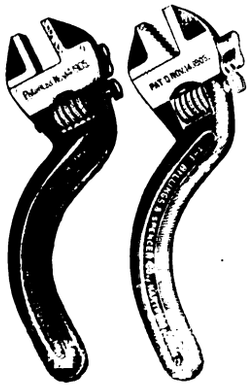
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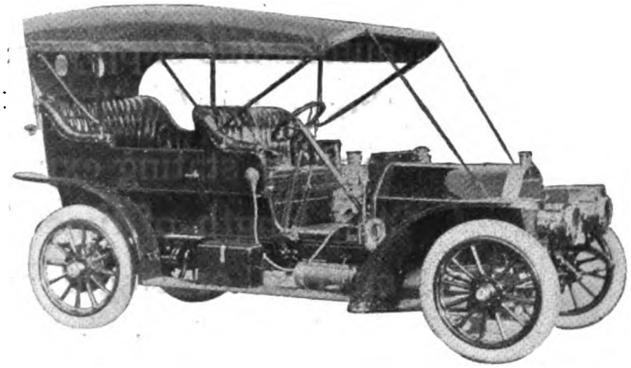
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No. 7 Matheson Wins First Place

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This car, owned and entered by Mr. F. M. Kirby, Wilkesbarre, Pa., and driven by Mr. Kirby's chauffeur, William Miller, is a regular stock Matheson touring car which Mr. Kirby had driven over 7,000 miles prior to entering it in the contest. Actual running time, 5 hours and 31 minutes, breaking all previous records.

No. 15 Matheson Wins Third Place

This car, entered and driven by Mr. Ross Anderson, Wilkesbarre, Pa., was a regular stock Matheson touring car which had covered 18,000 miles in service prior to entering this contest. Actual running time, 6 hours and 4 minutes; also new record time.

No. 6 Matheson Wins Fourth Place

This car, entered by ourselves, was a regular stock Matheson touring car which had covered over 12,000 miles in service prior to entering this contest. Actual running time, 5 hours and 24 minutes, the fastest time ever made by any car over this course, Summer or Winter.

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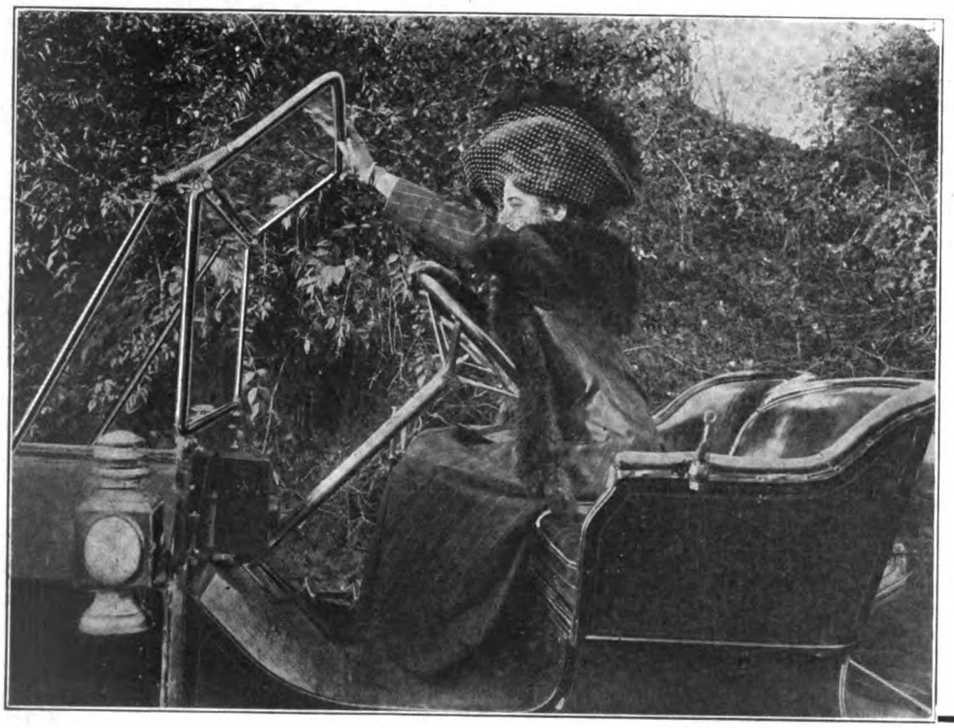
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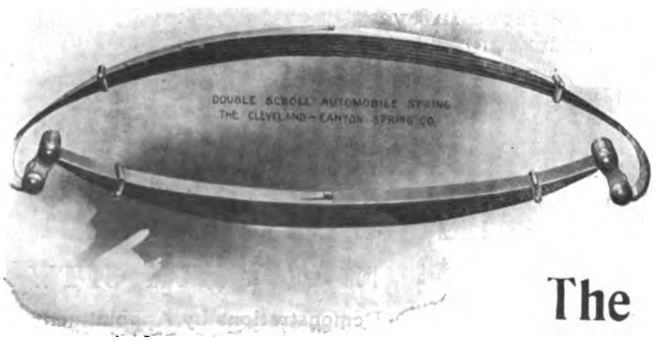
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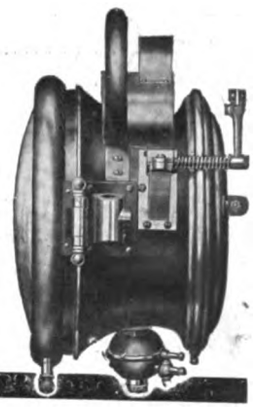
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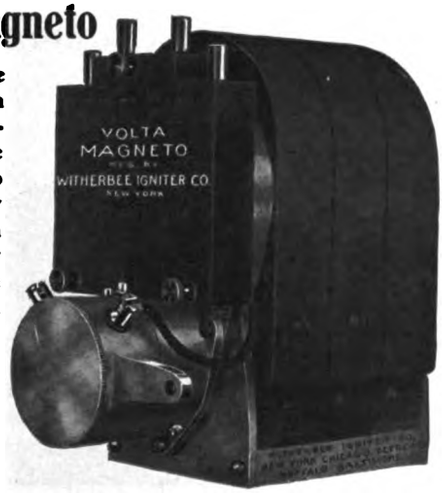
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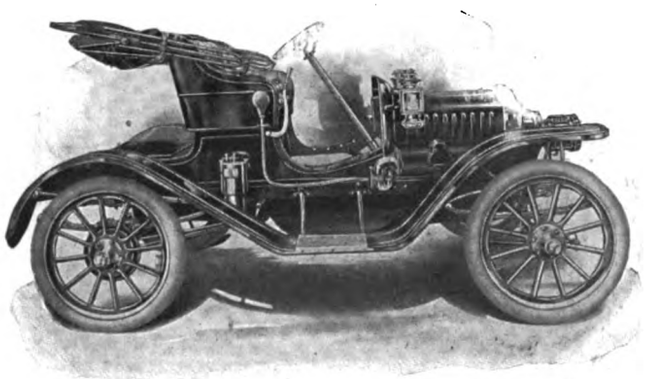
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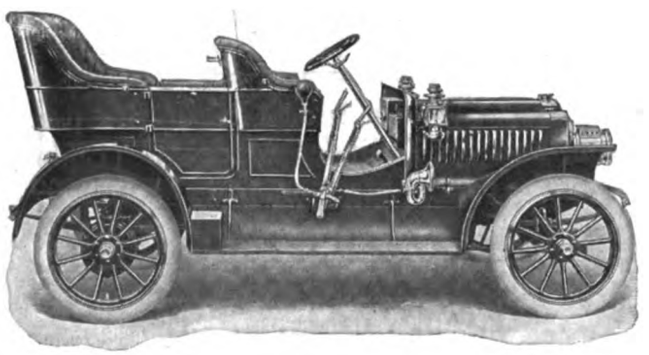
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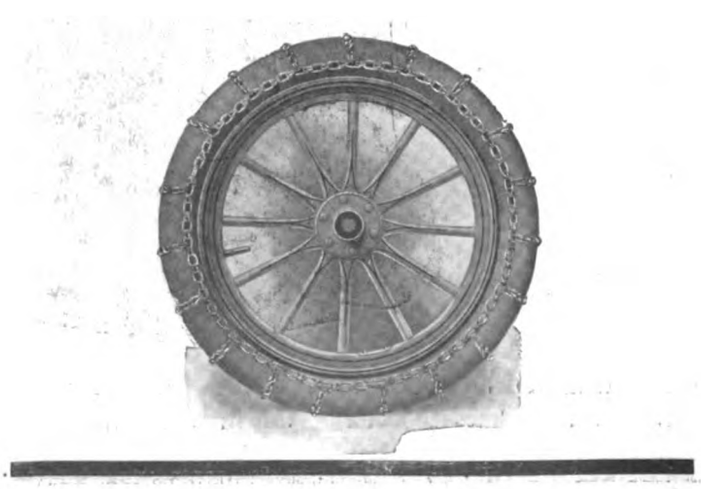
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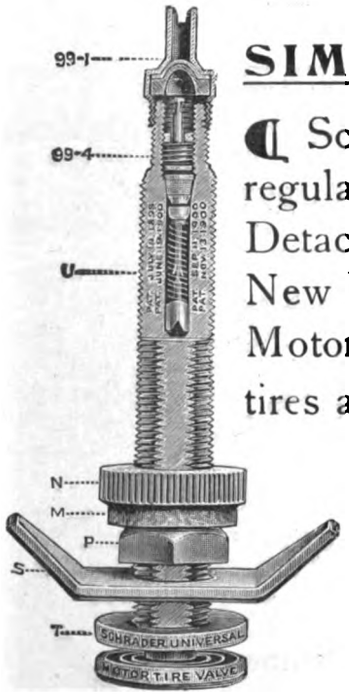
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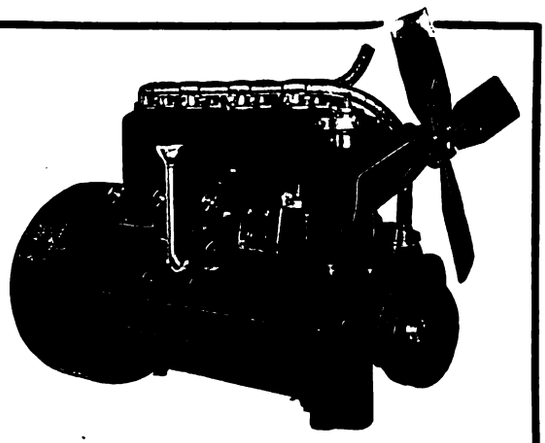
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THIS AND TWO OTHER "FOURS" —AND A 50 HORSEPOWER "SIX"!

Proved and recognized successes, with a service record. Offered in 25 horsepower, 30-35 horsepower, 40 horsepower, and the 6-cylinder 50 horsepower. All fitted with oil pan base. Equipped for magneto attachment.



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"LONG-ARM" TRANSMISSIONS

THREE speeds and reverse, selective types. The best of material and workmanship. Our experience in gear cutting and manufacturing Automobile Parts enables us to equal the best transmissions built. Let us figure on your requirements.

We also build a complete line of
AXLES, CLUTCHES
STEERING REACHES
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The "Long-Arm" System Co.,
CLEVELAND, O.

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SUPPLEMENTARY SPIRAL SPRINGS

¶ If every driver had to ride in his own tonneau, every car would be quickly equipped with Supplementary Spiral Springs. Owners are not intentionally selfish—many of them just thoughtless. Usually driving or sitting beside the driver, the riding qualities of the tonneau are to them practically unknown.

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¶ With the S. S. S., your springs never whip or touch. They prevent breakage and are the most economical and useful accessory ever provided for a car. Every live dealer carries them and their attachment is a matter of a few hours' time. Do it NOW.

SUPPLEMENTARY SPIRAL SPRING CO.
Motor Mart, New York — 4555 Delmar Ave., St. Louis, Mo.

Full 18-20-Horse Power

For Speed—Dependability—Economy Under all Conditions of Weather—Hills—Mud and Sand—With no Experience necessary YOU CAN BANK ON THIS CAR.



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In buying an automobile consider first cost, but hesitate longest to investigate upkeep and economy of fuel consumption. Buy a car where you can hold the maker to this guarantee. Insist on records of durability and the evidence of thousands of users' endorsements. We invite comparison of our catalogs—books—testimonials—which you can have for the asking. Write for them. But above all compare our factory facilities—expert workmanship—experience and the highest quality of every part of

The Invincible Auto-Runabout SCHACHT

with all others of this style car. Write us and investigate the meaning to you as an owner of a car like the Schacht. Full 18-20-horse-power—gearless—clutchless—Timken roller bearings throughout—easy riding long "Concord" springs—high, solid cushions, Goodrich rubber tires for economy of upkeep on all roads—Schebler carburetors, etc.—Full high class equipment found only on high priced cars.

The Schacht is the easiest to run, simplest, most practical, most economical car you can buy—Let us show you all the reasons why. Write for literature. If interested as an agent—let us make you our Special Proposition.

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Tear this out, fill in and mail for Schacht book Free

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Send me your latest Invincible Schacht Auto-Runabout Books and Literature free without obligation on my part.

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For equal size and equal quality of steel, the durability of a ball bearing is proportional to the number of balls that carry the load. Double the number of balls, and you double the life of the bearing.

F & S ANNULAR BALL BEARINGS



contain the maximum possible number of balls. The race is entirely filled—less only one ball for the separating spaces.

The ingenious yet simple manner in which this is accomplished gives an unbroken path for the balls while conserving rigidity in the races. The balls are *sprung* in through diagonal side slots *shallower* than the race grooves. Once in, the balls never touch the side slots, which in effect no longer exist.

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Sole Importers, Times Bldg New York

Ninth National

Automobile Show

Madison Square Garden

January 16 to 23, 1909, New York City

Under the Auspices of the

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Exhibiting standard Gasoline Cars licensed under the Selden patent.

LICENSED GASOLINE CARS

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INTAKE, EXHAUST AND WATER PIPES
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THIS MAGNETO IS "FOOL PROOF"

The most unskillful driver can install the Remy 1909 High Tension Magneto. Improper connection cannot injure it, and no amount of tinkering will put it out of commission. The Remy will stand more neglect, oil, dirt and water than any other ignition system in the world. More than 17,000 Remys have already been sold for 1909 cars—more Remys than all others combined. Write for illustration and description.

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We have opened a branch house in Thoroughfare Bldg., Broadway and 57th St., New York.

HAVE YOU SEEN
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The newest and best wrench made; all steel—great strength; instantly adjusted; easily and quickly operated; positive grip; immense time, trouble, and temper saver; best "all round tool" ever offered for sale.

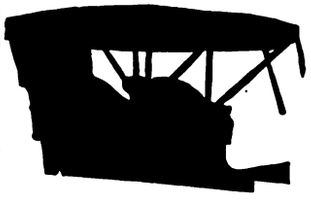
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For circular address,

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Aluminum Bodies
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Pneumatic Tires
Automobile Accessories of every description.
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Steel Tires
Full of Air.
Tire expense cut in two.
Cannot Blow Out, Rim Cut or Puncture.
As Flexible as Rubber Anti-Skid.
That part of a tire with a blowout or a rim cut in it will last longer than any other part if encircled by a few sections of steel.
Thousands in use.
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WE WILL NOT
accept your contract unless we can give you the delivery you require. We will not accept more contracts than we can fill with proper attention to each. We make Pressed Steel Frames and Automobile Stampings.

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DOW TUBES
The Best Tubes Ever Manufactured.
Are the most economical. Do not deflate when punctured.
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I HAVE A NORTHERN LIMOUSINE which for the best of reasons I want to sell quickly.

It is in perfect condition, having been driven less than 500 miles, and I think it's one of the sweetest running, handsomest appearing, town cars made.

Tires are brand new and the varnish isn't damaged—in fact the car is just as good as new when it sold for $2,500 and I'll sell it for half—$1,250.

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on your automobile mean more comfort, speed, safety, economy. Prove it at our expense. 30 days free trial.
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"They Shoot a Flame."
CLEVELAND SPARK PLUG CO.
CLEVELAND, OHIO

The "Gotham" **STA-RITE** will end your spark plug troubles. Soot can't stick to the porcelain.



Won't short-circuit. Never leaks. Can be taken apart and cleaned with ease. Of dealers, or direct, $1.00.

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MADE IN ITALY, AMERICA
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If your car is wired with PACKARD ENAMELED IGNITION CABLE you can be dead sure you will have no trouble so far as the wiring is concerned.

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TUCKAHOE GREASE GUN

New and very meritorious. The only self-filling combination oiler and grease gun. Can be filled with grease in three seconds. Regulated by throwing a latch. Its use insures quick oiling and clean hands. Lower in price than others. Write for circular.

Manufactured and sold by the

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THE OIL THAT GRAPHITIZES

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YOU NAME THE CAR WE'LL NAME THE GRADE

MADE ONLY BY

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MAKERS OF

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(Capacity 100,000 per annum.)

Heavy and Difficult Stampings
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Transmissions, Selective and Progressive
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SEE OUR EXHIBITS:

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THE GYROSCOPE CAR

The Simplest Automobile in the World.

$750—The Price—$750.

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Tire Troubles?

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Demonstrated before Board of Governors Harrisburg Motor Club with great success. For particulars write

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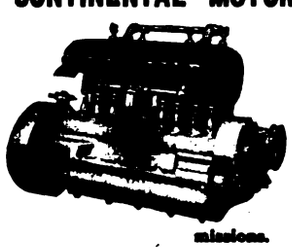
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which adds to the efficiency of the lamps, and keeps glare from blinding other users of the highways. Can be fitted to any existing lamp.

PEERLESS MOTOR CAR CO.,

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"CONTINENTAL" MOTORS ARE STANDARD



Get our quotations on high grade two and four cylinder motors, 10 to 45 horsepower. They are equipped with self-contained oiling system and ready for attaching magneto. Highest grade workmanship, efficient, durable and simple. Also clutches and transmissions. Send for catalogue.

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ONE Quality for ALL Models
ONE Price for ALL Buyers

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THE DAYTON MOTOR CAR CO.,
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The PULLMAN

4-40 Roadster. Price, $3,000.

that made the run from Philadelphia to Savannah, Ga., March 5th to 18th, through mud up to the radiator, beating all previous records.

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40 H. P. Four Cylinder, Shaft Drive, $1,600.

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The Device that made Safe, Speedy and Comfortable Automobiling Possible.

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READY FLATED TIRES

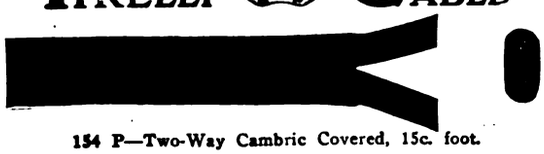
Universally approved by all motorists.

CONTINENTAL CAOUTCHOUC CO.,
1788-90 Broadway. New York City.
WRITE FOR PRICES OR INFORMATION

Locomobile

The Locomobile Company of America,
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PIRELLI WONDERFUL ITALIAN **CABLE**



154 P—Two-Way Cambric Covered, 15c. foot.

Our Cable Card

Illustrating 11 Varieties of cable in actual sizes mailed upon request.

This is No. 154 P., Two-Way, Cambric Covered.

To Avoid Ignition Trouble, Specify PIRELLI Wire. **PIRELLI & CO., 296 Broadway, New York**

For sale by MOTOR CAR EQUIPMENT CO., 55 Warren St., and 1727 Broadway, New York City.

DIAMOND CHAINS

drive their cars more miles per dollar cost than any others

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DIAMOND CHAIN & MFG CO.
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Empire Tires
WEAR LONGEST

EMPIRE AUTOMOBILE TIRE COMPANY, Trenton, N. J.

BRANCHES—Newark, 264 Halsey St.; Detroit, 842 Woodward Ave.; Boston, 292 Devonshire St.; Chicago, 20 La Salle St., 1301 Michigan Ave.; New York, 73d St. & Broadway; 148 Chambers St. AGENCIES—Pittsburg, Consumers' Auto Supply Co.; Kansas City, Mo., Empire Tire & Rubber Co.; Atlanta, Ga., Dunham Rubber Co.; Cleveland, O., Motor Supply Agency Co.; Norfolk, Va., Wm. H. Grover; Denver, Denver Auto Goods Co.; Jacksonville, Fla., Savell Rubber Co.; Philadelphia, Penn Auto Supply Co.; Los Angeles, Cal., Pacific Elec. Wks.; Buffalo, N. Y., Empire Sales Co.; Minneapolis, Empire Tire & Rubber Co.; Savannah, Ga., Harris Tire Co.; New Orleans, La., H. A. Testard.

ALUMALOY SHEETS

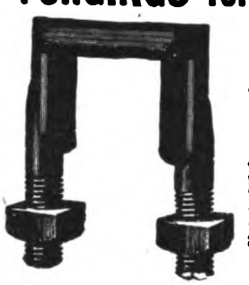
For Automobile Bodies, Dashes, Guards, Bonnets, Battery Boxes, Drip Pans, Mufflers, Etc.

STRONG—DURABLE
SCALELESS—RUSTLESS
SMOOTH—PAINT ADHERES FIRMLY

A Metal That's A Time and Money Saver

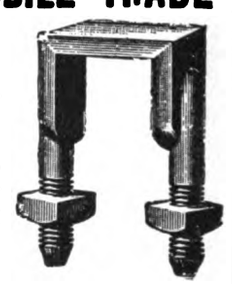
THE STARK ROLLING MILL COMPANY, CANTON, OHIO

FORGINGS for the AUTOMOBILE TRADE



Satisfaction Guaranteed

Thousands of our **Spring Clips** are now in use, having been supplied to the leading automobile manufacturers.



Have you secured our prices?

THE M. SEWARD SONS COMPANY, New Haven, Conn.

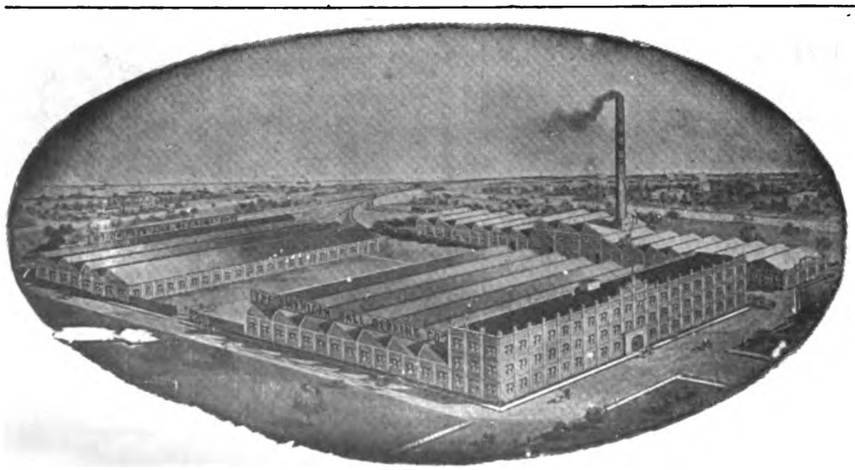


Cramp — Metals

Don't fail to see the much talked of Splitdorf Magneto at the Madison Square Garden Show.

Elevated Platform, Space 102.
Look for our page ad. in this paper next week.

C. F. Splitdorf Walton Ave. and 138th St. Branch, 1679 Broadway. New York



The output of complete Front and Rear Automobile Axles of this plant exceeds the capacity of all competition combined.

THE American Ball-Bearing Co.

L. S. & M. S. Ry. & Edgwater Park

CLEVELAND, OHIO, U.S.A.

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The Remy 1909 High Tension Magneto can't be put out of commission by ordinary abuse.

It is literally "fool proof." Anybody can install it, whether he knows anything about machinery or not.

Even if an improper connection should be made it wouldn't injure the magneto.

And the Remy will stand more neglect and accumulation of oil, dirt and water than any other ignition system in the world.

The Remy is the American Magneto specially built to meet the bad roads and other hardships encountered by American cars.

Double ignition is provided with one set of spark plugs in the Remy. This feature is original with us.

The Magneto switch furnished with the Magneto is fitted with a push button for starting the motor upon the spark without cranking, where dry batteries are wired in connection with the Magneto.

On account of the extra hot spark furnished by this Magneto and the perfect timing of the gear-driven Magneto, from 5 to 25 per cent. more power is secured than where a vibrator coil and storage batteries are used.

We are the oldest manufacturers of Magnetos in America. We have the largest factory devoted exclusively to the manufacture of magnetos in the world. We have already sold over 17,000 magnetos for 1909 cars—more than all our competitors, foreign and domestic, combined have sold or can sell.

You therefore take no chances when you put in a Remy.

Ask any owner of a car made by the following companies. The Remy is a regular equipment on their machines:

Pope Motor Car Co.
Buick Motor Co.
Maxwell-Briscoe Motor Co.
Apperson Bros. Automobile Co.
Midland Motor Co.
Olds Motor Works
Regal Motor Car Company
Model Automobile Company
Overland Automobile Co.
Cameron Car Co.
Kissell Motor Car Co.
Crawford Automobile Co.
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See it at the New York and Chicago Automobile Shows

The Remy was used on the Buick that led all American cars in the Savannah races. It figured in scores of important victories during the last season.

Write us for illustrations and full description of our new high tension Magneto. We are building them in such large quantities that we can make you attractive prices. We can very likely furnish you fittings for attaching the Magneto to your automobile, or almost any garage could install it without the fittings. Ask for it upon your new car.

Address Department 11.

Remy Electric Company
Anderson, Indiana

We have opened a Branch House at Thoroughfare Bldg., Broadway and 57th St., New York.
Madison Square Garden Show, Space No. 125, Elevated Platform. Chicago Coliseum Show, Gallery, Space No. 65.

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Ten Years in the Lead

and Three Improvements, give in

Diamond
WRAPPED TREAD TIRES

for 1909 more tire value than ever before offered in America or Europe.

THE DIAMOND RUBBER CO.
Akron, Ohio

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For Every Day Use and Touring

Diamond Demountable Rims





For Carrying Extra Inflated Tires

¶ They won the only official test of demountable rim equipment ever made.

◆

¶ They have shown the greatest efficiency and positive security.

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¶ Simply remove a few nuts, slip the rim with flat tire off and slip on a fresh rim carrying the extra tire inflated and complete. Easy for the veriest novice.

Descriptive Matter and Prices on Request.

The Diamond Rubber Company

Akron, Ohio

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This Tire Will Give You The Best Service

There may be other tires on the market that probably look from outside appearance to be as good as the G & J, but if you will get sections of the different tires and compare the quality of rubber, its toughness, and the manner in which it is embedded into the meshes of the fabric you will note there is a difference. After making this comparison and also noting carefully the general construction, you will not wonder why so many are specifying G & J Tires.

G & J TIRE CO.

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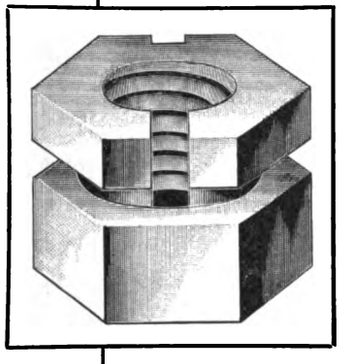
"Locking the door after the pony is stolen"

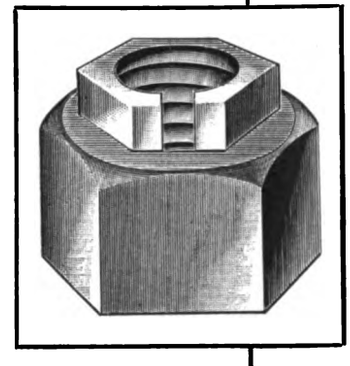
is a good deal like postponing the use of

Columbia Lock Nuts

Now

for it's only a postponement at best. Why not take a double-twist on the forelock of old Father Time and incorporate the use of Columbia Lock Nuts in your construction BEFORE you have occasion for regrets? Columbia Lock Nuts are in general use and are regarded as a necessity by some of the biggest railroad systems in the country. They ought to be a double necessity on automobiles. They are already used by many prominent makers. They should be used on every automobile everywhere.





¶Columbia Lock Nuts simply cannot work loose. Vibration, even the constant vibration of solid tires, cannot affect or loosen them. They are automobile insurance of the very best kind and their cost is not a factor. Let us prove our case.

COLUMBIA NUT & BOLT COMPANY

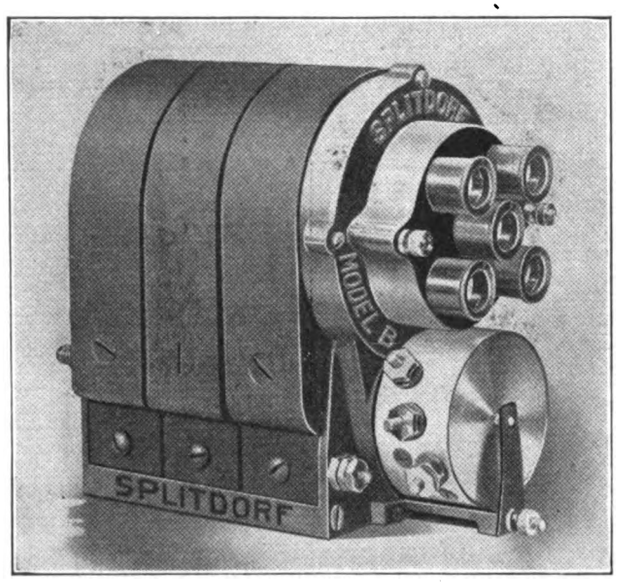
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The Best Equipped Car

from an Ignition standpoint, is the one fitted with a

SPLITDORF MAGNETO



The inevitable result of using a cheap and poorly made Magneto is trouble, loss of time, disappointment and endless expense.

This is not theory at all, but the actual experience of those who have been tempted to save a few dollars at the start.

Although its price is somewhat higher, it is *positive economy* to equip your car with a SPLITDORF Magneto because of the better, more uniform and absolutely reliable ignition you thereby obtain.

Simplicity of construction, interchangeability of parts and accessability are among its strong features. Completely water-proof, dust-proof and fool-proof.

Remember always that there is fifty years of invaluable electrical engineering experience and the largest and best equipped Ignition Specialty plant in the world behind the SPLITDORF product—fifty years of continuous endeavor to produce the highest grade of goods in the market.

Be guided by the big majority of experienced motorists, who concede SPLITDORF Ignition to be the best.

Get our Magneto catalog for details. We exhibit at the Madison Square Show. Elevated Platform, Space 102.

C. F. SPLITDORF

Walton Avenue and 138th Street—Branch, 1679 Broadway--New York

CHICAGO
319 Michigan Ave.

DETROIT
886 Woodward Ave.

BOSTON—Motor Mart
220 Pleasant St.

SAN FRANCISCO
520 Van Ness Ave.

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You Who Know All About Automobiles

You who know all about carburetors—magnetos—transmissions— lubricating systems—Do you know ALL about TIRES? Do you know why one tire blows out at 2,100 miles, while its running mate stands up for 12,000 or 15,000?

If you lack proper tire knowledge, your tires are apt to cost you more than your engine—more than your gasoline—more than all the other outlays your motor car demands.

Please understand, first, the difference between a **moulded** tire and a **wrapped tread** tire.

The moulded tire is built up, layer by layer, on an iron core. Over it is clamped an iron mould. And when the heat of the curing process is applied, that rubber expands—and, in expanding, forces a perfect union between the various layers of rubber and of fabric.

In building up that tire on the iron core, a skilled workman lays fabric on fabric, rubber on rubber. It is a feat of dexterity.

Yet, skilled as he may be, he cannot wholly avoid wrinkles, irregularities, unevenness, which, under the pressure of curing, multiply themselves into **hidden** weaknesses and defects.

Some tires, instead of being cured on an iron core, are cured on an **air bag.**

The air bag is really only another name for an inner tube—an extra strong inner tube. When the air bag has been inserted in the built-up tire, strong tape is wound around it, and then it is cured in live steam.

The advantage of the wrapped tread process is that the air bag, full of compressed air, smoothes out those wrinkles and irregularities and prevents those hidden weaknesses and defects.

The advantage of the wrapped tread process is, for this reason, immeasurable. But there is one disadvantage: The tire made by this process does not get the **terrific squeeze** that the moulded tire gets when the heat expands it between core and mould—the squeeze that forces the rubber into the fabric, making a perfect union between fabric and rubber. In losing that squeeze, it loses durability, strength, unity—which more than offset the fact that the wrapped tread tire can have no hidden wrinkles or unevenness.

Obviously, the tire you ought to have is one that is built upon an iron core—**squeezed** the same as a moulded tire—and **finished** on an air bag to smooth out the irregularities. Such a tire would be costly to its makers. It would combine the expenses of making a moulded tire and a wrapped tread tire.

Yet in spite of the added cost, there is one tire made in just this way—**only one.** It is the Goodyear Quick Detachable. The Goodyear Quick Detachable costs **you** only a trifle more than the common moulded tire with its inevitable hidden defects—only a trifle more than the wrapped tread tire, with its inevitable weakness.

The Goodyear Quick Detachable, because it combines the best of the two processes, and does away with the shortcomings of both, will cost you less per mile to run than any other tire which can be made.

This one point of superiority is reason **enough** why the Goodyear Quick Detachable can be expected to outwear tires of any other make. But there are other reasons—other superiorities.

The Goodyear Quick Detachable is, for example, an **oversize** tire.

That is, the **32x4 size** is nearly a 32x4½ tire—and other sizes are oversize, in proportion.

The Goodyear tire is made larger than the specifications call for. It is simply 15% larger, and 15% better than any other tire marked the same size.

There are countless other Goodyear superiorities.

There is, for instance, the Goodyear rubber-rivet breaker-strip, which makes it impossible for the tread to split or peel from the carcass of the tire. This exclusive Goodyear device, protected by patent, deserves a full page of description here.

But it is cited merely as one of the Goodyear superiorities—superiorities which extend from the raw materials to the workmanship—from scores of exclusive Goodyear processes to the Goodyear piano-wire tape described elsewhere on this page.

You want proof: There are in New York City 1,000 taxicabs.

More than on any other one thing, the profit of the taxicab business depends on keeping down tire expense.

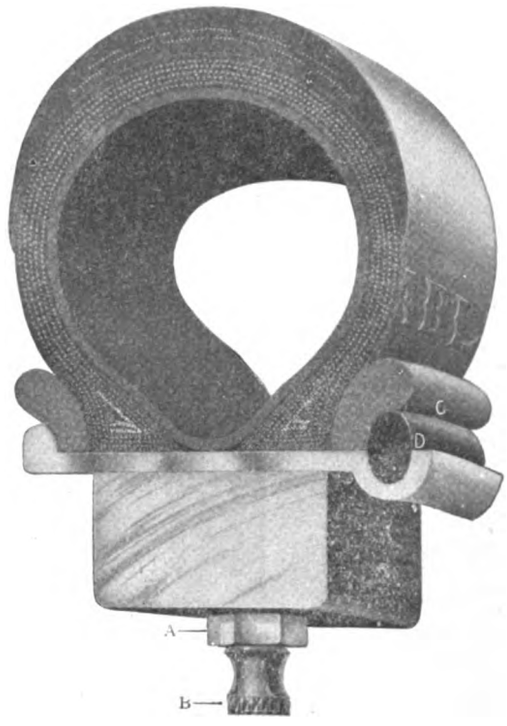
The owners of the 1,000 taxicabs in New York City tried all the experiments possible to try. They measured the values of the tires they tested purely by the cost per mile of the service they gave.

The taximeter, you will understand, checked up by the cash receipts, told the mileage of the tires unerringly, indisputably. And the result of the cold-blooded test is that:

Today, 800 out of the 1,000 taxicabs in New York, operated by several competing companies, have contracted for Goodyear tires to be used exclusively.

These 800 taxicabs are doing 60,000,000 tire miles a year. More than 1,000,000 tire miles a week!

How Tire Nuisance and Expense May be Avoided



To take off the Goodyear Quick Detachable Tire on Universal Rim in 60 seconds, use any small wrench to loosen nut "A." Do the rest like this: Push valve stem "B" up into the tire, press outer flange ring "C" inward lift out locking ring "D," slide ring "C" off and then the tire. Put it back same way. Sixty seconds either way.

Notice the ends of the piano-wire tape surrounded by heavy black rubber in each foot of the tire. This piano-wire tape is an exclusive Goodyear feature. Its value is that the tighter you pump your tire the tighter this tape holds the tire on the rim.

No more tire pumping! With a Goodyear small steel air bottle, you can automatically inflate your tires in a few seconds to the exact pressure that is best for them. The bottle is carried in a box under the seat. Simply attach the tube from the bottle to the tire, open valve, and the tire will speedily inflate with pure air to the pressure required.

Any woman or child can inflate a tire in this way.

The Goodyear Air Bottle costs only $15 for the small size and $20 for the large size, filled with compressed air. The first cost is the only cost for two years. When the bottle is empty, simply turn it in at any of our stores and receive free a new bottle, ready charged. You exchange the empty bottle for a new charged one instantly—no waiting necessary. Each bottle will fully inflate four to thirty-five tires, according to their size. It will partially inflate many more.

And what is true of the taxicabs of New York is equally true of the taxicabs of Boston, of Washington—of practically every large Eastern city where taxicabs are used. Eight out of every ten of them are using Goodyear tires exclusively. Think of that, you who have blindly groped at the tire problem—you who have bought tires wholly by hearsay!

A hundred times more than can be explained in a page like this, you will find in our book, "How to Select an Auto Tire." Send for it now. It is free.

The Goodyear Tire & Rubber Co., Argo St., Akron, O.
I want to know more about tires. Send on your free book, "How to Select an Auto Tire."

*Name*_____

*Address*_____

GOODYEAR

The Goodyear Tire & Rubber Company, Arthur Street, Akron, O.

BRANCHES AND AGENCIES—Boston, Mass., 261 Dartmouth St.; Cincinnati, O., 317 E. 5th St.; Los Angeles, Cal., 932 S. Main St.; Philadelphia, Pa., 1402 Ridge Ave.; New York City, 64th St. & Broadway; San Francisco, Cal., 506 Golden Gate Ave.; Chicago, Ill., 80-82 Michigan Ave.; Cleveland, O., 2005 Euclid Ave.; Milwaukee, Wis., 188-192 8th St.; St. Louis, Mo., 3935-7 Olive St.; Buffalo, N. Y., 719 Main St.; Detroit, Mich., 251 Jefferson Ave.; Pittsburg, Pa., 5988 Centre Ave.; Omaha, Neb., 2020-22 Farnam St.; Washington, D. C., 1026 Connecticut Ave.; Atlanta, Ga., 90 N. Pryor St.; Louisville, Ky., 1049-51 Third St.; New Orleans, La., 706-16 Barrone St.; Memphis, Tenn., 181-5 Madison St.; Dallas, Tex., 111 N. Akard St.; Denver, Colo., 28 W. Colfax Ave.; Baltimore, Md., 991 Park Ave.; Kansas City, Mo., 16th & McGee Sts.

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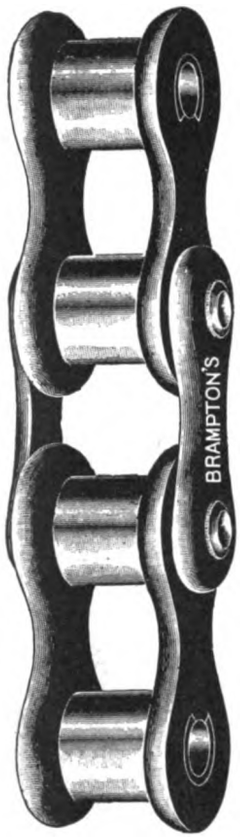


THE CELEBRATED

MUST BE SEEN

The Highest Art of

THE BRAMPTON CHAIN



The *strongest* chain in the world; made of *self-hardening steel* with large spun rivets, chamferred side plates (no sharp edges). All parts of this chain are polished and fit the sprockets (which are properly cut) without friction.

Imitation, What's the Definition?

All Brampton Chains are stamped with the name Brampton on each outside link; Beware of the imitation and get the genuine Brampton.

PRICES THE SAME AS OTHER CHAINS

American Size Brampton Roller Chain

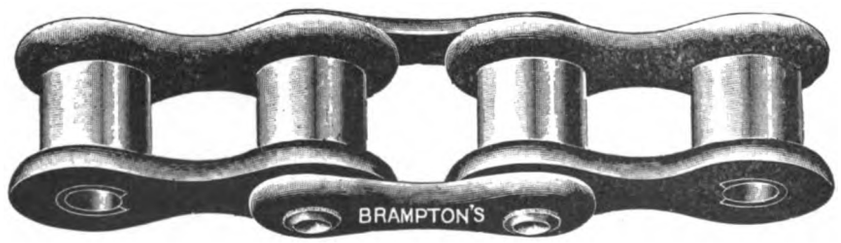
at American Chain Prices, *to fit all American Cars and Motorcycles.*

CAN BE PURCHASED FROM ALL JOBBERS

We are the Sole American Agents. Catalog on request.

CHAS. E. MILLER, Manufacturer, Jobber Exporter and Importer

PHILADELPHIA BOSTON BROOKLYN CLEVELAND



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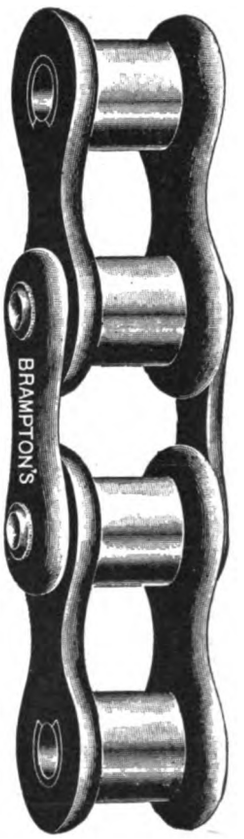
BRAMPTON CHAIN

Garden Show, Space No. 243
2nd Balcony, North Side

Motor Chain Construction

LARGE SALES

make it possible for us to import the CELEBRATED BRAMPTON CHAIN from England (paying freight and duty) and sell it at the same price at which the several other automobile chains are sold to manufacturers, jobbers, dealers and users.



Prices Being Equal What Would You Do?

The price being equal, it's presumable you want the best, and full value for your money. In such cases, the BRAMPTON fills the bill, and the prices are the same to manufacturers, jobbers, dealers and consumers as any other chain of equal size.

We carry in stock the BRAMPTON CHAINS to fit Foreign Cars—Mercedes, Panhard, Martini, Fiat, etc., etc.

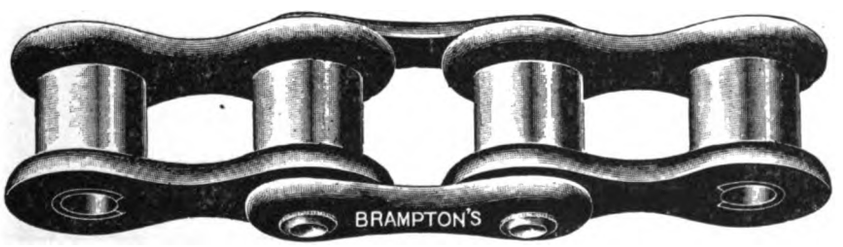
AND DEALERS OR ANY OF OUR BRANCHES

Agents Wanted in Unoccupied Territory.

HOME OFFICE

97-99-101 Reade Street, New York City

DETROIT BUFFALO 54th Street and Eighth Ave., NEW YORK CITY



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ANTIQUATED SPEEDOMETERS

with external odometers, with unequally spaced scales, having no correcting cam, with soldered parts and fitted with flexible shafts of the common wire type, are not to be compared with the beautifully finished, correctly designed, moderate priced instrument made by Stewart & Clark Mfg. Co.

All Stewart Speedometers

are fitted with our unit type flexible shaft and the famous swivel joint. Both instrument and shaft guaranteed for 5 years

GET OUR LITERATURE

Stewart & Clark Mfg. Company

509 Diversey Boulevard, Chicago, Ill., U. S. A.

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HAYNES

"Feels Like a Six!"



THE EXPERIENCED CHAUFFEUR who drives a 1909 Haynes for the first time becomes instantly conscious of a certain difference between the Haynes motor and other four cylinder engines. The common remark is "It feels like a six."

We accomplished this in the simplest possible way. Just the addition of an extra fly wheel at the front end of the motor. The balancing weight being thus distributed gives an engine that pulls better at slow speeds and more smoothly at high speeds. It adds to the flexibility of the motor and gives superior evenness of torque without increasing one particle the complication or the cost.

It is so like a six cylinder car that we determined not to manufacture the latter type since the additional complication could not be justified.

The Haynes for 1909 is practically a six cylinder for driving purposes, and a four cylinder in price and maintenance cost. No other four cylinder car will satisfy you after you have investigated the Haynes.

AGENTS: The above is one of the many facts about the Haynes which makes them the easiest first-class car on the market to sell.

Our responsibility is assured by the fact that we are the oldest manufacturers of automobiles in America.

Certain territory is open this year. Speak quick.

HAYNES AUTOMOBILE CO., Kokomo, Indiana

Oldest Automobile Manufacturers in America

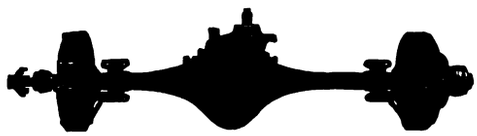
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NEW YORK, 1715 Broadway

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42 Highest Awards and Perfect Scores

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562—Floating Hub Type—Top View.



525—Fixed Hub Type.



Brake.



561 A—Fixed Hub Type—Front View.



561 B—Fixed Hub Type—Rear View.

TIMKEN

New One-Piece Pressed Steel Power Axle

¶ The new Timken Axles as shown in the illustrations herewith, is a one piece pressed steel form, shaped to give better than truss resistance to load, end thrust and breaking strains, and eliminate the vibration common to cast steel or forged axles of the built up type.

¶ The entire housing is a load bearing and gear encasing member in a single unit, clear and smooth, without angles or protruding parts, supports or braces, with nothing to vibrate, nothing to rattle, nothing to work loose, nothing to catch mud and easy to clean.

¶ The power unit (differential bearings and adjustments for same, pinion shaft and bearings, drive and pinion gears), is a compact unit that can be removed bodily from the axle case or housing, without taking down the axles or disturbing brake equipment, springs, hubs or bearings.

¶ The axle, complete with differential gear carrier, brakes and spring seats, is made in both clutch and fixed type hubs for cars weighing from 1,500 to 3,000 pounds empty, and 45 horsepower or less. See these new axles at the Timken exhibit at the Shows, or write direct for illustrated descriptive matter.

We will exhibit Madison Square Garden, January 16th-23rd; Chicago, February 6th-13th

THE TIMKEN ROLLER BEARING AXLE CO.

Canton, Ohio, U. S. A.

Branches, 10 East 31st Street, New York. 429 Wabash Avenue, Chicago.

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The extra trouble and expense we put

on

MORGAN & WRIGHT TIRES

before they leave the factory will take the place of the trouble and expense you have been accustomed to put on your tires when they were in service.

We attribute a large measure of the success of our tires to our system of inspection—starting with the testing of the pure Para gum and Sea Island cotton fabrics—continuing up thru the processes of compounding, frictioning and building—and ending only when the finished tire has been pounded, stretched, turned inside out and put thru every conceivable test that will develop imperfections if any are ever to develop.

You can materially reduce your car maintenance bills by letting us bear the expense of proving the quality of your tires.

And they cost no more than other brands.

MORGAN & WRIGHT, DETROIT

Branches, Agencies or Dealers Everywhere

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12-Passenger Pullman
For the profitable business of sight-seeing hotel work, summer and winter resort work, etc.



1-Ton Open Job
For all kinds of carting purposes.



1-Ton Panel Job
Suitable for dry goods and general delivery work.



The 5-Ton Truck
Built in 3, 4, 5 and 6 ton sizes suitable for



flour mills, breweries, lumber companies, coal companies and any line of business requiring a heavy-duty power wagon. ..

HERE is a proposition for the one best man in every city—for the broad-gauge business man or agent—a proposition full of opportunities—one which means more money for the agent during 1909 than ever in the past; namely **representing and selling**

Rapid Commercial Power Wagons

We want agents—hustling business getters—men with financial backing—not chauffeurs or demonstrators—and to the one in each locality who secures the agency for **Rapid Commercial Power Wagons,** we will put behind him one of the greatest selling and advertising campaigns ever put behind any commercial wagon proposition.

More money, more new plans, more legitimate aids will be given the agent for **Rapid Commercial Power Wagons** than ever before.

Write to-day for our agency proposition.

The RAPID Line for 1909

comprises models ranging from 1,000 pounds up to 6 tons, as follows: **Rapid Commercial Power Wagons** for any line of business in ½, 1, 1½, 2, 3, 4, 5 and 6-ton sizes.

Motive power: engines of the two-cylinder opposed 24 to 30 H.P. type, up to four cylinders, 60 H.P., vertical, heavy duty motors.

The Rapid line for 1909 offers the largest selection of models ever manufactured.

Therefore every user of one or more horses represents a prospective buyer of **Rapid Commercial Power Wagons.**

There are no theories represented in the Nineteen Hundred Nine **Rapid Commercial Power Wagons.** All mechanical and other details have been proved correct by over ten years of actual service in the hands of hundreds of users in over fifty different lines of business.

We have spent **over a quarter-million dollars** to bring **Rapid Commercial Power Wagons** up to their present state of perfection and efficiency.

The agent who handles **Rapid Commercial Power Wagons** will have a line that can back him up—a line that has **"made good"**—one that has met the requirements of commercial motor wagon practice, and needs no apologies.

A word about the **Rapid Motor Vehicle Company:** It is the largest and oldest in the commercial car business—and makes nothing but Rapid Commercial Power Wagons, which are **"BUILT FOR BUSINESS."**

The agent who "ties up" to our organization gets backing which means a great deal, not only in influence, but in protection and fair treatment; a factory which can stand back of its product with a guarantee that means just what it says and a factory which helps its agents in every way possible.

Just to remind you—write to-day.

See us at the New York, Boston and Chicago Shows.

Rapid Motor Vehicle Company

113 Rapid Street, Pontiac, Michigan, U. S. A.

Members American Motor Car Manufacturers' Association.

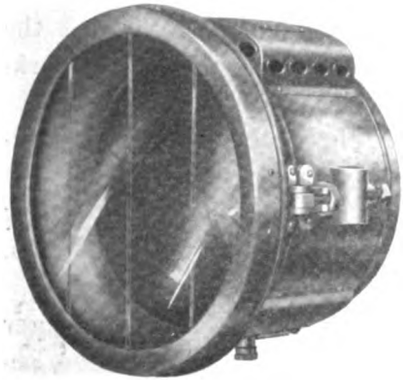
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Motor SOLAR Lamps

Solar Lamps are so far superior to every other lamp, that they are in a class by themselves. They are acknowledged to be the Standard Automobile Lamp of the World. They provide perfect light at all times—

POWERFUL, STEADY, PENETRATING RAYS

Uniform equipment on a car is necessary. It is an indication of care, knowledge and skill in selection. A high-class car is reduced in efficiency—is handicapped with cheap lamps. A medium priced car is bettered by good lamps and a cheap car is enhanced in value 50% by the use of good lamps—all are advanced to the maximum of efficiency by using the best lamps—**SOLAR LAMPS.**



SOLAR LENS MIRROR SEARCHLIGHT
—958-A, 8″ Lens Mirror, $15.00.

Prices

Gas Headlights	from $4.50 to $62.50 each
Electric Headlights	from $8.75 to $15.00 each
Generators	from $4.00 to $12.00 each
Oil Side Lamps	from $7.50 to $22.00 pair
Electric Side Lamps	from $9.00 to $21.00 pair
Oil Tail Lamps	from $3.50 to $7.50 each
Electric Tail Lamps	from $3.75 to $6.00 each



SOLAR LENS MIRROR PROJECTOR—898, 8″ Lens Mirror. Each $25.00.

SEE OUR EXHIBIT AT THE MADISON SQUARE GARDEN SHOW.

BADGER BRASS MANUFACTURING CO.

TWO FACTORIES:

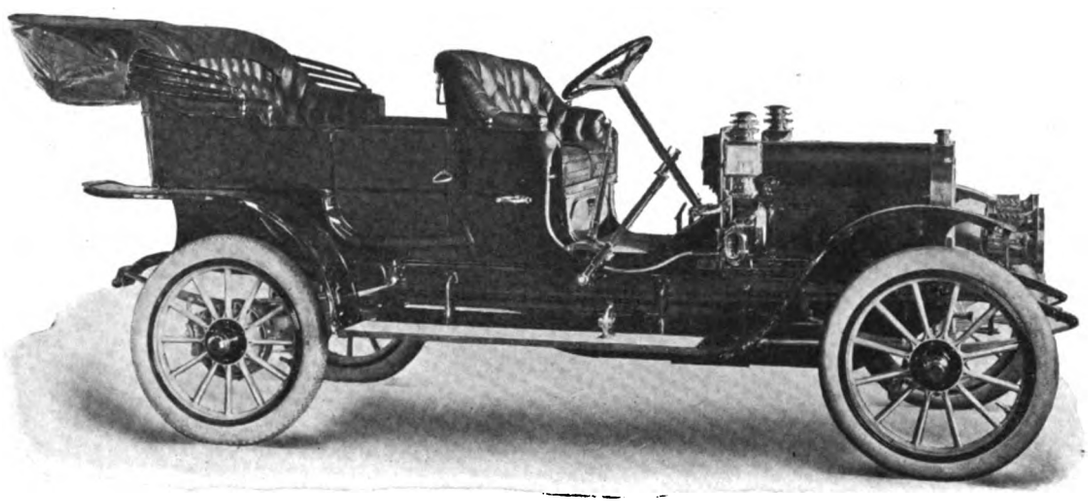
437 Eleventh Avenue, New York **Kenosha, Wisconsin**

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THE SELDEN CAR

MADE BY

"The Father of Them All"



One Price, $2,000. F. O. B. Rochester.

TOURING CAR, ROADSTER, TOY TONNEAU

A genuinely good car cannot be made and sold for less than $2,000. By this we mean a car like the Selden, containing nothing but the best of materials, workmanship and finish. A car that the manufacturer can stand behind and guarantee for at least a year against any imperfections in workmanship or material.

We buy only the best materials, employ only skilled labor and pay particular attention to details and finish, thereby producing a strictly high-grade car at the lowest possible price.

The up-keep and maintenance of a medium-priced car like the Selden is within the reach of any man of moderate means and the value of the car does not depreciate like that of the lower priced cars. This is the point to be considered by every purchaser.

The Selden Car is a 4-cylinder 28-30 horsepower (developing 37 horsepower) five passenger Touring Car or three passenger Roadster, with 114-inch wheel base, 34-inch wheels, shaft drive, selective control, pressed steel frame, metal body, fully equipped.

Superb riding, roomy tonneau, luxurious upholstery, smooth running, great hill-climber, flexible and easily handled, economical in maintenance and up-keep, fine finish, stylish and attractive.

THE COMING CAR OF MODERATE PRICE

Catalog and Agency proposition upon request. Agencies wanted everywhere.

We will exhibit at Madison Square Garden Show.

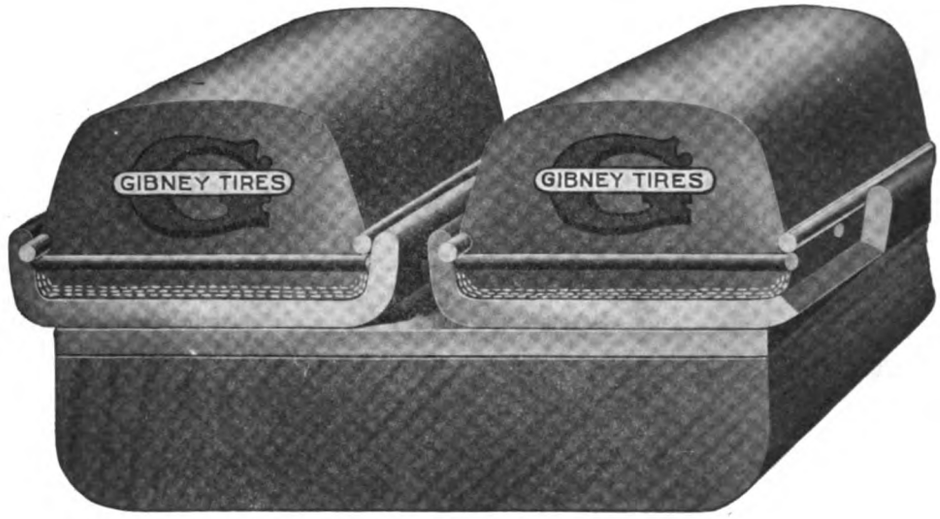
SELDEN MOTOR VEHICLE COMPANY

GEO. B. SELDEN, Pres. Members Association Licensed Automobile Manufacturers. ROCHESTER, N. Y.

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GIBNEY SOLID TIRES

For Commercial Vehicles and Carriages



Twin Solid Tire

The Tires for Long Wear, Hard Service, All-Round Economy

They are strong enough for the heaviest commercial truck or bus, yet resilient enough to take all the jolts and save the vehicles.

Made with the greatest possible percentage of pure Para rubber, they are without question the superior of any solid tire in the world.

The marvelous growth in sales of Gibney tires is solely attributable to the fact that they have given longer service and greater satisfaction than any tire on the market.

READY FOR DELIVERY
BECAUSE WE MAKE THEM

Distributors for CONTINENTAL "Low Cost per Mile" TIRES
Also IMPORTERS and JOBBERS of AUTO ACCESSORIES

JAMES L. GIBNEY & BRO.

211-13 North Broad Street **PHILADELPHIA, U. S. A.**

Agents Wanted Everywhere

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Constant Accuracy At All Speeds!

JONES SPEEDOMETER

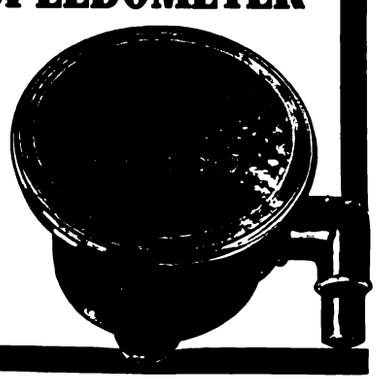
is the most accurate speed-indicator obtainable. This was proven when the Jones won the R. A. C. Gold Medal for ACCURACY, defeating ALL other instruments entered. The accuracy of the Jones is its strongest recommendation—that is why it has been officially adopted by the police of all the larger cities; that is why it is used by the leading race-drivers; that is why it is found on the greater majority of cars the world over. It responds to every change of speed from 1 to 100 miles.

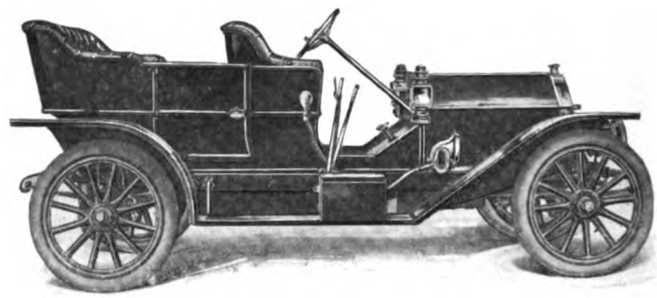
See our exhibit at Madison Square Garden.

THE JONES SPEEDOMETER

76th St. & Broadway
NEW YORK

Chicago, 1421 Michigan Ave.; Philadelphia, 259 No. Broad St.; Boston, 109 Massachusetts Ave.; Cleveland, 1841 Euclid Ave.; Los Angeles, 930 S. Main St.; Hartford, 284 Trumbull St.; San Francisco, 544 Golden Gate Ave.; Detroit, 247 Jefferson Ave.; Baltimore, 26 Franklin Bldg., St. Louis, 4630 Olive St.





INTER-STATE TOURING CAR, $1,750.

The Inter-State

THE INTER-STATE is a new car, but its designers and builders are **not** new. It is a car of proven worth in every detail—representing the **highest known superiority** in automobile design and construction. If there were any way to make a **better** car we would make the INTER-STATE THAT WAY.

Every part of the INTER-STATE is there for good reason—best service. One of the many superior features of the INTER-STATE is the transmission system and the method of its hanging.

The transmission proper is the three-speed selective type and reverse, with vanadium steel gears. We build the selective mechanism inside the transmission case, insuring thorough and constant lubrication, and combine the clutch (disc) and transmission in the same case—the clutch being in a separate compartment—all mounted rigidly on the end of the torsion tube. The weight of the transmission and the driving force of the rear axle are taken on a large ball and socket joint supported from a rigid cross-bar mounted on the frame just back of the motor. The transmission, the rear axle and foot levers are complete as a unit before being installed. We unite the gear shifting mechanism to the hand levers by our own patented device, which gives absolute reliability under all conditions.

This system of combining the transmission and the clutch gives us the simplest and best three-speed selective type car made, **with greatest durability.**

The same high standard of service quality is maintained throughout the INTER-STATE. It is a **permanent enduring** car at a price but little higher than the price of temporary cars. The INTER-STATE complete—with Eisemann Magneto—at $1,750 is the biggest value on the 1909 market. We want you to see this car before you think of spending your money for a **cheap** car, or even for a higher priced car.

At the Chicago Show— The full line of INTER-STATE automobiles—including Standard Touring Car, Demi-Tonneau, Double Rumble Roadster, Single Rumble Roadster, and Tourabout—will be exhibited at the Coliseum, Chicago, February 6-13.

Dealers and agents will appreciate the opportunities opened to them by the INTER-STATE. Write for our proposition.

The Inter-State Automobile Co.

126 Willard St., **Muncie, Ind.**

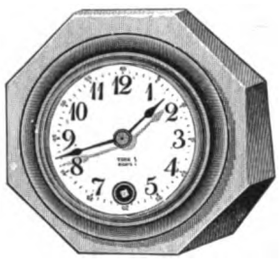
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A Few of Our Imported and Domestic Specialties

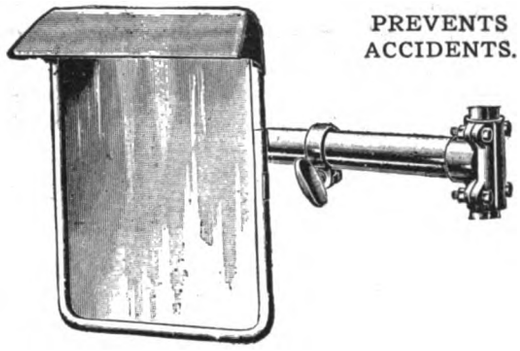


THE YORK CLOCK



The very latest design. High-grade in every respect. Has no projections or obstructions that can be broken off. Will run eight days. Has heavy polished brass case. Dial measures 2¾"
Price $7.50

THE ARGUS MIRROR



See What's Coming!

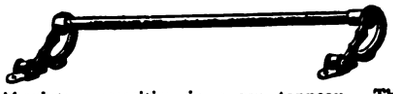
If you could do this, half the accidents would be avoided. With the Argus Imported Dash Mirror (protected by a hood from the sun's rays or rain) you have a clear view of the road behind without turning the head. Adjustable to any position.
Price, less shield..... $7.50
Price, with shield $9.00

THE SAVOY CLOCK



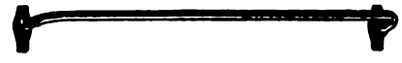
Specially designed to resist all jars and shocks. Has elegant quick-train movement. Dial is a French Porcelain, measuring 2¼". Dust, rain and thief proof. Will run eight days.
Price $10.00

FOOT RESTS



Absolute necessities in every tonneau. They enable the occupants to brace themselves in a comfortable position and prevent the accidental scratching and damaging of the body of the car.
Price, 32 in. long $2.50

ROBE RAILS



Keeps robes and wraps from being crushed or soiled in bottom of car. Made of heavy brass tubing, highly polished,
Stationary, 24 in. ..... $ .85
Adjustable folding rail 2.50

SPARK PLUGS



We carry a large stock of every imported and domestic plug on the market.
Renault Spark Plug..... $2.50
A. V. Magneto Spark Plug..... 2.00
Bosch Spark Plug 2.00
Motorcycle Spark Plug ..... .75
and many others.

PIRELLI CABLE



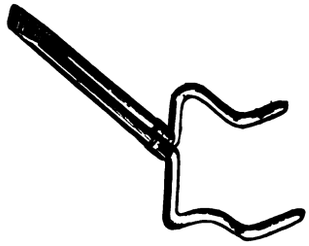
That wonderful Italian cable that is used by every well-known auto manufacturer in this and other countries. Ask us to send you our sample card showing the different sizes and prices, made with rubber and cambric covers.

STEERING PILLAR LAMP



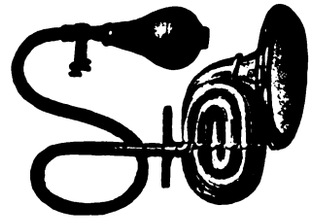
This lamp enables a driver to direct a powerful beam of light to any part of a dash board, enabling him to watch any of the indicators on the dash.
Price $6.00

FORK TIRE LEVER



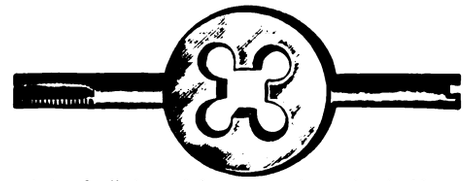
A new style fork lever tire tool for removing and replacing security lugs and tubes in tires. Equipped with rollers, which prevent damaging tire while removing.
Price ..... 50 cents

BLANCHARD HORNS



THEY HAVE THE SOUND that made imported horns famous. There are over twenty-one different styles in up-to-date designs. Let us send you our Blanchard Horn catalogue.

ROYAL VALVE TAP AND DIE



A handy little tool for unscrewing valve insides and cutting new threads on the outside or inside of valve. Should be in every tool kit.
Price ..... 25 cents

The dealer who desires to handle the BEST line of Automobile Specialties, would do well to investigate our line of splendid and profitable goods. Our special Show Catalogue will be sent on request.

THE MOTOR CAR EQUIPMENT CO. 1727 Broadway 55 Warren St. New York

Manufacturers, Importers and Wholesalers of Automobile Accessories.

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Long Life is what every motorist wants in his car

If it is a

CORBIN

imported ball bearings, used wherever practical, assure him of this result. Ask owners of Corbin Cars how they stand up in every day use or write for our testimonial booklet.

THE CORBIN MOTOR VEHICLE CORPORATION, New Britain, Conn.

Members Association Licensed Automobile Manufacturers.

Will exhibit at Madison Square Garden Show, January 16-23, 1909.

IT WILL PAY YOU TO INVESTIGATE

THE 1909 National

THE LINE IS BETTER AND MORE COMPLETE THAN EVER

Model 9-35, 4-cyl., 4¾ x 4¾,	5-passenger Touring Car	$2,750
Model 9-40, 4-cyl., 5 x 5,	5-passenger Touring Car	$3,700
Model 9-50, 6-cyl., 4½ x 4¾,	7-passenger Touring Car	$4,200
Model 9-60, 6-cyl., 5 x 5,	7-passenger Touring Car	$5,000

Each National has the well-known National Ball-bearing Motor with new crank case oiler, two ignition systems (Bosch Magneto and Storage Battery) and all other tried and proven features of high grade modern motor car construction. Any of the above models can be furnished with Baby Tonneau body or as a Roadster.

Write for distributors terms and full particulars.

NATIONAL MOTOR VEHICLE CO., 1007 East Twenty-Second St. INDIANAPOLIS, IND.

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Three Mathesons Win

FIRST, THIRD and FOURTH PLACES

in capturing MacDONALD & CAMPBELL $600 Cup

300 Miles Mid-Winter Contest

FROM PHILADELPHIA TO WILKESBARRE AND RETURN

Over the Pocono Mountains, making also the highest team score against a field of

32 CONTESTANTS

including these cars: 2 Peerless, 1 Stearns, 1 Studebaker, 2 Cadillacs, 1 Acme, 3 Stoddard-Daytons, 1 Elmore, 2 Franklins, 3 Mitchells, 2 Wintons, 3 Oldsmobiles, 2 Maxwells, 2 Knoxes, 2 Ramblers, 1 Buick, 1 Premier.

Only three of the 32 cars had perfect time scores and these three were Mathesons.

No. 7 Matheson Wins First Place

For MacDonald & Campbell $600 Cup

This car, owned and entered by Mr. F. M. Kirby, Wilkesbarre, Pa., and driven by Mr. Kirby's chauffeur, William Miller, is a regular stock Matheson touring car which Mr. Kirby had driven over 7,000 miles prior to entering it in the contest. Actual running time, 5 hours and 31 minutes, breaking all previous records.

No. 15 Matheson Wins Third Place

This car, entered and driven by Mr. Ross Anderson, Wilkesbarre, Pa., was a regular stock Matheson touring car which had covered 18,000 miles in service prior to entering this contest. Actual running time, 6 hours and 4 minutes; also new record time.

No. 6 Matheson Wins Fourth Place

This car, entered by ourselves, was a regular stock Matheson touring car which had covered over 12,000 miles in service prior to entering this contest. Actual running time, 5 hours and 24 minutes, the fastest time ever made by any car over this course, Summer or Winter.

ALL THREE MATHESONS FINISHED WITH ABSOLUTELY PERFECT ROAD SCORES, MAKING EVERY CONTROL ON TIME.

Only one stop was made on account of tire trouble, proving our claim that the Matheson Car, due to its beautiful balance, chain drive and multiple disc clutch, is the easiest car on tires. Our customers usually cover from 5,000 to 10,000 miles on their original tires.

THE CONCLUSION: **The Matheson Car has proved in every endurance run it has entered that it is far and away the most reliable and serviceable as well as the most economical and fastest touring car in all the world**

AND THIS IS ALSO OUR GUARANTY

MATHESON AUTOMOBILE COMPANY

1886-1888 BROADWAY, Cor. 62d St. Member A. L. A. M. **NEW YORK CITY**

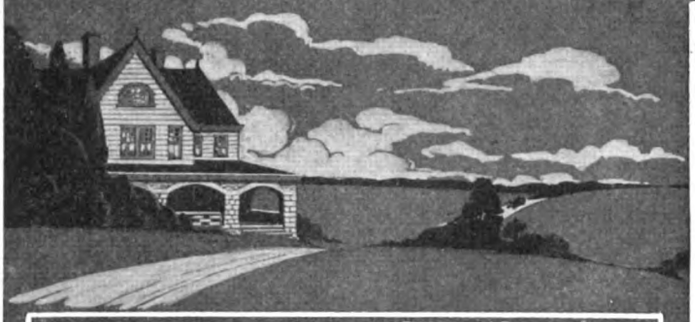
We exhibit only at Madison Square Garden Show, January 16-23, 1909. Demonstrations by Appointment.

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THE MARMON

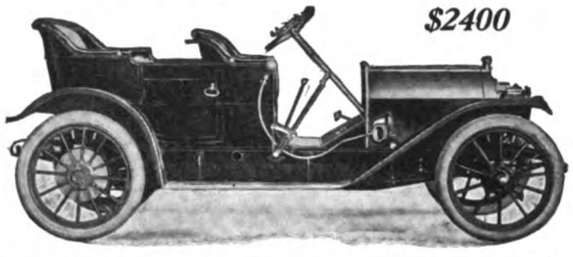
"A Mechanical Masterpiece"





Marmon "Thirty-Two"

$2400



This Car Represents Economy—Not Cheapness!

Over and above the fact that this is a car that will live, that you can depend upon and be proud to own—

It is a car offering a positive, proven value which you can get right down to brass tacks and figure out.

Figure up its equipment, note that its design includes all the best things in motordom, take into consideration Marmon workmanship, materials and construction methods, and then compare it with anything on wheels at $3,500 or less. Send for the detailed specifications.

Genuine Krupp and Chrome Nickel Steels used for important parts. Bosch magneto and battery—dual system. Hess-Bright ball bearings. Transmission and rear axle in one unit. Large brakes. Marmon oiling system. Weight, 2,100 lbs. 32-40 H. P. Tires, 34x4, all around. Complete equipment. Touring Car, Roadster, Four-Passenger Suburban, Coupe, or Limousine Town Car.

The superb Marmon "Fifty" (Seven-Passenger Body), $3,750.

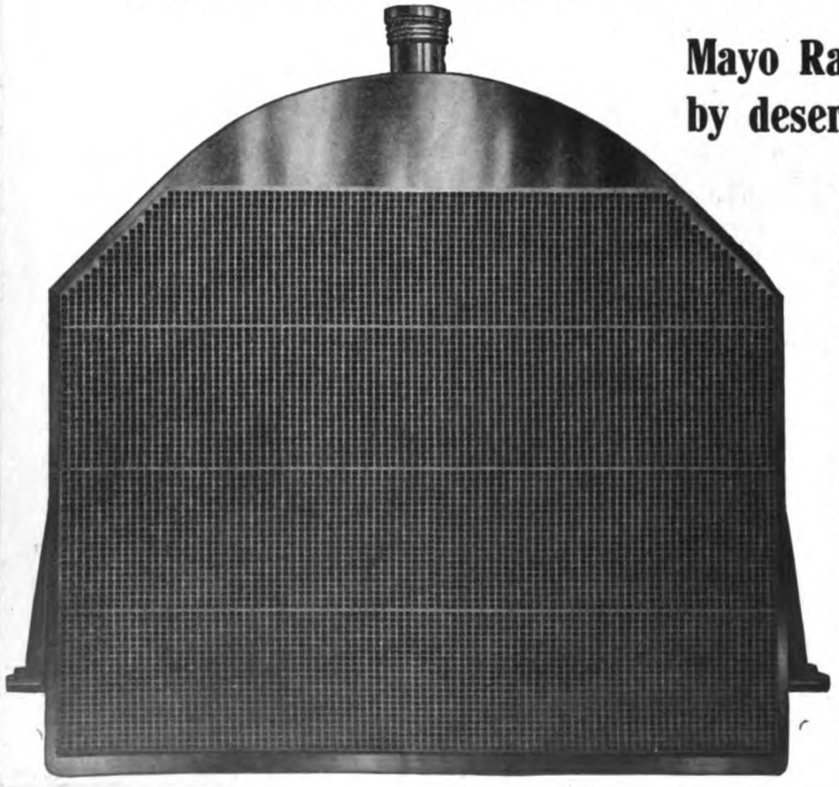
Nordyke & Marmon Co. (Estab. 1851) Indianapolis, Ind.

Standard Mfrs. A. M. C. M. A.

At Chicago Show, February 6-13.

The Easiest Riding Car In The World

'Tis not in mortals to command success, but we'll do more—deserve it.



Mayo Radiators have achieved success by deserving it, and in no other way.

¶ Therefore that success is presumably of the permanent and abiding kind.

¶ Price is the cause of the absence of MAYO RADIATORS from cheap cars.

¶ Quality is the reason for the presence of MAYO RADIATORS on most of the good cars.

¶ The only argument against MAYO RADIATORS is their price.

¶ Every other consideration dictates their use.

¶ MAYO RADIATORS combine sound mechanical principles, exact design, construction and workmanship, together with graceful appearance and perfect finish; in short, all the good qualities that go to make the ideal radiator.

¶ MAYO RADIATORS are stamped with the hallmark of class.

¶ MAYO RADIATORS are really the thoroughbreds of the radiator world.

¶ MAYO RADIATORS are made in the kind of a factory that befits them and by the MAYO RADIATOR COMPANY, at New Haven, Connecticut.

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Tremendous Opportunity For The Sale of Electric Carriages

Electric carriages have now reached a high state of efficiency. Today anyone who maintains a team of horses may easily be shown that, with all its other marked advantages, he can get more miles of travel, more safety, and more positive dependability, at less expense, with a

Waverley

The World's Standard Electric Carriage

Maintained at a lower cost than any other automobile.

In beauty of appearance, in durability, in dependability of service, in economy, and in radius of travel, no other electric has ever approached the Waverley. It is the logical first choice with the dealers who prosper.



Four Passenger Coupe

By detaching the Removable Coupe Top, this car is quickly converted into a Victoria Phaeton, with Leather Top.

The Waverley Co., Indianapolis, Ind.

At Madison Sq. Garden, New York, January 16-23

At Coliseum, Chicago, February 6-13

The 1909

Overland Catalog

Is Now Ready for Distribution

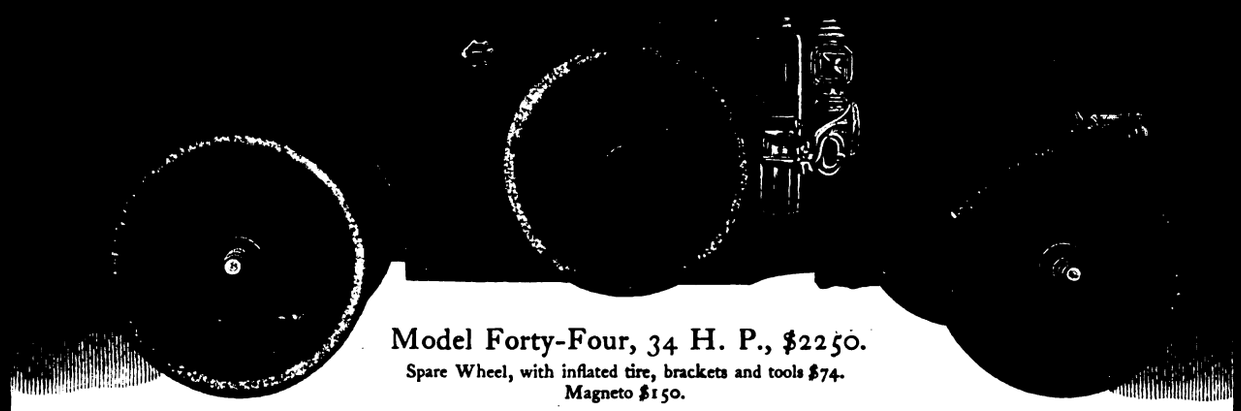
It contains a full and exhaustive description, profusely illustrated, of the most wonderful line of automobiles ever placed on the American market, consisting of

4 and 6 Cylinder Roadsters, Touring Cars and Enclosed Cars. $1.250-$2.250

WRITE FOR A COPY K.

OVERLAND AUTOMOBILE CO., Indianapolis, Indiana

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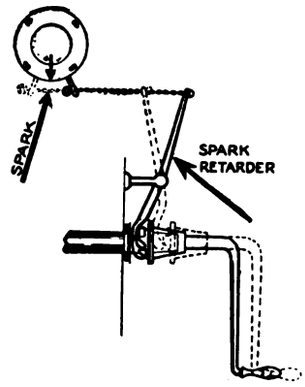


Model Forty-Four, 34 H. P., $2250.
Spare Wheel, with inflated tire, brackets and tools $74.
Magneto $150.

THE SAFETY SPARK RETARDER

There is absolutely no danger in cranking a Rambler when properly adjusted. The starting crank then cannot engage until the spark has been automatically retarded.

Every one who has had the unpleasant experience of a premature spark in starting an automobile will appreciate the Rambler safety starting device. This prevents an explosion ahead of center, even though the operator forgets to retard the spark.



You cannot engage the lug on the shaft with a tooth on the starting crank until the spark-retarder lever has moved from the position of the dotted line to the position shown, thus retarding the spark.

Rambler

The Car with the Offset Crank Shaft

Seven passenger model, forty-five horse power with offset crank shaft, $2500. Other models, $1150 to $2500. Write for catalog describing in detail Rambler offset crank shaft, Spare Wheel, straight line drive and other exclusive features of the new Rambler models.

THE CAR OF STEADY SERVICE

Thomas B. Jeffery & Company, Main Office and Factory, Kenosha, Wis.

Branches and Distributing Agencies:

Chicago, Milwaukee, Boston, New York, San Francisco. Representatives in all leading cities.

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, January 14, 1909. No. 16

TIRE LUGS NOT INFRINGEMENTS

Persistent Efforts to Stretch an Old Patent —Would Have Had Wide Effect if Successful.

A fight to bring the use of almost all forms of tire lugs under the terms of a patent held by the Boston Woven Hose & Rubber Co., of Boston, Mass., has been waged by that concern for some time, the litigation taking the form of an action against the Pennsylvania Rubber Co., but the latter company, in a decision just given publicity, has won a victory not only for itself but for tire manufacturers in general who employ lugs on any of their products. Taking an appeal from an unfavorable decision in the Circuit court of the United States for the district of Massachusetts, the Boston Woven Hose & Rubber Co. carried the case to the Circuit Court of Appeals, in an endeavor to establish its claim that the usual forms of tire lugs come under the specifications of the Schrader patent, No. 466,577, which it owns, but the court, while practically indicating that had the patent been previously worked under it might have been stretched to cover the situation, applied the rule that in a suit for infringement a patent for an alleged invention of which no practical use has been made is not entitled to the same breadth of construction which might be warranted by its proved usefulness.

Only the second claim of the patent was in issue, reading as follows: "2: The combination of the U-shaped tire, the felly, an inflated tube confined by said tire, and an internal clamping device, between which and the felly the U-shaped tire is secured, substantially as described." This was held by the complainant to cover such devices as lugs and staybolts. The court, consisting of Putnam and Lowell, circuit judges, and Aldrich, district judge, decided otherwise.

In a formal decision by Judge Putnam, it was pointed out that the device described in the patent is continuous around the entire circumference of the wheel and so arranged that the parts can be drawn together, rigidly fastening the tire to the felly. This the court regarded as "a positive element in the complainant's device which is lacking in that of the respondent, so that it is impossible to charge infringement."

"In lieu of this continuous clamping device," the decision declared, "the respondent relies on such construction of the U-shaped tire that, in connection with the inflation to which it may be subject in the respondent's method of construction, it holds itself in place without the continuous band. It is true that at certain intervals, following each other around the respondent's wheel, he has staybolts, or lugs, extending transversely from one of the horseshoe ends of the U-shaped tire to the other, which reenforces the tendency of the tire to maintain itself in position. It cannot be doubted that, under some conditions with reference to the invention of the character involved here, the field of equivalents would be so broad that these staybolts might be held to infringe; but, under the circumstances which we have explained, we are compelled to agree with the conclusion reached by the Circuit court."

Patent No. 466,577 was issued January 5, 1892, to Frank Schrader, of Philadelphia, Pa., and is not to be confused with patents in any way connected with the construction and use of the Schrader valves.

Timken Takes a Detroit Factory.

By the purchase of a large factory in Detroit, Mich., which is to be used exclusively for the manufacture of automobile front and rear axles, the Timken Roller Bearing Axle Co., of Canton, O., has expanded its production facilities to meet the increasing demand. The new plant, on Clark avenue, occupies about three acres and was formerly occupied by the Standard Sanitary Mfg. Co. Devoted entirely to the making of Timken roller bearing axles, it will probably be the largest factory of its kind in the world. The company's plant at Canton will be retined.

LICENSED MAKERS CUT A MELON

Dividend of $50,000 for the Members of the Association—Clifton Talks of Conditions Abroad.

Melon cutting was the chief ceremony at the meeting of the Association of Licensed Automobile Manufacturers board members, which was held in New York on the 7th inst. From the reserve fund of the association the sum of $50,000 was drawn, for distribution as a dividend to the concerns constituting the membership. The balance of the session was devoted to reports on show and tariff matters, and to remarks on the European situation by recent visitors abroad who as manufacturers themselves were able to observe trade conditions clearly. The report of the show committee, by its chairman, Col. Pope, indicated that all the preparatory work had been done absolutely to schedule and that all is in readiness for the affair. For the tariff committee of the Associate Automobile Manufacturers, Chairman Joy reported that the automobile tariff brief submitted recently to the Ways and Means Committee of the Lower House of Congress had been well received. Plans have been made to give the brief wide distribution throughout the country.

In addressing the members of the board concerning European trade and conditions, Colonel Clifton, the presiding officer, said that there had been a distinct falling off in the demand for machines abroad. With a few exceptions, he said, the foreign factories are relatively inactive, while positive apathy was indicated at the Olympia show in London and at the Paris Salon, the exhibitors not even putting their best foot forward. Companies which two years ago were flooded with business are now doing comparatively little, and deferred fiscal reports are the order of the day. In conclusion he declared that scarcely a wheel has been turned in some factories which have only recently

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been rushed to completion. Following Colonel Clifton, another returned member stated that in France at the present time on the typical roads out of Paris low-powered cars are vastly more numerous than high powered machines. In England, on the contrary, the high powered cars predominate, a possible reason being suggested in the fact that the crooked roads require cars that can be quickly accelerated. He also observed that the roads in France, which were not built originally for automobiles, have deteriorated materially.

What Americans Learned at Paris Salon.

European chassis and body design for this year, as revealed at the foreign exhibitions, were given close scrutiny by many American designers, manufacturers and body makers, respectively. Imitation of American construction was discovered by J. D. Maxwell, of the Maxwell-Briscoe Motor Co., on his tour of the automobile factories followed by a visit to the Paris show. He is also of the opinion that the foreign makers have not yet mastered the production of automobiles in large quantities.

"Everyone who has followed foreign practice knows that the planetary transmission was rather sniffed at abroad," he says; "yet this year at the Paris Salon several concerns use it for the first time on light machines—a type of transmission which is entirely American and one that we have used on runabouts in this country with success for years. The shaft drive, which has been popular on this side for five years, is slowly displacing the chain abroad. I found only two factories running at full capacity, the majority having largely reduced their production. In the cars themselves the Paris Salon was a great disappointment so far as advanced designing features are concerned."

Hinsdale Smith, president of the Springfield Metal Body Co., of Springfield, Mass., and technically qualified to judge, found no radical body innovations either at the Paris show or at the factories. Such new ideas as were disclosed were in the nature of detail refinements and improvements, many of them of such worth, however, that they will be incorporated in his product in the future.

Souther to be Consulting Engineer.

Supplementing its established testing department, the Standard Roller Bearing Co., of Philadelphia, Pa., has secured Henry Souther, of Hartford, Conn., to devote a large measure of his time to its interests as consulting engineer. The arrangement is in connection with extensive further plans for the future betterment of the company's products.

Burton Must Not Use Mosler's Names.

An injunction was granted to the A. R. Mosler Co., of New York City, against Ralph Burton, of Peru, Ind., in the United States Circuit court at Indianapolis, Ind., on the 2d inst. The injunction restrains the defendant from using any portion of the words "Spitfire" or "Mosler" on spark plugs, porcelains or the boxes in which they are packed, and also enjoins his agents and salesmen from disposing of any of his products so labeled. Burton is also in difficulties with the Rajah Auto Supply Co., of Bloomfield, N. J., and with C. A. Mezger, of New York, in similar cases.

Walter Renamed Roebling-Planche.

As a sequel to some widely-heralded private but sensational speed trials of a new car, the Walter Automobile Co., of New Jersey, located at Trenton, is to change its name to the Roebling-Planche Co. The Roebling part of the name represents the financial interests which have backed the concern while Planche is the designer of the three new models which the company will make for the coming season. Heading the list is a racing model, listed at $10,000 and guaranteed to give a speed of 105 miles per hour. The other two models are a 20-30 tonneau or laundau at $3,500, and a 50 horsepower model to sell at $5,000 and supplied in touring car or runabout body.

British Visitors Coming Across.

Albert Brown, managing director of Brown Brothers, Ltd., London, has sailed for one of his periodical visits to this country and will arrive the latter part of this week. While in New York he will make his headquarters at the Hoffman House. His firm already handles Gabriel horns and other American motor specialties and he will on this visit be glad to see any novelties likely to be of use for the British market. Another British visitor will be George W. Houck, of London, who promises to be an early arrival.

Reo Branch Factory for Canada.

Another American automobile manufacturer has started a branch factory in Canada in preparation for the broadening of the Canadian market. The Reo Motor Car Co., of Lansing, Mich., has secured extensive manufacturing space in the Medbury building in Windsor, Ont., the small city opposite Detroit, Mich. Work is being pushed rapidly with a view to having the factory in full operation in a few weeks.

Continental Now Wholly American.

All the German holdings in the Continental Caoutchouc Co., of New York City, have been purchased by American stockholders, thus eliminating the Hanover interests entirely. As a result, all Continental tires and materials will hereafter be manufactured and marketed by American interests only.

Auto-Car Plans Big New Factory.

The Auto-Car Equipment Co., of Buffalo, N. Y., makers of electric trucks, have purchased a tract of 12 acres at Elmwood and Hertel streets, Buffalo, and have completed plans for a new factory. The main building will be two stories high, of factory construction using brick, steel and concrete. It will cost $35,000 and will be supplemented by several minor buildings.

Toledo Motor Buys Pope Motor Car.

The Toledo Motor Co., all the capital stock of which is owned by the new Pope Mfg. Co., of Hartford, Conn., and of which A. L. Pope is the president, has purchased the property and assets of the Pope Motor Car Co., of Toledo, O. The sale was made absolute on the 11th inst. by Judge Robert W. Taylor of the Federal court. The receivers of the old company were directed by the court to pay in full all the approved claims of the creditors and the checks were accordingly mailed this week. Upon completing the final details of their work the receivers will be discharged.

At the hearing no opposition to the sale was offered either by creditors or other parties in interest. The Toledo Motor Co. was directed to notify all creditors of the old company having unproved claims that the latter must be filed by February 10th in order to be heard for proof before a referee in Cleveland, O., on February 15th.

E. V. Receivers Report Business Activity.

Receivers Barrett and Nuckols of the Electric Vehicle Co., of Hartford, Conn., in their report for December, which has just been filed with the court, indicate great activity at the company's factory by a pay roll for the month amounting to $29,518.52, while purchases of material amounting to $26,283.65 are recorded. The receipts for the month were $41,499.11, while the disbursements were $55,122.46, leaving a cash balance of $141,812 including the $90,000 recently deposited in New York for the benefit of the creditors.

Oscar Lear Increases Capital to $250,000.

Increased capital for the Oscar Lear Automobile Co., of Springfield, O., was decided upon at a meeting of the stockholders on the 4th inst., in accordance with the recommendations of a special committee. The capitalization will therefore be increased from $200,000 to $250,000, the additional stock being in preferred shares. The directors elected at the meeting were H. S. Bradley, H. J. Rober, John J. Hoppes, Arthur Worthington and Oscar Lear.

American Auto to Vote on Dissolution.

Stockholders of the American Auto Co. have been called to meet on February 1 in the American Trust building, Cleveland, O. The meeting is to vote on the dissolution of the corporation, the surrender of the charter and the distribution of the assets.

Engineers to Have Their Own Office.

The Society of Automobile Engineers has decided to open an office of its own in New York City. The new headquarters will be in charge of Charles B. Hayward, the secretary, who has severed his journalistic connection.

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WHAT CONSTITUTES THE JOBBER

Existing Tangles in His Relations with Manufacturer and Dealer—Representative Jobbers Express Views.

In the scramble for automobile accessory business there has been a slap-dash, catch-as-catch-can sort of spirit on the part of both the manufacturers and the jobbers that has mussed the situation considerably and has created some tangles that appear to need straightening out. The manufacturers of accessories are accused of being too free with jobbers' prices in placing goods with retail dealers, while the manufacturers declare that jobbers are becoming retailers and retailers turning into jobbers in such a way that it is almost impossible to tell who really is a jobber.

"Quantity makes the price," according to the sales departments of several of the accessory people, and they make no bothersome scrutiny into the exact jobbing status of the customer provided they are sure he can pay for the goods. It is a case of a "bird in the hand" with them, and no substantial quantity orders will be turned down or kept waiting in order to find out whether the buyer is going to sell the goods directly at retail or to dealers. There are people ready to tell them that they are all wrong, but they confess that the finer ethics of dealing with the jobbing trade have not brought them any money as yet and that they are going to make sure of their orders as they go along and can get them.

Other makers have a half-hearted respect for the trade recognition of a difference between a jobber and a retail dealer. If a dealer seems a likely customer for even a fair quantity and he insists upon the "lowest possible price," he is asked whether or not he is a jobber. Very likely he is bright enough to declare himself all kinds of a jobber, "doing business throughout this territory." Nothing more is necessary, and the eager salesman for the manufacturer will come down to jobbers' bed-rock to land the order. If, however, the dealer is not brazen enough to assert himself as a jobber, he may be helped along by the manufacturer's salesman with some such suggestion as "Well, you could job a quantity of these through your territory if you wanted to, couldn't you?" Naturally he could. In that case the manufacturer will do what he can for him as a jobber, without sticking for the mere technicality of the customer actually doing a jobbing business.

Then there are the busy makers who intend to keep the lines between their dealers' and jobbers' prices quite distinct, but who are easily bluffed, even to the extent of filling small orders at the jobbers' prices.

The would-be customer writes in and says that he is a jobber. His letterhead also proclaims the fact. The manufacturer assumes that it is all true, and cheerfully fills an order for 1-12 dozen at the jobbers' price, without stopping to investigate anything except the credit side of the transaction.

Against these three classes of manufacturers the bona-fide jobbers have serious grievances. On single orders quantity should not make price, they believe. Cut price mail order houses, small pools or buying clubs of dealers or owners, and other undesirable elements in the business are encouraged by the manufacturer who is blind to all of a customers' defects provided he furnishes a quantity order with sure payment. However, when a manufacturer takes this position boldly and openly, the jobbers are at least satisfied as to where he stands. If they need his goods it is a simple matter to get one of their number to buy the quantity insisted upon, afterward dividing it up among the others in small parcels, so that each gets the bottom price without any very heavy investment.

But the maker whose salesmen go around the country discovering or creating new jobbers all the time is the one whom the real jobbers curse with fervor. The newfound jobbers do not amount to anything as additional competition in the actual jobbing field, but they are thorns in the side of the real jobbers by the way they divide up their purchases with other dealers at cost, to avoid carrying too much stock, and they make the real jobbers' salesmen feel very cheap by informing them haughtily, "Why, we can buy from the manufacturers just as cheaply as you can!"

In the ordinary course of affairs, the big jobber in a territory has been the first to be approached by the manufacturer's salesman. The latter has assured the jobbing house that the goods in question are to have a large sale during the succeeding season and that it is advisable to carry a good stock. In consideration for a liberal order, the salesman makes what is understood as the bottom jobbers' price, allowing a good margin for subsequent sale to the dealers. Having landed all the big orders that are possible in this way, the salesman begins digging up the lesser fry in the territory. Most of these have been in the mind's eye of the big jobber as the probable customers for the goods, but the manufacturer's salesman, as orders get slimmer, becomes very lenient in his attitude and, in order to do business which he thinks is required of him, makes propositions to the smaller houses by which they get as good terms as the big jobber without being required to take as great a quantity. When the big jobber gets around to offer the goods to his customers, he finds that many of those on whom he relied to take the largest quantities have by the magic imagination of the manufacturer's salesman been converted into jobbers, too, and that they already enjoy a much lower price than the big jobber can offer. As a result, the bona-fide jobber does not do the business that he expected to do and in some instances is left with a heavy stock of the goods on his hands at the end of the season.

Many of the dealers who have suddenly discovered themselves to be jobbers through overzeal of a manufacturer's salesman, have been sufficiently wise to make each concession in price which they have thus obtained, the basis for concessions from other manufacturers. In contending with a manufacturer as to whether they are entitled to the jobbers' price, they prove their case by citing the other manufacturers from whom they do obtain the jobbers' prices, an argument which is of great effect in many cases. It may be said that there are hundreds of big dealers throughout the country who get a majority of their accessory stock at jobbers' prices without jobbing so much as a cotter-pin during an entire season. Each price concession that they get is made a club for inducing other manufacturers to recognize them as jobbers, and in the face of a strong showing, the manufacturer's salesman is likely to put in a plea with his firm, urging that the concession be made.

It is through the discovery by dealers that in the pose of jobbers they can get better prices, that the careless manufacturers are deceived by the letter head proclamations. Without being guilty of any sophistry or intentional bad faith in making jobbers out of ordinary dealers for the purpose of giving low prices and placing the goods, the careless manufacturer fills almost any order that comes, and grants the jobbers' price simply because the man who orders declares himself to be a jobber. In such cases not even quantity is insisted upon, thus making the situation worse than ever for the bona-fide jobber.

"We haven't time to examine into every little order that comes in," the careless manufacturer says. "If a man is a jobber, and it so appears on his stationary and order blanks, we cannot send an agent out to look over his books and prove it before we ship him. We are busy and we've got to take a chance rather than turn down an order and have a fight over it."

Pretty soon about the only "jobbers" orders that such a manufacturer gets are from the near-jobbers, and the quantity orders are woefully lacking. It is but a natural penalty, and follows as sure as day follows night, for the simple reason that the real jobbers' market for the goods is knocked out and there is no sense in carrying the stock.

Probably nothing is more important for the continued success of an accessory manufacturer than a well conceived and fixed selling policy covering the relations with jobbers, dealers and the public, respectively, as well as the prices to automobile makers using the goods as equipment. This principle is recognized by the shrewdest sales managers in the business. The most prosperous accessory firms, where they give a jobbers' price at all, are careful to see that it is enjoyed only by the real jobbers, since otherwise the whole structure of their

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selling system must tumble because of basic weakness.

Particularly hard for a new manufacturer, however, is the task of deciding who is and who is not a jobber. The experiences of some accessory makers in endeavoring to make the identification have been trying in the extreme. There are only about a dozen houses in the whole country that every one will agree on as being bona-fide, legitimate jobbers. Some that two years ago were undoubtedly big jobbers have changed the character of their business to such an extent as to be chiefly cut-price catalog houses seeking business by mail from retail customers and doing a retail business over the counter in branch stores. Others have let the jobbing department of their business go by the board to such an extent that they can hardly be considered jobbers any longer, while newer firms have taken up the jobbing end with such enthusiasm and enterprise as to be graduates from the near-jobber class to the real thing.

Some houses there are that perform all the functions of a jobber for certain manufacturers, without doing a general jobbing business at all. As distributors for certain lines of goods they are very successful, and the manufacturers of these particular lines feel well satisfied to give them the jobbing prices. For the manufacturers to enter any definite agreement to recognize only a selected list as jobbers would probably entail cutting off some of these firms, which a few of the makers would be loath to do.

Those manufacturers who agree that the jobber performs a valuable service in the trade so far as distributing goods, saving freight charges to the retailer and assuming the trouble and risk of dealers' credits, must shortly feel the pressing necessity of taking some steps to give the bona-fide jobbers the protection which they have a right to expect. The business is settling down to a firmer basis and conditions will require that those who have not already met and answered the problems which are presented as to selling policy must soon do so.

Perhaps as illuminating suggestions as any concerning the proper method of deterbining who the real jobbers are, come from the big jobbing houses themselves. In response to queries put by the Motor World on this and other points as to the relations of manufacturers and jobbers, the following responses, among others, have been received:

The Motor Car Equipment Co., New York City—"The sore spot in the business is the way the manufacturer is treating the jobber. There is no protection. Some manufacturers consider every dealer a jobber; others do not recognize the jobber, but make quantity prices. It is certainly up to the jobbers themselves to eliminate these objectionable features and organize.

"Our definition of a jobber is: A house buying from a manufacturer, issuing a catalog, having men on the road, and selling to dealers.

"The automobile supply business has come in for a whole lot of abuse from outsiders. It has given an impression that the profits are enormous on account of the fictitious list prices put on merchandise by some manufacturers. There should never be more than 40 per cent. between the selling prices and the prices to the jobber. If this were strictly lived up to, the parasites of the business—cut-price houses, mail order houses, etc.—could not live."

The Post & Lester Co., Hartford, Conn.—"Manufacturers are altogether too ready to give jobbing prices to retail dealers who may have the word 'jobber' printed on their letterhead. There are very few manufacturers who investigate whether a dealer is a jobber or not. His 'say-so' is sufficient as they figure it takes off the curse.

"The remedy would be in the hands of the jobbers, if they could submerge their jealousy long enough to get together and work in harmony. It is the writer's opinion, however, that it would be impossible for such an association to work together in harmony.

"It is entirely in the hands of the accessories manufacturers to protect the legitimate jobber. We do not believe it would be very difficult for them to formulate a list of those entitled to jobbing prices, similar to the list adopted by the chain manufacturers and let the members of the association each sell such jobbers on this list. Similar associations in other lines decide who the legitimate jobbers are and sell them accordingly."

Abbott Automobile Co., Ltd., New Orleans, La.—"If the jobbers have any kick coming at all it is our opinion that they are as much to blame for it as any one else; in fact, more. The legitimate jobbers experience little trouble, in our opinion, in working with the legitimate dealer. One of the most serious troubles being experienced to-day, we think, is the jobber selling in competition with the retailer, direct to the consumers. We know whereof we speak, because we do both a retail and a jobbing business.

"We should define a jobber as being one who supplies the retail dealer with goods in his line and gives the usual dealers' prices on such goods. To be considered a jobber, one should have an established trade with some of the dealers in his territory. He should issue a catalogue, or circulars at any rate, describing the lines which he carries and he should carry in stock enough goods in the line to take care of the demand in his territory.

"There are, doubtless, retail dealers in some localities who are using larger quantities of merchandise than jobbers in other localities, due of course, to the natural conditions existing in their respective territories. So that a jobber cannot, of course, be determined entirely by the volume of business which he does."

New York Sporting Goods Co., New York City—"The automobile supply business is, of course, in a very much jumbled-up condition as to who is and who isn't a jobber, and it will take a few years to clear the atmosphere. I will admit that it is pretty hard now for a manufacturer to distinguish between the wholesaler and retailer, but many of them, in their anxiety to sell goods, display very elastic consciences. The so-called manufacturer's agent is a menace to the jobbers' interests, because what he is looking for is his little commission, and if he can't get the long price from the dealer, he will take the short price.

"One thing is sure, the mail order houses who increase list prices so as to advertise big discounts to deceive the public will find it harder and harder to do business. You can't fool the public very long, and all signs point to the return to the legitimate dealer of such trade as these so-called cut-price houses have diverted."

The Sidney B. Roby Co., Rochester, N. Y.—"There has been entirely too much cutting of prices. We think one of the principal reasons for this cutting is the fact that manufacturers sell indiscriminately to all dealers at jobbers' prices, but compelling the dealer to take a quantity in order to get the price. The dealer is loaded up with more than he would naturally buy and is afraid to let a sale go by so cuts the price to unload.

"We should define a jobber as one who publishes a catalogue, travels at least one man outside of his city, and who at least has one-third of his sales made at wholesale.

"The jobbers themselves cannot organize a remedy unless they have the co-operation of the accessory manufacturers."

Hollis Electric Co., Minneapolis, Minn.—"We are of the opinion that at least 50 per cent. of the concerns listed as jobbers are not entitled to a jobbers' basis.

"In our opinion a concern to be entitled to jobbers' prices should not be engaged in the business of selling or repairing automobiles, but should devote its entire energies to the selling of accessories.

"Although there are a good many houses having the agency of one or more makes of cars for from one to three or even more States, being in touch with a number of dealers handling their particular line of cars, they are not entitled to jobbers' prices as they can secure business from dealers handling their particular line of cars, and not from those who are handling a competing line of cars. The Motor and Accessory Manufacturers, no doubt, could remedy the difficulty."

Hearsey-Willis Co., Indianapolis, Ind.—"Manufacturers of accessories are beginning to recognize the legitimate jobber as one who issues a catalogue, carries a stock of goods and travels men on the road. There are, of course, a great many manufacturers who are eager to market their product and overlook the legitimate market, but will in a short time recognize this

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when trade conditions will be very greatly improved."

Franco-American Auto & Supply Co., Chicago, Ill.—"We would define a jobber as a man who buys goods in quanaities and in turn sells them at an increase to the dealers who are not in a position to buy quantities and get the price. There is no question but that some action must be taken to protect the jobbers or they will have to enter into the retail business, as about 50 per cent. of the manufacturers work under the idea that everyone is entitled to regular jobbers' discount, which certainly works a hardship on companies attempting to do a legitimate jobbing business."

The Angier Co., Boston, Mass.—"If we were to find fault with the general way in which business has been conducted, we would be inclined to criticize the manufacturer, who, after loading up a jobber for the season, sends his salesman through that jobber's field and deals directly with the dealers from whom the jobber expected to receive his business. Many times these customers are sold at less than regular dealer's price.

"This is a hardship to the jobber who has put capital into a stock necessary to care for the wants of dealers in his territory and is clearly unfair to the jobber. It would seem as though, from a selfish standpoint the manufacturer would feel like strengthening the hand of the jobber in the way of upholding prices for the reason that in one case he deals directly with one party who is presumably able to pay his bills, while in the other he spreads it through a large number of small sales, necessitating expense of travel, putting up, bookkeeping and collections, with increased chances for loss in one direction and another.

"Certainly no jobber who is inclined to uphold prices and do a square business can do so under these conditions, the result being a demoralization and breaking down of prices, so that it becomes a matter of jockeying as to who gets the business, which is not at all agreeable to a high class jobber.

"We define a jobber as a man who issues a catalog covering a substantial territory, and sends salesmen into that territory; or in other words, one who, by direct contact or advertising in some form, reaches the dealer."

The Geo. W. Nock Co., Philadelphia, Pa.—"Until some of the so-called jobbers are eliminated from the list, the legitimate jobbers will have more or less trouble in maintaining prices. The Motor and Accessory Manufacturers do not protect the legitimate jobbers properly, as they are too anxious to get business, no matter where it comes from. It really is hard to define a jobber, but I think it can be done by selecting those who print a catalogue and travel men on the road. This matter will right itself in the course of time, as it did in the bicycle business in years gone by."

CHANGES IN EUROPEAN SITUATION

Indications of the Foreign Shows as Seen by Grossman—He Discovers Some New Things Among Accessories.

Big changes in Europe's automobile situation and the discovery of ingenious developments in improved motor car accessories make the chief features of the observations of Emil Grossman, who has just returned to New York after a visit to both the Stanley and Olympia shows in London and the two Paris shows. Not neglecting the car situation, yet with particular attention to the accessory field, in which, as head of the National Sales Corporation, the Motor Car Equipment Co. and similar enterprises, he is naturally more concerned, Grossman was well repaid for his trip in the knowledge of foreign trade conditions which he reaped and in the new ideas which he was able to pick up, not to mention the closing of numerous important contracts both for the sale of American goods abroad and for the bringing of some of the latest foreign devices to the American market.

"No longer is there any overproduction of high powered cars in Europe," he said, in discussing the results of his trip with a Motor World representative. "The reason is that the foreign manufacturers are not making big cars in such quantities any more. They are turning to small cars. The French manufacturers, especially, are giving a great deal of attention to light voiturettes and to taximeter cabs. Commercial vehicles of all types are being developed rapidly, too.

"Big touring cars are only being made in limited amounts, closely calculated to the demand. The French and Italian builders are on about a par in this class, all of them appearing to hold their own. Germany has had no great increase in the number of its automobile plants and seems to absorb pretty near all of its own production. In fact, of all the European automobile manufacturing countries, Germany is probably the healthiest from a business standpoint. All the German factories are quite busy and they do not seem to need to export their cars to find a market.

"Conditions in England are a little more unsettled. There are plenty of British manufacturers, while the makers on the Continent also compete for a share of the business. This results in very lively competition, and while the stronger British makers are doing very well, the weaker ones are having their troubles. The American invasion has not made any very great impression on the European markets as yet, except in the case of two or three well known American makes which have been well represented abroad for some time.

"All over Europe," he continued, turning to the subject of accessories, "there is a tendency to regulate the use of brilliant automobile searchlights in the cities. Legislation has been passed in a great many localities forbidding the glare which ordinarily accompanies the use of gas headlights. To meet the situation almost thousands of devices have been invented for the purpose of cutting off the rays that annoy and temporarily blind traffic coming toward the car. At the shows there were exhibited almost every imaginable form of lamp accessary looking to this end, from movable eclipsing systems, actuated by flexible wires, to fixed arrangements of vanes and light apertures. Of all those that I examined, one in particular struck me as being the most perfect, and I secured the American rights to manufacture it, and through our company will shortly place it on the market."

It consists, he explained, of nothing more than a front glass for the lamp, the upper half of the glass being etched on both sides and inlaid with black bands of enamel. The bands on the two sides are waved, and so arranged that the high parts of the curves come alternately, the light being allowed to go only in a straight forward direction through the interstices of the criss-cross pattern that they make.

On his trip he also bought the American patent rights to manufacture a new form of demountable rim, a product of the Pirelli factory in Italy. The rim differs from the types heretofore shown in that only half of the locking ring for the demountable part is removed when it is desired to take off the latter. Three bolts control the action of the whole arrangement and a change can be made in from 20 to 30 seconds. In England he arranged for the rights to make the Hattersley & Davidson compound pump, of the familiar English type.

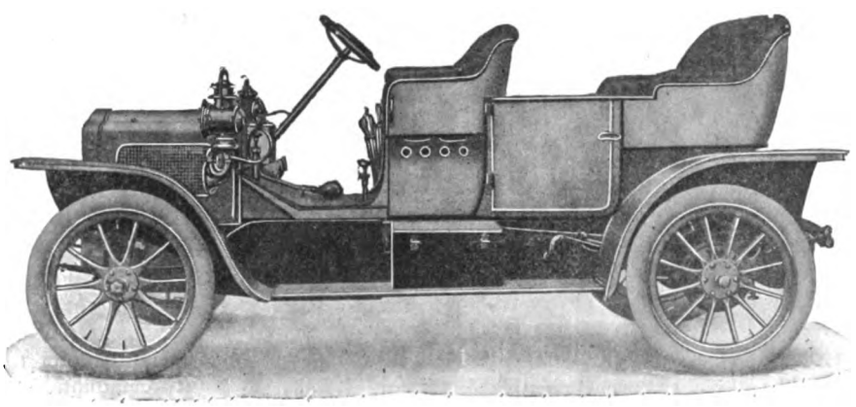
Supplanting the earlier forms of universal pump connection abroad, according to Grossman, is a new universal connection, which, instead of using stiff, slotted rubber into which the tire valve fits, has a contracting clamping action which is controlled by a small lever. The device is no larger than the ordinary universal pump connection, but it does not so readily wear out and when slipped on a valve and clamped by the one lever movement, gives no chance for the leakage of air. The same simple mechanism is also incorporated in a valve cap, thus doing away with the usual screw thread and preventing the slow valve leaks which afflict many tire users. The American rights for these two accessories he also obtained, and will manufacture them in large quantities.

A further novelty in his stock of foreign acquisitions is a tire pressure gauge which retains its reading after being removed from the tire. After the reading has remained for reference as long as is desired, the indicating hand may be returned to zero by pressing a button, after which the next reading must be obtained from the air pressure of a tire, as before.

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Safety as a Selling Slogan.

It is an incident to progress that not simply do the structural features of automobiles change from one year to another but that the points in which they exert their appeal upon the buyer also are constantly undergoing alteration. Thus the salesman finds that it is necessary not simply to learn the general direction to be taken in seeking trade, but that it is further necessary to be shifting his course from time to time in order to keep abreast of the market. A case in point is the way in which the qualities of speed, appearance, power, carrying capacity and endurance have been played upon during successive years. In turn these qualities have come to be regarded almost as a sine qua non in a high grade car, and the resourceful salesman has been forced to change his argument accordingly in order to bring about the conviction that the product which he handles has other qualities than those which are regarded as mere essentials in a well-made and thoroughly approved car.

In this connection it would appear that the marketing of the really high grade machine might be carried out more largely on a basis of safety in addition to the other accepted requisites than generally is done. Cars which may possess many other of the necessary qualifications, occasionally are subject to accidents which point directly to the use of improper factors of safety; to inaccuracies in the design of vital parts of the running gear which result in more or less serious disasters. It seldom happens, however, that among the machines which suffer in such ways are found the names of certain makers whose products are classed among the very best. Above all else they are so constructed that they are safe. Broken axles, dished wheels, steering gears gone wrong at a critical moment and other difficulties of a nature which would tend to imperil the occupants are practically unknown. Therefore the cautious user whose inquiries among his friends are apt to be extremely searching, comes to regard such machines as desirable above all questions of price or speed or capacity or appearance. Indeed, it may be considered as largely because of this happy avoidance of critical failures that certain machines have attained the conspicuous success which they have.

It is no longer a problem of extreme difficulty for a manufacturer to turn out a car to satisfy any or all the demands which have been paramount in former years. All things considered, however, it is difficult to produce a car which is really safe—that is to say, which is figured for strength in every line, and which is built of materials which are thoroughly suitable in every respect. To produce such a car it is necessary to carry out the details of design and construction with the utmost care, to insure the inspection of every part prior to assemblage, to provide for the testing of samples of each new lot of material broken into, and to overlook the process of assemblage with absolute thoroughness. Therefore, the machine which, as a matter of record, is proven to be safe may be regarded properly as having those other qualities which are desired, at least in matters of material and workmanship. Speed, appearance, cost and capacity, the average buyer can determine for himself, but the absolute assurance that the car of his liking also is reliable to the point of absolute safety should go a long way toward fixing his final choice. The salesman who fails to take cognizance of such an advantage would seem to be overlooking one of the most important shafts in his quiver.

Abandoning the Rule o' Thumb.

Rather surprising to the layman is the idea that by merely allowing a tiny little piece of metal with an oddly shaped point in which a diamond is set, to fall a given distance and then observing how high it rebounds, it is possible to determine the hardness of the substance against which the piece rebounded. But further, that by determinations so made, taken in comparison with other determinations previously made and checked; it is possible to secure not only a measure of the hardness of the object under test, but also of the strength and elasticity which it possesses, seems almost beyond comprehension. Even the trained scientist of a few year ago would have scoffed at the notion of applying the results of so minute a test on a greatly magnified scale to data which under other circumstances would be obtainable only at the expense of tremendous physical reactions.

This is the age of the chemist and the physicist, however, and the fruits of their labors are constantly coming to be regarded in a more serious light by those who formerly were wont to regard all questions of pure theory more or less askance, and to depend almost wholly upon empiricism for their guidance. It has come to be recognized that the deductions which the trained analyst is able to make from his own observations and those of others are far more conclusive and accurate than those which the old-time expert could make as a result of his long training in the blunt use of his seven senses. The type of man who is offended at the notion of guiding practice by theory still exists in large numbers, but he is content to put into daily use products which would have been unattainable without the application to practice of the most abstruse and almost amusingly complex of hypotheses.

It is significant of the advancement embodied in the motor vehicle as of the progressive type of men composing the producing industry, that automobile factories utilize some of the most modern and highly theoretical systems in existance, both as to methods and machinery of production and as to the materials utilized. With an enterprise which is characteristic, every avail-

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able new idea which is applicable in any way to the task of producing a better car, or as good a car under better conditions, is grasped and adapted to the needs of the builder. Inventiveness and clever application of ideas have made possible the design of the modern car. But only through the wholesale adoption of the most advanced systems known to science has it become possible to reproduce those designs in concrete and durable form at a price which has made possible the popularizing of the motor vehicle.

New York City's Park Commissioner has "broke loose" again on the subject of tire chains. Because a short stretch of road which recently he caused to be resurfaced at a cost of $30,000 is again in need of repair, he thinks the use of tire chains should be prohibited by law. But as such chains and other anti-skid devices are in the nature of life-preservers it would seem that any enactment that may curtail their use will strike at the policy of public safety and also at the "first law of nature." The Park Commissioner might better investigate his costs of resurfacing or find a pavement that will not be so easily affected or so quickly require repairs.

It is peculiar what queer ideas of helpfulness are possessed by most of the so-called popular periodicals which bid for the patronage of the automobile industry. Thus Harper's Weekly illuminates its "Automobile Number" with a picture of a perplexed motorist laboring on his disabled car and exclaiming, "How I wish you were a horse!" Life's "Buzz-wagon number," which is overflowing with automobile ads., is studded also with illustrations of motorists in distress that are not calculated to induce pleasing thoughts of motor cars nor to promote their sale.

As both an outlet for American accessories and the source of new accessories for the American market, Europe looms larger every year, no matter how much it has declined from the pre-eminence in complete cars which it at one time enjoyed. What Europe is doing in automobile design and manufacture is now of comparatively little importance to the American industry, but in the accessory field a trans-Atlantic exchange of both ideas and goods is being conducted with increasing profit to those interested, on both sides of the ocean.

MOTOR CARS SAVE STREET SPACE

Comparisons with Horse-drawn Vehicles—What the Measurements Proved—London's Horses Disappearing.

Of the advantages accruing from the use of the motor vehicle in cities, perhaps none is more vital to the life of the greater municipalities than that arising from the economy of space involved and the relief of traffic congestion which it brings about. Suggestive figures bearing upon this point are contained in a report recently published by the London traffic branch of the Board of Trade on conditions in London, wherein it is shown that between 1903 and 1907 the number of motor cabs had increased by 700, while the horse drawn cabs had decreased in number by more than 1,500. Motor 'buses had increased during the same period by 1,200, while the corresponding horse-drawn vehicles decreased by 1,000.

The figures are authoritative, being drawn from the reports of the granting of annual licenses. Their full significance does not appear, however, until comparison is made of the relative amounts of space occupied by motor and animal traffic. Such a comparison made by the Geo. N. Pierce Co., reveal striking contrasts. Thus in the case of a 6-cylinder 60 horsepower car, seating seven passengers, 72.8 square feet of street are required, while a one-horse cab occupies no less than 88.7 square feet. This saving of 15.9 square feet is eclipsed in the case of the smaller 24 horsepower car which conforms more closely in seating capacity with the cab. The car in question occupies but 59.1 square feet, a saving of 28.6 square feet. The complete results of the measurements are as follows:

Motor Vehicles.

H.P.	Length over all.	Sq. feet.
24	12 feet 8 inches	59.1
36	13 " 0 "	60.7
40	14 " 5 "	67.0
48	15 " 0 "	70.0
60	15 " 7 "	72.8
45	18 " 6 "	84.0

With the exception of the last, which was a 5-ton motor truck, the cars measured were of the pleasure type. The horsed vehicles chosen, however, were of the varieties more commonly found in city traffic, as follows:

	Length over all. Feet.	Sq. feet.
One horse cab	19	88.7
Two horse cab	20	93.3
One horse del. wagon.	20	93.3
Two horse del. wagon.	20	93.3
Moving van	24	112.0
Brewery wagon	26	121.1
Scenery wagon (short)	29	135.3
Scenery wagon (long).	40	228.7

An even more striking illustration is that furnished by comparison of relative street areas occupied by the big motor truck and its nearest animal drawn equivalent, the brewery truck. The latter, while not capable of carrying as great a load as the motor vehicle in question, occupies 121.1 square feet of street space, while the motor truck requires only 84 square feet.

COMING EVENTS

January 16-23, New York City—Association of Licensed Automobile Manufacturers' annual show, Madison Square Garden.

January 21-31, Los Angeles, Ca.—Automobile Dealers Association's show.

January 25-30, Cincinnati, O.—Automobile Dealers Association's show.

January 27-February 3, Philadelphia, Pa.—Automobile Trade Association's eighth annual show, Second Regiment armory.

February 6-13, Chicago, Ill.—National Association of Automobile Manufacturers' show, Coliseum and First Regiment Armory.

February 15, Detroit, Mich.—Detroit Automobile Dealers Association's show, Wayne Pavilion.

February 15-20, St. Louis, Mo.—Automobile Manufacturers and Dealers Association's annual show.

February 16-18, Denver, Co.—Denver Motor Club's first annual show, Auditorium.

February 20, 21, 22, New Orleans, La.—New Orleans Automobile Club's Mardi Gras carnival 3 days race meet.

February 20-27, Newark, N. J.—New Jersey Automobile Trade Association's show.

February 22, Cleveland, O.—Cleveland Automobile Dealers Company's show, Central Armory.

February 27-March 3, Hartford, Conn.—Automobile Dealers Association's show.

March 1-6, Buffalo, N. Y.—Buffalo Automobile Club's 7th annual show, Convention Hall.

March 1-6, Omaha, Neb.—Omaha and Council Bluffs dealers' show, Auditorium.

March 6-13, Boston, Mass.—Boston Automobile Dealers Association's (nc.) seventh annual show, Mechanics Building.

March 8-15, Kansas City, Mo.—Kansas City Dealers Association's show, Convention Hall.

March 10-13, Memphis, Tenn.—Automobile show, Auditorium building.

March 13-20, Minneapolis, Minn.—Minneapolis Automobile Show Association's show, National Guard Armory.

March 15-20, Rochester, N. Y.—Rochester Automobile Dealers Association's show, Convention Hall.

March 22-25, Ormond-Daytona Beach, Fla.—Daytona Automobile Club's four days speed carnival.

March 27-April 3, Pittsburg, Pa.—Automobile Dealers Association's show, Duquesne Garden.

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When in 1905 New York for the first time beheld the spectacle of two great automobile shows held simultaneously, the innovation was hailed with delight, for New York and New Yorkers never weary of a spectacle, no matter what its subject or object. At the same time, it was held by some that two shows must be one show too many; that whether they were held simultaneously or on closely related dates it would be found that the local public would tire of tramping the aisles and inspecting the externals of the vehicles, while of the out-of-town contingent upon which so much dependence always is placed by the exhibiting manufacturers, the notion was entertained that the dual show proposition would result merely in splitting the attendance, as it were with the result that neither show would receive its full share.

The sequel has amply proven the fallacy of the idea. Instead of becoming weary of the show, the public appears to anticipate it with increasing eagerness from year to year, while the numbers of visitors at the first and second exhibitions each year appears to be constantly increasing in numbers, as in intelligence and interest. How successful the duplication of shows has been from the manufacturers' point of view, may be judged from the eagerness with which the allotment of spaces is awaited, and the prosperous conditions which prevail immediately after the show, when there is afforded sufficient breathing space to cast up accounts.

Because of the associations and traditions surrounding Madison Square Garden—the birthplace of American automobile shows—all Garden Shows are looked upon with particular favor. Whether by virtue of the fact that repeated efforts have lent wisdom to the brain and craftiness to the hand of the decorator in increasing amounts from year to year, or whether from happy coincidence, the setting of each of the shows held in the big arena and its surrounding halls has eclipsed its predecessor. In token of the march of improvement, naturally the importance and value of the exhibits it has enclosed also has increased annually.

Show Week Calendar.

Saturday, January 16.
Formal opening of Show, 8 p. m.

Tuesday, January 19.
Motorcycle Manufacturers' Association meeting at Hotel Breslin, 10 a. m.
Adjourned meeting of the Society of Automobile Engineers, Automobile Club of America, 10 a. m.
Meeting of the New York Automobile Trade Association.
Testimonial and banquet to Mayor Tiedeman, of Savannah, by members of the Press, Delmonico's, 11 p. m.

Wednesday, January 20.
Meeting Executive Committee of the American Automobile Association, 2:30 p. m.
Meeting and election of directors Motor and Accessory Manufacturers, Inc., Delmonico's, 6 p. m. Banquet, 7:30 p. m.
Annual Meeting of the National Association of Automobile Manufacturers.

Thursday, January 21.
Directors' meeting New York State Automobile Association, 10:30 a. m.
Meeting of the A. A. A. Touring Information Board, 2:30 p. m.
Annual meeting, stockholders of the Importers' Salon, Bryant Park Building, 8 p. m.

Friday, January 22.
Meeting of the A. A. A. Good Roads Board, 10:30 a. m.
Conference A. A. A. Club and State Association secretaries, 2:30 p. m.

Saturday, January 23.
Meeting of the A. A. A Legislative Board, 10:30 a. m.

During the week, meetings of the executive committees of the Association of Licensed Automobile Manufacturers and American Motor Car Manufacturers' Association will be held, dates to be announced later.

That the show of the Association of Licensed Automobile Manufacturers, which is to open on Saturday evening next, gives all promise of following precedent in this respect, is beyond question. What is vulgarly known as the "licensed" product, has become thoroughly standardized by reason of the close study of the members of the mechanical branch of the association, and so is entitled to respectful attention on every occasion. At the same time, that standardization has brought about none of the loss of individuality among the cars produced by the various firms such as a monopolistic rather than a co-operativee regime would have induced. Hence the idea of standardization in this connection carries with it merely an assurance of mechanical excellence, while also furnishing a practical endorsement of the structural differences which serve to distinguish the features of one make of car on view from those of another.

With the conclusion last Thursday of the first of the New York Shows of the present season was brought to a climax one of the most significant expositions ever held, because of the generous tokens of renewed prosperity in the section of the industry there represented. As a spectacle pure and simple, moreover, it was of immense value because of the versatility displayed by the manufacturers who were represented.

The forthcoming show, in no sense a sequel to it, promises further revelations in matters of design, additional advantages in the way of exhibition facilities because of the supreme utility of the Garden for show purposes, and a display of machines produced by some of the oldest and most experienced builders in the country, many of whom have occupied stands in the arena or on the elevated platforms since the very beginning of the American industry as an appreciable factor in the business of automobile construction.

Strange contrasts might be drawn between this, and the first show of its kind, which opened in the same arena on January 3, 1900. With decorations provided only by the exhibitors, and only in restricted and modest amounts, with shaky and uncertain

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vehicles on view, and a little band of accessory makers backing up those who had the temerity to display complete vehicles. The center of interest was the main floor,



E. P. CHALFANT
General Manager A. L. A. M.

where was constructed a testing track upon which all demonstrations took place. Demonstrations sometimes proving of the sort not anticipated by the exhibitors, the time between whiles when mechanics were tinker-



M. L. DOWNS
Secretary Show Committee

ing with various obstinate devices, were filled in with gymkhana events and mild contests to show the starting, not to mention the stopping proclivities of the machines. As is the case this year, there were no foreign exhibitors at the first of the shows, but instead a number of foreign-built cars, privately owned, were exhibited as curiosities in the restaurant, now given over to the then unheard of electric vehicle. No better proof of the advancement of the art could be required than that the importance of the show demonstration has dwindled from year to year until now, though still a vital feature of the manufacturers' show campaign, it is no longer required by the possible buyer as evidence that the vehicles displayed are of practical usefulness.

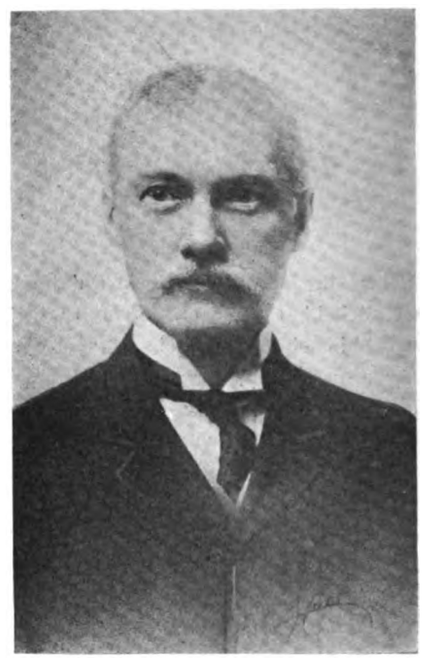
As experience in the conduct of its successive annual shows has profited the A. L. A. M. greatly, so it has proved advantageous to retain at least a portion of the management from year to year. The show committee under whose direct guidance the



COL. GEORGE POPE
Chairman Show Committee

tasks of preparation and administration fall is of well tried material with an infusion of new blood as well. Col. George Pope has been chairman of the show committee for three successive years. President Charles Clifton, of the association, serves ex-officio. E. P. Chalfant, the new general manager of the association, is serving on the committee for the first time, while M. L. Downs, its secretary, has been identified with the A. L. A. M. for the past five years and has attended to the detail work in connection with all the shows. Coker F. Clarkson, secretary of the mechanical branch of the association, and also the new head of the publicity department, though not a member of the show committee, has been prominently identified with it, particularly in the important service of the necessary advance work.

No adequate conception of the task which awaits even the most efficient and capable show committee can be obtained until comparison is made of the show building before the active work of dressing it for the occasion has commenced and after it is complete and the show is ready for the



CHARLES CLIFTON
President A. L. A. M.

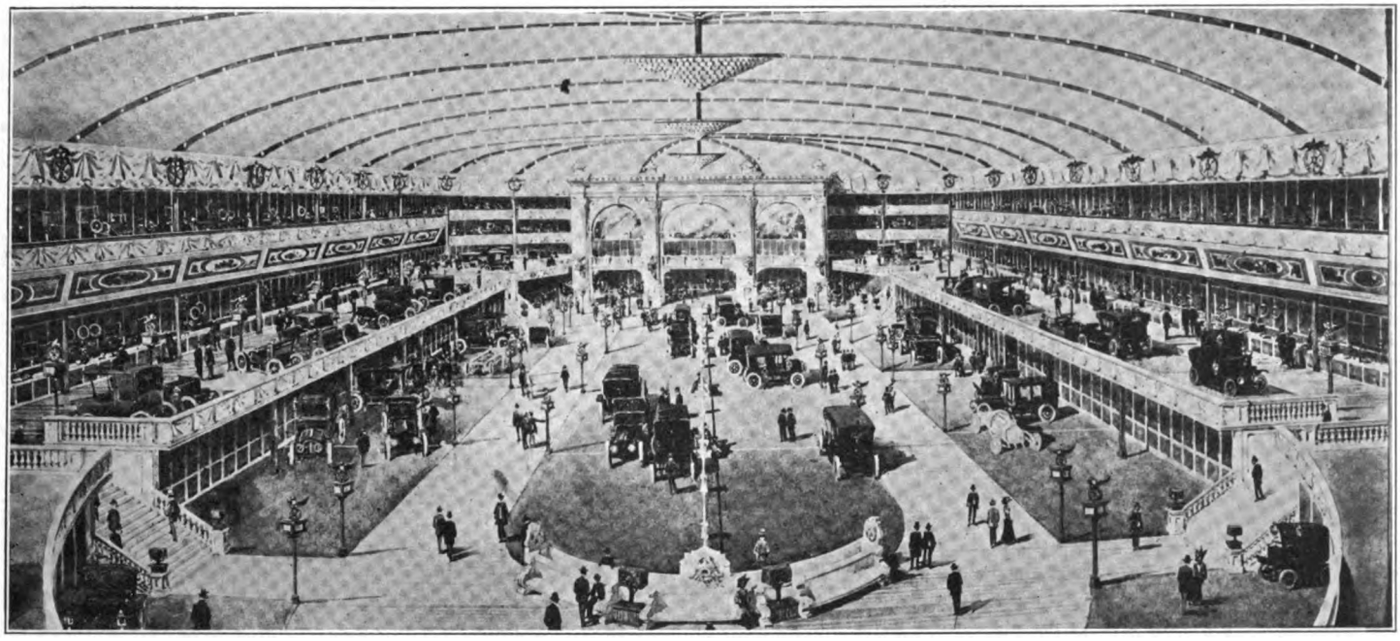
public. It is not alone the immensity of the undertaking; the necessity of arranging for the complete disguising and beautifying of bare walls and unattractive floor spaces within a limited time, but the symbolism



COKER F. CLARKSON
Head of Publicity Department

which it carries of the work of shaping the great display in all its details, first of gathering in the makers and their wares, and then of gathering in the public, which is

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VIEW OF MADISON SQUARE GARDEN, SHOWING SCHEME OF DECORATION FOR THE SHOW

impressive. Yet vast as the undertaking is in all its phases, it is to the embellishment of the building itself, that the visitor is apt to look in order to determine whether the committee has outdone itself in originality and enterprise. Variety, attractiveness, harmony and above all, unobtrusiveness are pursued with earnest fidelity in an effort to make the show as impressive as possible, and to do so with increasing success in succeeding years, is more of an achievement than is commonly appreciated.

For this year, the effort has been to create an impression of expansiveness in the arena itself, while the other departments have each received their customary individual treatment. No obstructing screen or other decoration mars the view of the visitor entering the arena for the first time. Instead, the plan adopted calls for a full view of the entire floor culminating in a huge triumphal arch at the far end, 87 by 48 feet in external dimensions, of classical architectural design, and backed by large mirrors which are intended to give the effect of added depth to the view. Directly in front of the entrance, and marking the branching of the aisles to the longitudinal concourse on either side, will be a sort of Garden fountain, in the form of a low abutment of gray stone, curving about the first exhibition spaces facing the entrance. It will have a trough-like basin, into which water from griffin mouths will spray upon the electrically lighted pool beneath. In the pool will be gold fish and pond lilies, some of the lilies natural and some artificial. From the artificial flowers electric lights will radiate, while a concealed row of lights under the coping of the trough illuminates the falling spray. Carved into the front wall of the fountain will be seats for visitors, punctured at intervals by bay plants.

The general color scheme is to be brown and white, the floors of the stands being carpeted in green. Decorative lamp posts to mark the divisions between the exhibits, liberal use of the new decorative emblem of the eagle mounted on a wheel bearing the initials of the association, frescoes above the elevated platform depicting appropriate scenes in which the automobile plays an important part, brown burlap panels on the lower walls set off with white bunting draperies, and the same material festooned above, will complete the background against which the cars will be set.

Variety calling for different methods of

THE CARS ON VIEW.

Gasolene.

Apperson	Packard
Autocar	Peerless
Cadillac	Pierce Arrow
Chalmers-Detroit	Pope-Hartford
Corbin	Pope-Toledo
Columbia	Royal Tourist
Elmore	Selden
E-M-F	Simplex
Franklin	Stearns
Haynes	Stevens-Duryea
Hewitt	Studebaker
Knox	Thomas
Locomobile	Walter
Lozier	Waltham
Matheson	Winton

Electric.

Babcock	Rauch & Lang
Bailey	Studebaker
Baker	Waverley
Columbia	Woods
Detroit	

Steam.

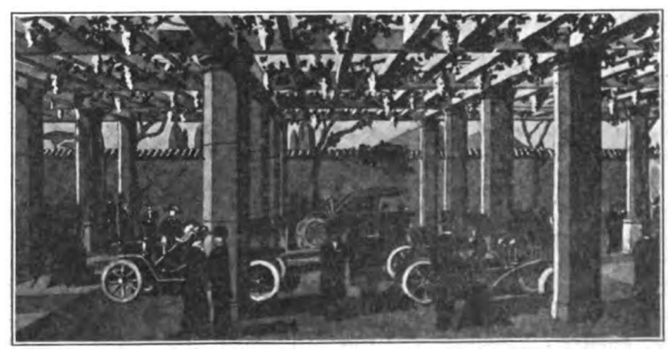
White

Commercial.

Champion	Knox
Franklin	Sampson
General	Studebaker
Hewitt	Thomas



THE RATHSKELLER—A STONE WINE VAULT



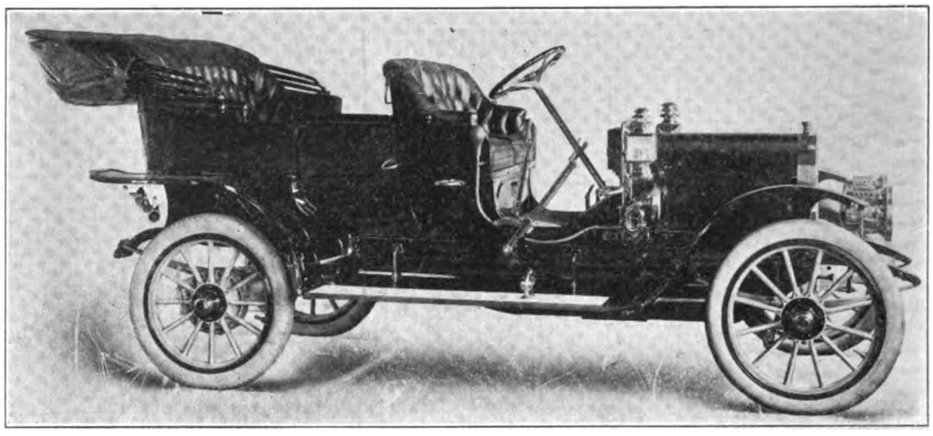
THE EXHIBITION HALL—AN ITALIAN GARDEN

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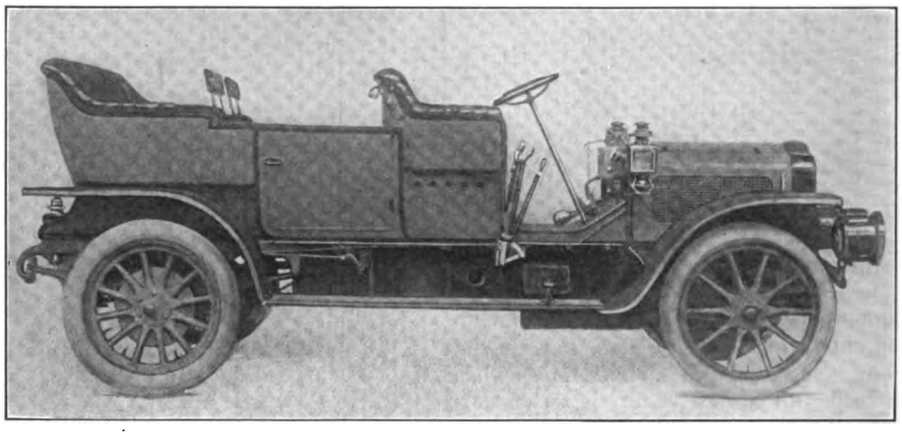
treatment in other sections of the building has given rise to the adoption of the plan for a huge trellis effect in the concert hall, vine-covered and craftily illuminated with concealed electric lights. In the restaurant, the scheme chosen is that of an Italian garden, with realistic walls at the sides, and mural landscapes above, and an overhanging pergola artistically bedecked. The basement is not naturally a place of artistic inspiration, but the quaint setting adopted for the rathskeller is likely to prove effective enough to satisfy the demands of even the most fastidious, with its simulation of an old wine cellar, stone walls, groined arches, casks lining the walls, and iron gateways.

As a show of standardized products almost without exception, the Garden exhibition is not a place for the seeker after startling innovations to find his curiosity rewarded. Originality in the working out of details of construction, however, is to be found in plenty by the close student of automobile design, and to those who are familiar with the construction of cars which have been on view in previous years, sundry changes are discoverable, interesting and instructive, though of comparatively minor importance. In addition to the small refinements of the more stable machines, however, a number of makers will be found to have produced entirely new models for the new year; models posessing sufficient novelty to constitute real "show features." Further, through the official ratification of organizations which have merged older exhibitors, it has been possible for at least two entirely new products to be shown, in addition to which one or two concerns reorganized since the last show, will exhibit cars which are practically new in construction.

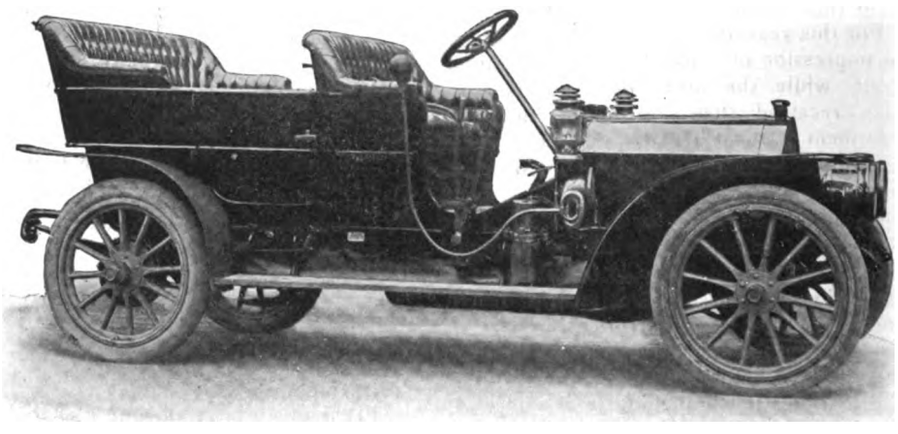
Of the absolute newcomers, no little curiosity will centre about the E-M-F—the hyphenated outcome of the gospel of multiple production which embodies so many of the features of the big elaborate cars, at a price suited to the abilities of the man of moderate means. Technical points in its construction which are likely to meet with approval at the hands of the showgoer are the use of the block method of cylinder formation, with offset crank shaft, thermo-syphon cooling, and magneto ignition; the expanding ring clutch of original design—like the entire machine; the unit transmission, with its change gear and differential housed in common with the rear axle, its pressed steel torque member, semi-floating drive and roller-bearing mounting. The change gear is of the popular selective pattern, and the mechanism of control is further simplified by the use of a foot accelerator. A unique method of steadying the steering gear is found in the method of mounting the front axle, in which the steering pivots are offset back of the yokes in order to produce something of the old-time castor effect, which used to be so much praised in the earlier days of safety bicycle construction. The hubs are mounted on two-point ball bearings—an important point to observe in a product of any such price rating as is given the E-M-F, and throughout the entire machine, the use of pressed steel units combining as many purposes as possible has been made to evidence the careful forethought which has made practicable the production of a car which is in certain respects truly remarkable.



SELDEN "29" TOURING CAR



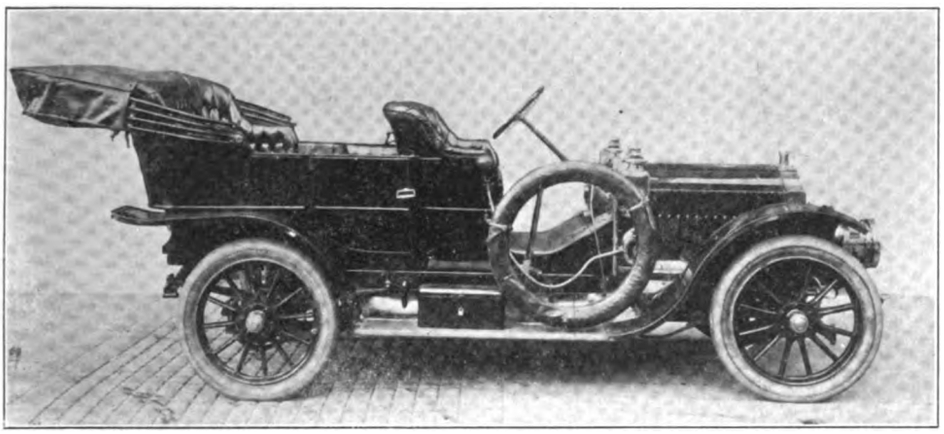
WHITE "M" TOURING CAR



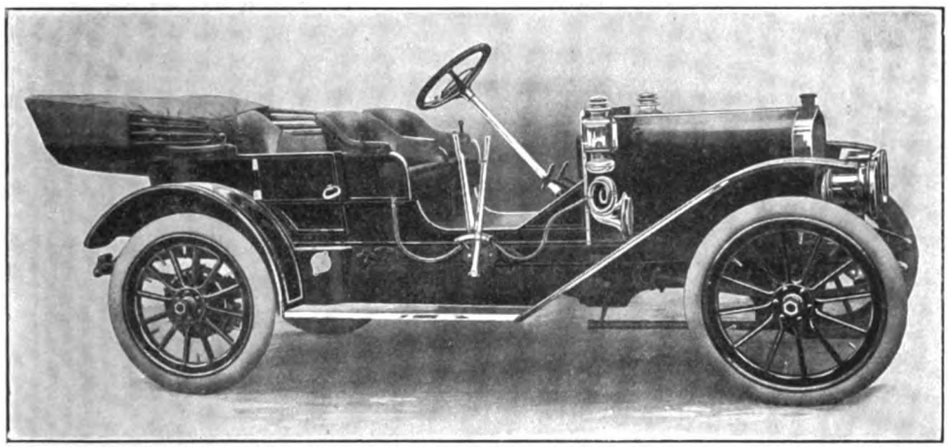
COLUMBIA MARK "48-3" TOURING CAR

Another machine which is calculated to impress the observer because of its closely wrought-out design is the Chalmers-Detroit —also a newcomer at the show—in which is evidenced another laudable and scientific attempt to produce a tremendous increase in value received over that commonly granted at the same figure. Here the principle of the unit power plant has been carried to a logical conclusion, lavish expenditure of expensive fittings, at points where they will repay their cost, being evidenced in the ball bearing mounting of the crank shaft among other noteworthy points. The constant-level, splash system of lubrication is a feature much praised by users who have

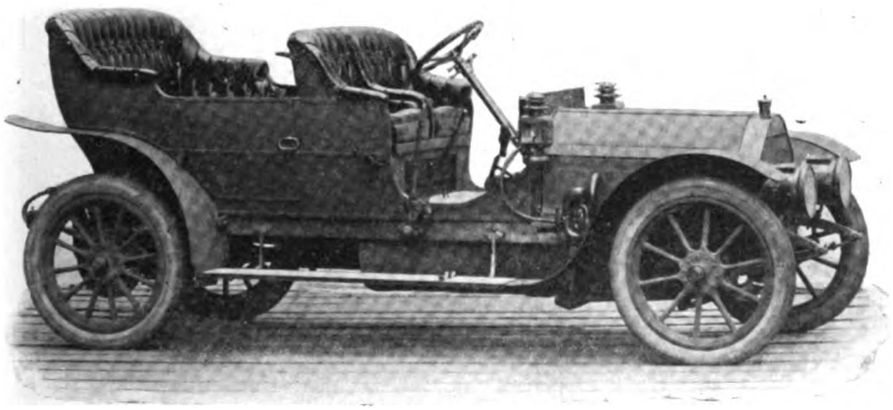
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ELMORE "33" 2-CYCLE TOURING CAR



CORBIN "O2" BABY TONNEAU



PIERCE "6-36" TOURING CAR

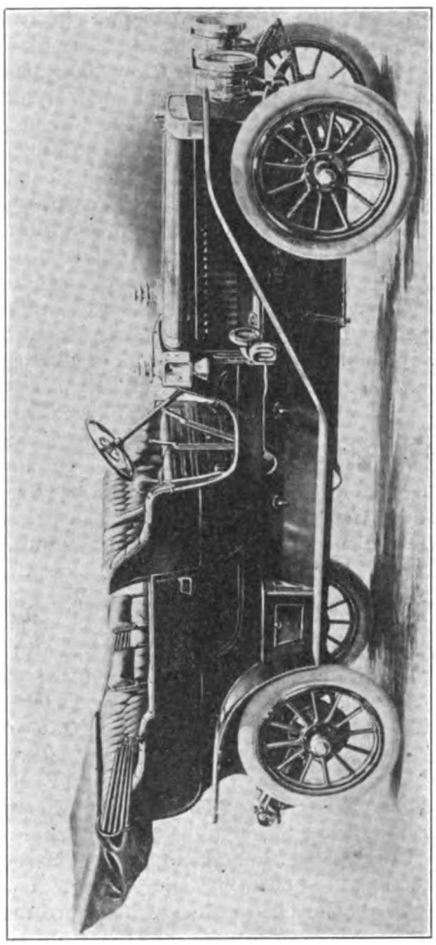
already become acquainted with the car, while another useful feature is the method of mounting the radiator upon flexible supports in such a way that it cannot possibly be strained to the point of leakage, even when the car is severely stressed over rough highways. Rear axle details worthy of mention are the large annular ball-bearings at every point; the spring-seats swivelled spherically upon the axle tubing to avoid twisting the springs in striking bumps; and the accessibility of every part for inspection or lubrication. The clutch and transmission-brake are both operated by a single pedal. Pressure on this pedal first throws out the multiple disc clutch, while continued movement applies the brake on the drive-shaft. This arrangement leaves the right foot free to operate the throttle. The foot-throttle, instead of a button or lever on which the foot works vertically, is a horizontally swinging lever which permits the driver's foot to rest comfortably on the floor at all times. Another useful feature is the fitting of a rubber bushing in the front eyes of the rear springs where they are anchored rigidly to the frame, thus providing an effective cushion against traction shocks.

Among the new models of machines which bear well-known names, no small amount of interest attaches to the Locomobile "30", which is the first model in which the principle of shaft drive is employed to be turned out by the makers of the last Vanderbilt Cup winner. Contrary to the practice which is fairly general in shaft drive construction, the radius rods are made to take the traction load on these cars, their rear ends also supporting the brakes in such a way that by virtue of their swivelled mounting on the axle tubes, no stresses of any sort are communicated to the axle proper save those due to the dead weight of the vehicle and the side strains of the springs. The plan also relieves the springs of all driving or twisting strains and hence leaves them free to perform their natural function. Further, the mounting of the springs on swivelled chairs or saddles, provides against unequal stressing of their ends, and leaves them in practically floating relation to all except their proper loads. A point in this connection likely to be appreciated by the user is the construction of little lugs on the under sides of the spring saddles to serve as lifting points for the jack when it is necessary to raise the wheels.

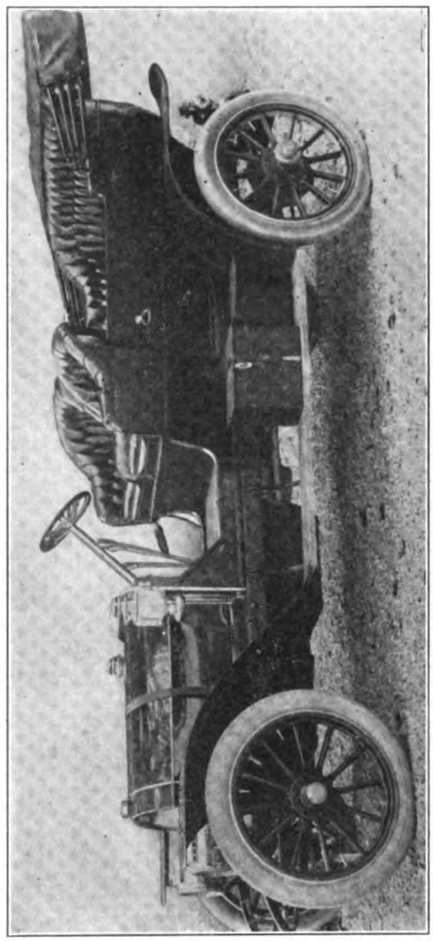
In the latest product of the newly organized Pope Manufacturing Co., is to be found a car, duplicating many of the features of the former product which bore the name Pope-Hartford, but unlike it in respect to a number of points which have been deemed remediable by its designer. The motor is of larger size, for instance, its auxiliaries have been rearranged and placed to better advantage than before, and the method of lubrication also has been bettered. Both master clutch and rear axle have been redesigned—the former with regard to the preservation of alignment between its two conical members under all stresses of use and abuse, and the latter with regard to the universal support of the torque member among other points, the absolute floating relation of the rear axle to the remainder of the chassis having been successfully accomplished in an original manner. Increased brake sizes, alterations in the frame and an increase in wheel base are among other changes which have been introduced, while as a matter of course, the body designs are new—nearly all makers still clinging to the notion that an annual overhauling of the body lines is calculated to gratify the purchasers of recent models.

Stevens-Duryea cars are produced in four different models, all of them embodying the principle of the unit power plant with three-point mounting which has been a strong feature of the line for so long, and otherwise incorporating a number of useful and original features. The use of the progressive system of change gear is noteworthy as applying to the entire line, as is the adaptation of a special method of gear finding by a device which is intended to ob-

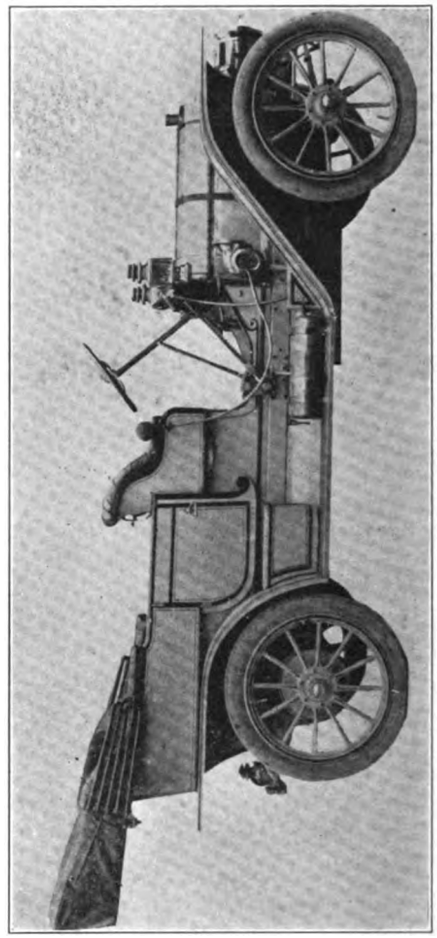
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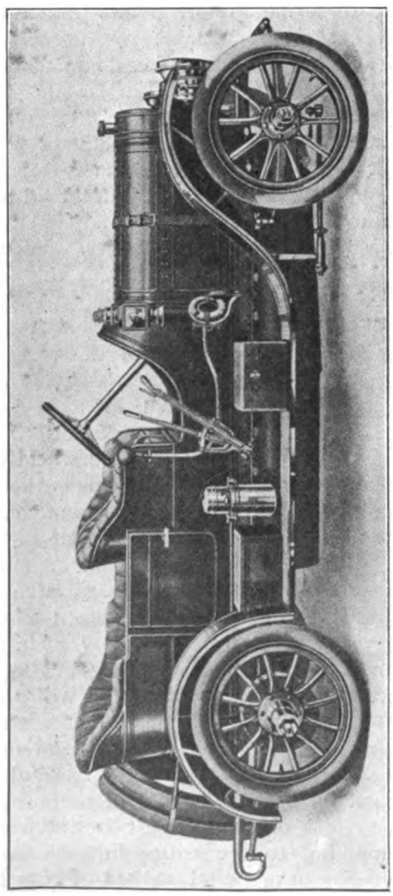
WINTON SIX "18" TOURING CAR



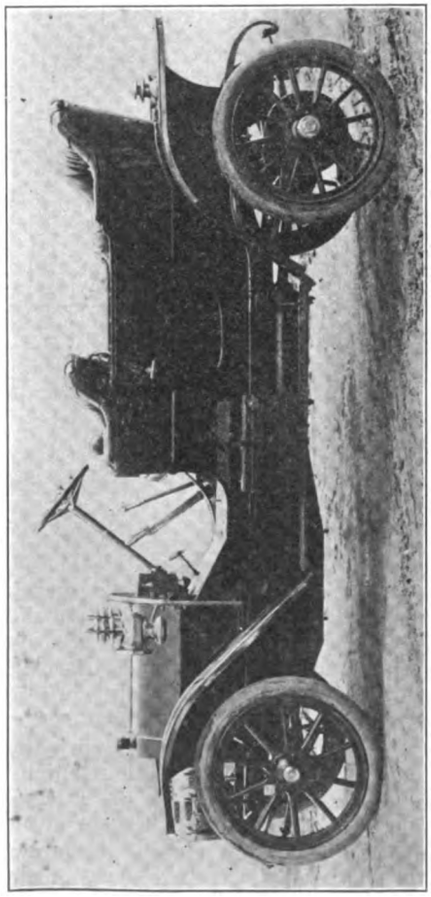
APPERSON "O" TOURING CAR



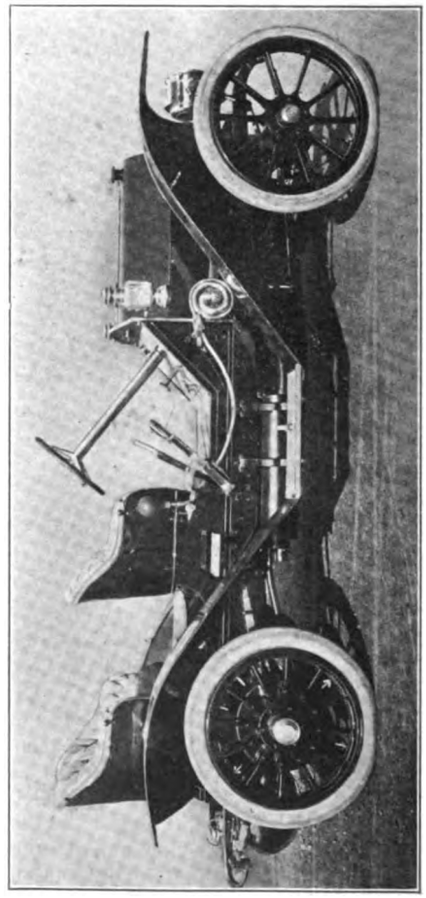
HAYNES "X" TOURING CAR



POPE-HARTFORD "S" PONY TONNEAU



CHALMERS-DETROIT "30" TOURING CAR



PALMER-SINGER SKIMABOUT, TOY TONNEAU

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viate many of the difficulties supposed to be attendant on the use of this system. The clutches are of the multiple disc variety and shaft drive is a universal feature. The carburetter is so designed that it automatically takes care of any surplus fuel due to careless handling of the mixture or improper flooding when starting, and is of the single jet type, perfectly automatic in action and intended to furnish a uniform mixture regardless of throttle position, but determined solely by the rate of engine revolution. The lowest point under the car is under the rear axle casing, this being 10 inches above the ground. The fly-wheel cannot be injured by high crossings or ridges in the road, as, being in front, it is raised with the front wheels and carried over the obstruction.

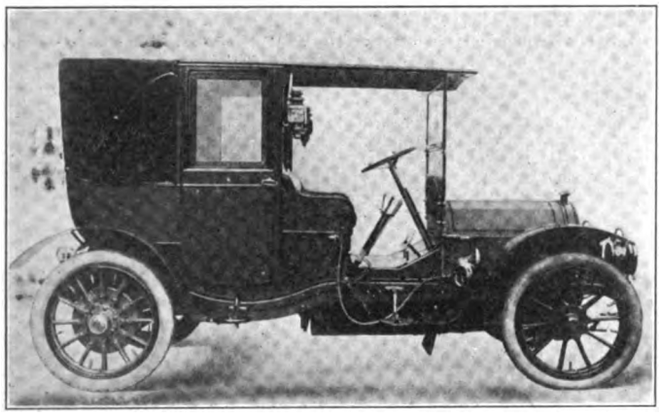
A new car, with a promised new name for the producing concern is that to be exhibited under the name Walter car, but known individually as the Roebling-Planche after the joint names of its financial and technical producers. New features adopted this year include the substitution of platform springs for semi-elliptic members, a 2-inch increase in the diameter of the steering wheel, paired cylinder castings, and a solid aluminum crank case mounted on a three-point suspension, not to mention the employment of a special device for cushioning the radiator against shock by means of a rubber saddle protector are among other refinements, while the manner in which provision is made for the mounting of the dash lamps, tire brackets and other local accessories is likely to excite favorable comment. The car is produced in touring and town car types and also in the form of a high-speed racer.

In the Royal is to be found the product of a newly organized company taking up the work of an older predecessor and presenting a car under the old name, which closely resembles the former product. The motor, however, is larger than before, having a 5½-inch bore, a four-speed selective change-speed gear is used, the wheel-base has been lengthened, and three sets of brakes are mounted, two sets (four shoes) on rear wheels and one on the propeller-snaft. A self-starting device is furnished as an extra. Special features such as body mounting, convenience of the control mechanism, not to mention the ignition system, are also to be observed.

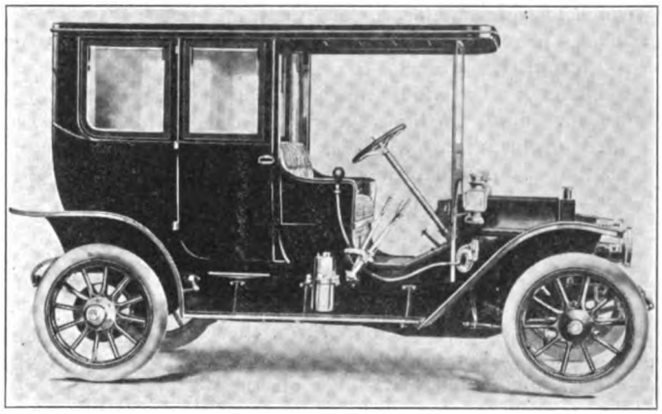
Amog the really sensational announcements of the fall and late summer was that of the new Cadillac "Thirty", which was hailed as a significant innovation to the class of the popular-priced machines. Though "on the road" for some little time, it comes to the show as a new and novel feature, incorporating a number of essentially Cadillac details. Among the points which the visitor will observe in making a study of it are the use of copper water jackets, three-speed selective gearset, shaft drive and rear wheel brakes, with their respective methods of mounting, while such details as the use of ball bearings for the steering pivots, and cooling fan, point to careful supervision of design, while absolute interchangeability is an indisputable feature of the entire line.

Still another new model which falls into the class of the medium powered vehicle is the new Packard "18", which follows the general design of its larger sister car, but is built of smaller proportions for town car and light driving purposes. In the same general class, is also included the new 15-30 horsepower Stearns landaulet, which, as its makers explain, gains its broad rating through the use of a double-jet carburetter, one jet giving sufficient gas to turn up the smaller amount of power, and the other affording the full amount. Unlike the 30-60 horsepower car of the same make, which also is scheduled to appear at the show, it is shaft driven through an enclosing torsion-resisting casing.

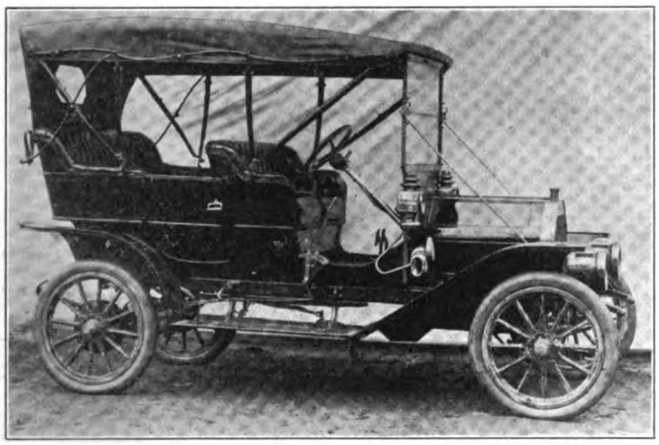
Points of interest, picked out at random from the features of the various other exhibitors who are scheduled for the show include the use of the new Simms-Bosch mag-



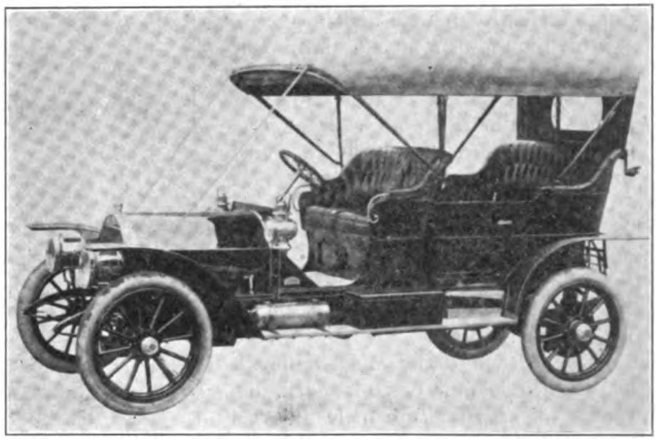
PALMER-SINGER TOWN AND COUNTRY CAR



CHALMERS-DETROIT "30" LIMOUSINE



E-M-F. "30" TOURING CAR



STEVENS-DURYEA "X" TOURING CAR

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netic plugs with low tension magneto on the Studebaker cars, and applied to both the 30 and 40 horsepower models; the universal application of the distance-rod construction of the Matheson which, aside from serving the purpose of a strut rod, with provision for universal action, also supports the hill-pawl, the expanding brakes, the emergency-brake lever, and the dust shield, which protects the emergency brakes in the rear wheels from dust and mud.

The rear axle construction of the Apperson, which, besides being of the floating type, makes provision for sufficient "cambre" to permit the wheels to run on a "plumb spoke", thus eliminating any tendency to spreading; the leverage for operating the Corbin clutch, which is now so designed that a 5-pound push on the pedal is sufficient for declutching; the new design of the Elmore clutch mechanism, with the spring placed directly behind the cone; the use of double fly wheels and the rear axle construction in general of the Haynes; the use of magneto with fixed spark on the concentric valve motor of the Franklin; and the use of triple cylinder castings on the new Thomas "6-40" touring car—also are of interest.

From year to year interest in the developments of the electric vehicle makers continues to grow, though at a steady and moderate rate, in keeping with the thoroughly settled condition of that branch of the industry. Because of the policy of the Garden show management of placing the electric vehicles in a department by themselves, where the sharp counter influence of the rapidly shifting constructions employed in gasolene vehicles is removed from them they never show to better advantage. This year the floor will be amply filled with the displays of eight makers.

Among them, that of the S. R. Bailey & Co., Inc., is entirely new to New York, and is destined to provoke no little interest owing to the original methods of design manifested throughout its construction. The use of wheels having all-metal felloes, a swinging steering post which affords a tiller effect in guiding the machine, motor control by a lever mounted on the steering wheel, which is placed at the top of the steering post merely for convenience in handling the car, and the general measure of safety expressed in several "fool-proof ing" devices, are likely to attract attention Other vehicles which will be of especial interest are the Waverley line, which is in the hands of a newly organized company which succeeds to the general scheme of design which has been identified with the name for several years; the R. & L. and Detroit lines, which are comparatively unfamiliar in the East, though well-known to Chicago show goers; and the Electric Vehicle and Studebaker lines.

Another section of the show which is coming to be regarded as of greater impor-

TABLE SHOWING FEATURES OF VEHICLES STAGED AT GARDEN SHOW

Make and Model.	Price.	Body. Style.	Seat. or carrying capacity.	Motor and Cylinders. Wh. A.L.A.M. base. rating, h. p.	Bore.	Stroke.	No.	Ignition Source.	Type of Clutch.	Change Speed Gear. Type.	No. Speeds.	Final Drive.	Tire Dimensions. Front Wheels.	Tire Dimensions. Rear Wheels.
Apperson, O	$2,450	Touring car	5	119 30	4½	5	4	Stor. bat. & h. t. m.	Band	Selective	3	Shaft	34x4	34x4
Autocar, 18	2,225	Utility car	1 ton	83-97 18	4¼	4½	2	Dry bat. & h. t. m.	Plate	Progressive	3	Shaft	32x3½	32x3½
Cadillac, T	950	Touring car	4	82 10	5	5	1	Dry batteries	Disc	Planetary	2	Single chain	30x3½	30x3½
Cadillac, 30	1,400	Optional	5, 3, 4	106 25	4½	4½	4	Dry and stor. bat.	Cone	Selective	3	Shaft	32x3½	32x3½
Chalmers-Detroit, 30	1,500	Touring car	5	110 24	3¾	4½	4	Storage battery	Disc	Selective	3	Shaft	32x3½	32x3½
Chalmers-Detroit, 30	1,500	Runabout	2, 3, 4	110 24	3¾	4½	4	Storage battery	Disc	Selective	3	Shaft	32x3½	32x3½
Chalmers-Detroit, 40	2,500	Limousine	7	112 40	5	4½	4	Storage battery	Cone	Selective	3	Shaft	34x4	34x4
Chalmers-Detroit, 40	2,750	Touring car	5	112 40	5	4½	4	Storage battery	Cone	Selective	3	Shaft	34x4	34x4
Chalmers-Detroit, 40	2,750	Runabout	2, 3, 4	112 40	5	4½	4	Storage battery	Cone	Selective	3	Shaft	34x4	34x4
Corbin, K2 or R2	2,500	Touring car	5	108 32	4½	4½	4	Dry & stor. bat.	Cone	Selective	3	Shaft	34x4	34x4
Corbin, O2 or S2	2,500	Runabout	2, 3, 4	108 32	4½	4½	4	Dry & stor. bat.	Cone	Selective	3	Shaft	32x3½	32x3½
Corbin, O2 or S2	2,650	Small tonneau	5	108 32	4½	4½	4	Dry & stor. bat.	Cone	Selective	3	Shaft	32x4	32x4
Corbin, 14	3,500	Limousine	5 or 7	114 32	4½	4½	4	Dry & stor. bat.	Cone	Selective	3	Shaft	34x4	34x4½
Electric Vehicle Co., 48, lot 3	2,750	Touring car	5	115 29	4½	4½	4	Low tension mag.**	Cone	Selective	3	Shaft	34x4½	34x4½
Electric Vehicle Co., 48, lot 3	2,750	Limousine	7	115 29	4½	4½	4	Low tension mag.**	Cone	Selective	3	Shaft	34x4½	34x4½
Elmore, 44	2,500	Touring car	5	110 2-cy.	4½	4	4	Dry bat. & gen.	Ring	Selective	3	Shaft	34x4	34x4
Elmore, 33	1,750	Touring car	5	104 2-cy.	4½	4	3	Dry bat. & gen.	Ring	Selective	3	Shaft	32x4	32x4
Elmore, 33	2,250	Landaulet	5	104 2-cy.	4½	4	3	Dry bat. & gen.	Ring	Selective	3	Shaft	32x4	32x4
Elmore, 33	1,750	Roadster	3 or 4	104 2-cy.	4½	4	3	Dry bat. & gen.	Ring	Selective	3	Shaft	32x4	32x4
E-M-F., 30	1,250	Touring car	5	106 25	4	4½	4	Dry bat. & h. t. m.	Ring	Selective	3	Shaft	32x3½	32x3½
E-M-F., 30	1,250	Tourabout	4	106 25	4	4½	4	Dry bat. & h. t. m.	Ring	Selective	3	Shaft	32x3½	32x3½
E-M-F., 30	1,250	Small tonneau	4	106 25	4	4½	4	Dry bat. & h. t. m.	Ring	Selective	3	Shaft	32x3½	32x3½
E-M-F., 30	1,250	Roadster	3	106 25	4	4½	4	Dry bat. & h. t. m.	Ring	Selective	3	Shaft	32x3½	32x3½
Franklin, G	1,850	Touring car	4	91½ 18	3¾	4½	4	High tension mag.	Disc	Progressive	3	Shaft	32x3	32x3½
Franklin, D	2,800	Touring car	5	106 28	4¾	4½	4	High tension mag.	Disc	Selective	3	Shaft	36x3½	36x4
Franklin, H	3,750	Touring car	7	127 43	4¾	4½	6	High tension mag.	Disc	Selective	3	Shaft	36x4	36x4½
Haynes, X1	2,900	Runabout	3	112 36	4¾	5	6	Dry bat. & h. t. m.	Band	Selective	3	Shaft	36x4	36x4
Haynes, X	3,000	Touring car	5 or 7	112 36	4¾	5	6	Dry bat. & h. t. m.	Band	Selective	3	Shaft	36x4	36x4
Hewitt, Truck	3,000	Truck	2 ton	109 24	5½	5	4*	High tension mag.	Cone	Planetary	2	Double chain	34x4	34x3½
Hewitt, Truck	5,000	Truck	5 ton	138 28	4½	5½	4	High tension mag.	Cone	Planetary	2	Double chain	36x4	36x5
Hewitt, Palmer-Singer, XXXII	2,250	Runabout	2	107 28	4½	4½	4	High tension mag.	Disc	Selective	4	Shaft	34x4	34x4
Hewitt, Palmer-Singer, XXXII	3,500	Landaulet	6	112 28	4½	4½	4	High tension mag.	Disc	Selective	4	Shaft	34x4	34x4
Hewitt, Palmer-Singer, LXII	3,250	Landaulet	6	126 57	4¾	5½	6	High tension mag.	Disc	Selective	4	Shaft	36x4½	36x4½
Hewitt, Palmer-Singer, LXII	3,500	Small tonneau	4	126 57	4¾	5½	6	High tension mag.	Disc	Selective	4	Shaft	36x4½	36x4½
Knox, O	2,900	Runabout	4	102 38	4¾	4½	4	Dry bat. & h. t. m.	Plate	Selective	3	Shaft	34x4	34x4
Knox, O	2,950	Small tonneau	4	114 38	4¾	4½	4	Dry bat. & h. t. m.	Plate	Selective	3	Shaft	34x4	34x4
Knox, O	3,000	Touring car	5	114 38	4¾	4½	4	Dry bat. & h. t. m.	Plate	Selective	3	Shaft	34x4	36x5
Knox, M	5,000	Touring car	7	127 48	5½	5½	4	Dry bat. & h. t. m.	Plate	Selective	3	Double chain	36x4½	36x5
Locomobile, 30	3,500	Touring car	5	120 32	4½	4½	4	Low tension mag.**	Cone	Selective	4	Shaft	34x4	34x4½
Locomobile, 30	3,500	Runabout	4	120 32	4½	4½	4	Low tension mag.**	Cone	Selective	4	Shaft	34x4	34x4½
Locomobile, 40	4,500	Touring car	7	123 40	5	5	4	Low tension mag.**	Cone	Selective	4	Shaft	36x4	36x4½
Locomobile, 40	4,500	Small tonneau	7	123 40	5	5	4	Low tension mag.**	Cone	Selective	4	Double chain	36x4	36x4½
Locomobile, 40	5,900	Limousine	7	123 40	5	5	4	Low tension mag.**	Cone	Selective	4	Double chain	36x4	36x5
Lozier, H	5,000	Touring car	7	124 44	5½	5½	4	Stor. bat. & h. t. m.	Disc	Selective	4	Shaft	36x4	36x5
Lozier, H	5,000	Briarcliff	5	124 44	5½	5½	4	Stor. bat. & h. t. m.	Disc	Selective	4	Shaft	36x4	36x4½
Lozier, H	6,000	Limousine	7	124 44	5½	5½	4	Stor. bat. & h. t. m.	Disc	Selective	4	Shaft	36x4	36x5
Lozier, I	6,000	Touring car	7	131 51	5¾	5½	6	Stor. bat. & h. t. m.	Disc	Selective	4	Shaft	36x4	36x5
Matheson, E	4,500	Touring car	7	128 40	5	5	6	Dry bat. & l. t. m.**	Disc	Selective	4	Double chain	36x4	36x5
Packard, 30	4,200	Touring car	7	123½ 40	5	5	4	Stor. bat. & l. t. m.	Ring	Progressive	3	Shaft	36x4	36x4½
Packard, 30	4,200	Close coupled	5	123½ 40	5	5	4	Stor. bat. & l. t. m.	Ring	Progressive	3	Shaft	36x4	36x4½
Packard, 30	4,200	Landaulet	7	123½ 40	5	5	4	Stor. bat. & l. t. m.	Ring	Progressive	3	Shaft	36x4	36x4½
Packard, 30	5,650	Runabout	3	123½ 40	5	5	4	Stor. bat. & l. t. m.	Ring	Progressive	3	Shaft	36x4	36x4½
Packard, 30	5,200	Limousine	7	123½ 40	5	5	4	Stor. bat. & l. t. m.	Ring	Progressive	3	Shaft	36x4	36x4½
Packard, 18	5,550	Open car	5	112 26	4 1-16	5½	4	Stor. bat. & l. t. m.	Ring	Progressive	3	Shaft	34x4	34x4
Packard, 18	4,400	Landaulet	7	112 26	4 1-16	5½	4	Stor. bat. & l. t. m.	Ring	Progressive	3	Shaft	34x4	34x4
Packard, 18	4,300	Limousine	7	112 26	4 1-16	5½	4	Stor. bat. & l. t. m.	Ring	Progressive	3	Shaft	34x4	34x4
Packard, 18	3,200	Runabout	3	102 26	4 1-16	5½	4	Stor. bat. & l. t. m.	Ring	Progressive	3	Shaft	34x3½	34x4
Packard, Truck	3,850	Truck	3 ton	144 32	4½	5½	4	Stor. bat. & l. t. m.	Ring	Progressive	3	Double chain	4-in.	4-in.

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In the Realm of Parts, Accessories and Tires

With the same actors a good stock company is able to produce a new and different play every week, and the accessory exhibitors who will appear at the Garden are preparing to stage a production which will be worthy the patronage of even the most hardened show goer and which will have all the elements of instruction and entertainment claimed by Artemus Ward for his famous, if erratic, "strictly moral" exhibition. Many new additions to the caste, in the way of concerns who did not appear at the Palace, will make the Garden accessory and parts division appear with all the freshness and novelty that can be desired.

As at other shows, tires and ignition apparatus lead all other individual classes of exhibits in the accessory division, followed by the group composed of such things as chains, frames, gears, bearings and parts. Numerous types of speed indicators will be shown, while the more prominent jobbers will suggest how very great is the variety of devices offered the motorist, by exhibits containing specialties of both foreign and domestic manufacture.

Many new magnetos will make their first public appearance among the ignition exhibitors, together with new forms of switches, coils, spark plugs, timers and distributers. The crackle of electric sparks will be heard on the elevated platform, in the balcony, in the second tier boxes, in the third tier boxes, in the concert hall, and in the basement. By means of a coil, timer and set of spark plugs eight times as big as the regular size, the Heinze Electric Co., of Lowell, Mass., will give even the hasty passerby a very clear impression of the action of the Heinze ignition apparatus. A stop at the stand will yield opportunity to see the new Heinze magnetos, in both high and low tension models. These have a low, circular form which in external appearance marks them as different from all others, and are suitable for mounting in many places where the usual high-built types cannot be squeezed in.

In the display of the Splitdorf Laboratory, New York City, will be seen a white marble testing board which is designed to bring out some of the finer points of motor car ignition. As a wire arm revolves, sparks jump from its outer end to small brass plates set at four intervals around the circular path which the arm itself describes. The rapidity of the arm's revolutions is controlled by means of a rheostat governing the motor which actuates it. A Splitdorf coil is mounted on the board and the switch which is incorporated in it may be turned either for battery or magneto ignition, so that the visitor can witness the effects of each in turn. To show how magneto generated sparks thrive under high compression, as against sparks deriving their initial activity from a battery, a small compression chamber is mounted on the board. This is arranged in connection with an air pump so that the pressure can be raised to correspond to that in a motor cylinder on the compression stroke, and the action of the spark on the two different systems can be observed through a small glass window in the compression chamber case. The Splitdorf magnetos themselves will be on view and the features of the Splitdorf system will be explained.

For the benefit of those who like to see the "insides" of things, the Remy Electric Co., of Anderson, Ind., will have one of the new Remy magnetos on the counter with the parts unassembled as a whole. This will show clearly how it is possible to construct a magneto in which the winding is stationary while the revolving armature has no other duty than to move the lines of force which cut the winding. The Remy device gives alternations of direction in the current which it supplies, thus meeting the difficulty in the pitting of coil vibrator points that is sometimes encountered in the use of current impulses all flowing in the same direction. The function of the magneto, under the Remy system, is to supply primary current to a single unit coil on the dash. The high tension current from the coil is sent to the various plugs in turn by means of a distributer embodied in the magneto itself.

Part of the exhibit of the Bosch Magneto Co., of New York, will be from the Paris show. Both high and low tension magnetos will be mounted on suitable stands so that their operation may be seen, including low tension "snap-off" models giving a good spark no matter how slowly the engine turns. The Bosch high tension magneto spark plugs will be on view and the magnetically operated make and break devices which the company produces. Another imported magneto will be revealed in the U. & H., marketed by the J. S. Bretz Co., of New York. This comes in numerous styles, some of which are equipped with a mechanism which gives a sharp "snap-off" at slow speed, but are driven in the regular way at high speed.

The Volta magneto, of the Witherbee Igniter Co., New York, is to be one of the leaders in the company's extensive exhibit of ignition devices, and will possess features that warrant attention. The balance of the exhibit will be made up of accumulators, handy lamps, timers, distributers, spark plugs and switches. Two new magnetos are to be disclosed by the Pittsfield Spark Coil Co., Dalton, Mass., and F. H. Wheeler, Indianapolis, Ind., respectively. The Pittsfield product is distinguished by a rather unique construction which makes it possible to remove the stationary winding with ease, while the type offered in the Wheeler presents a great deal for the sensationally low price asked. Numerous other makers will show either entirely new or improved models in both high and low tension magnetos, giving emphasis to the growing popularity of this means of ignition.

A steering wheel switch by which either the magneto or the battery circuit or both may be put into operation will appear as one of several novelties developed for the coming season by the Connecticut Telephone & Electric Co., Inc., of Meriden, Conn. To show the economical action of "Connecticut" coils and timers, a testing device with large indicator readings for the current consumption will be to the forefront. Kick switches, voltmeters, ammeters, and quick detachable primary and secondary terminals will complete the line.

Tire competition, as it will be indicated at the Garden show, continues to take the healthy form of a striving on the part of each manufacturer to produce the best possible quality. In addition to a showing of the numerous styles of Diamond tires, the Diamond Rubber Co., of Akron, O., will stage its demountable rim, which has been developed and improved from a racing car device to suitability for tourist service. The simplicity and security offered in the rim will be a matter of demonstration to those who are interested in the subject. The Diamond "grip" tires will form a feature of the exhibit.

Specimens from the large line of Hartford tires will be in evidence at the space of the Hartford Rubber Works Co., Hartford, Conn. The latest members of the Hartford family are the new, large size tires to fit ordinary 30x3½ and 32x3½ rims. The new "Standard Universal" quick detachable rim, suitable for either clincher or Dunlop tires, will also have a place. Morgan & Wright, of Detroit, Mich., will likewise feature this rim. Several new styles of Morgan & Wright tires have been perfected since show time a year ago, among which are the flat tread tires, which have increased width and thickness in the tread to give greater traction and improved puncture protection without any sacrifice of resiliency.

At the space of the G & J Tire Co., of Indianapolis, Ind., the display will be of a character calculated to impress upon show visitors the high quality and the variety of styles which are to be found in connection with G & J tires. The reason for the perfect fitting of G & J inner tubes will be expounded, and the record of service which the company's tires enjoy will be dwelt upon.

Without subordinating its tire showing or the importance of its quick acting rim, the Goodyear Tire & Rubber Co., of Akron, O., will put forward the Goodyear air bottle for public consideration. The air bottle, which supplies compressed air for in-

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flating tires without the use of a pump, is supplied in sizes ranging from little ones that can be stored under a runabout seat to large tanks that can be used in gaarges. One of the novel uses to which the bottles are put during show time is the supplying of compressed air for the big Gabriel horn "pipe organ," which may be expected to provide some of the music of the week.

As an "eye-catcher" at the exhibit of the Firestone Tire & Rubber Co., Akron, O., the trail of the tread on the company's new non-skid tire is to be hung up, preserved in wax on a plank. The all-rubber tread on this type is formed by the raised oblique lettering "Firestone Non-Skid," and the wax impression is convincing evidence of the nature of the road contact which results. The Firestone demountable rim, which may be used with either clincher or quick detachable tires, will be displayed. It consists of three parts, including the channel rim, a locking ring and the demountable portion containing the tire. The construction avoids narrow wedge shapes and sharp angles, so that the parts cannot rust together and make the rim difficult to operate. The full line of Firestone automobile and motor truck tires is to be on view.

Continental tires will, of course, be prominently represented and the well known Continental demountable rim will be ready either for demonstration to those not already familiar with its construction or for trials of speed by owners and chauffeurs who account themselves expert in quick changing. The Continental Caoutchouc Co., of New York, for the coming season offers not only round tread and "AC" flat tread styles, but the flat tread type course and the Continental non-skid, steel studded tires.

The showing of Michelin tires will be complete, and will include a wide choice in sizes, weight and treads. The Michelin Tire Co., Milltown, N. J., will also put forward the Michelin demountable rim, which in its operation is controlled by one turnbuckle. At the space of the Empire Automobile Tire Co., Trenton, N. J., the visitor may look for the red rubber Empire tubes and patches which that company is making popular, and a new, leather covered, steel studded tire, in which the studs of the tread are set within a cut, hardened steel washer. The Dow Tire Co., of New York, will be on hand with Dow tubes, concerning which the demonstrators will readily prove that punctures cannot bring deflation.

Closely associated with tires in its practical use, the Weed chain non-skid and traction device is to be disclosed not only in its standard form, but in some of its newer applications, as for motor buggy wheels. The Weed Chain Tire Grip Co., New York, promises no changes in the general character of the grips, but has greatly increased the mileage of service by adopting materials having a great resistance to wear. The Sager demountable rim, manufactured by the J. H. Sager Co., of Rochester, N. Y., will afford an example of a rim developed outside the tire makers' ranks. Speedy changes are possible with it, and every consideration of safety and tire fit has been taken into account. The rim is to have as companion exhibits the Sager spiral spring equalizer and the Sager protection bumper.

Speed indicators, while having a numerous representation, will have their best examples in such exhibits as that of the Jones Speedometer, the Warner Instrument Co., and the Stewart & Clark Mfg. Co. About 20 styles of Jones instruments will be shown, not including a taximeter which the company is producing and which is one of the first to be made on this side of the Atlantic. The prices of the speed indicators are this year in a range from $15 up to $100, while the concern will offer clocks and odometers as well. Changes have been made in the external appearance of the Warner Auto-Meter, but the principle of magnetic actuation for the speed indicating part of the mechanism is unchanged. Improvements will be disclosed in the odometer part of the instruments, however. A few magnetic by-plays may enliven the exhibit. The Stewart instruments will be arrayed in a series of models, from $15 up, and like those of the other makers will be found in combination with clocks and electric lights in some instances. A "multipolar induction type" speed indicator has been added to the Stewart line as a leader.

For lessening road shocks, the Truffault-Hartford shock absorber, made by the Hartford Suspension Co., of New York, will be offered in an exhibit which should prove one of the liveliest in the place. At the space of the Gabriel Horn Mfg. Co., of Cleveland, O., a Teddy bear will endure shocks or be saved from them, according to whether the Gabriel absorbing device is freed or attached. The company's main attraction will be the Gabriel horns and whistles, together with cut-out valves.

Exhibitors in the class seeking to interest the manufacturer of cars and to supply him with parts will include a big list. The Briscoe Mfg. Co., of Detroit, Mich., will have radiators; the Chandler Company, of Springfield, Mass, is to display samples of its etched metal name-plate work; chains will be represented by the Brampton products controlled by Charles E. Miller, of New York, and by the Baldwin, Diamond and Whitney brands. The Diamond Chain & Mfg. Co., of Indianapolis, Ind., in addition to its Diamond chains; will also have axles, while the Baldwin Chain & Mfg. Co., of Worcester, Mass., has planned to stage as a supplement to its Baldwin chains, a new steering gear.

The Springfield Metal Body Co.'s space has been taken for the purpose of a display suggesting the company's capability in body making, while the J. S. Bretz Company, New York, is to put on view F. & S. bearings, Hartford universal joints, and minor specialties such as Bowden wire, as well as the magnetos already mentioned. The Manufacturers Foundry Co., has arranged to show examples of its iron casting work, and the Wm. Cramp & Sons Ship & Engine Building Co., of Philadelphia, depends upon cast specimens of parts made in Parsons' manganese bronze, to attract attention from designers and engineers. Complete front and rear axles are to be staged by the American Ball Bearing Co., of Cleveland, O.; by the Timken Roller Bearing Axle Co., of Canton, O., and by the Standard Roller Bearing Co., of Philadelphia.

For the average visitor, however, exhibits of this order may not have the same attractions as are to be found at such a display as that of the Badger Brass Mfg. Co., of Kenosha and New York. The luster of shining brass, nickel and "patent leather" on its Solar lamps will not be less at the Garden than elsewhere. Attractive things will bunch thickly in the jobbers' spaces, such as the Motor Car Equipment Co., the New York Sporting Goods Co., and Charles E. Miller, where almost every class of motor car novelty or accessory is represented.

The list of exhibitors at the Garden show is as follows:

AUTOMOBILE EXHIBITS.

GASOLENE CARS.

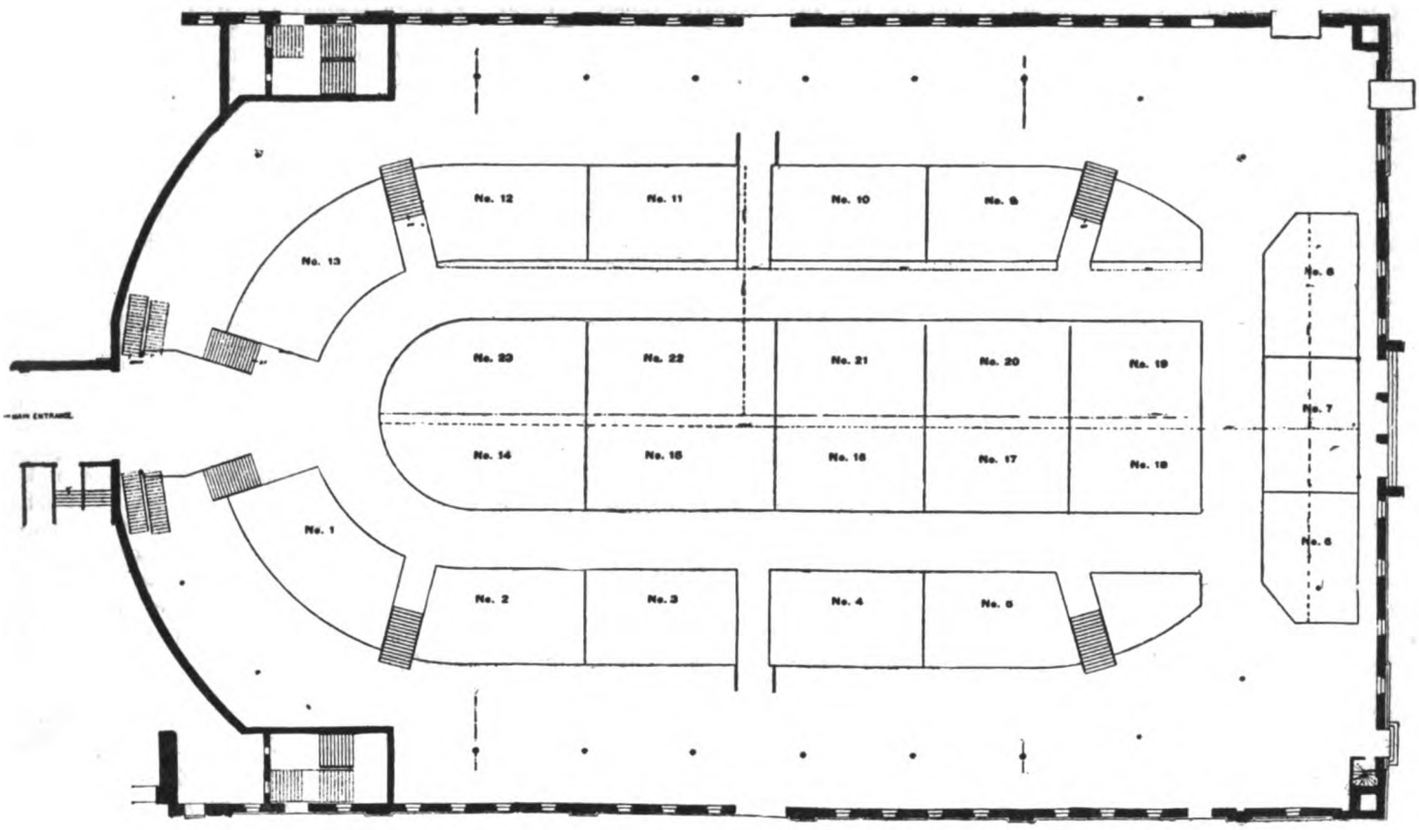
Main Floor.

Autocar Co., Ardmore, Pa., 7—Autocar.
Cadillac Motor Car Co., Detroit, Mich., 4—Cadillac.
Chalmers-Detroit Motor Co., Detroit, Mich., 17—Chalmers-Detroit.
Corbin Motor Vehicle Corporation, New Britain, Conn., 9—Corbin.
Electric Vehicle Co., Hartford, Conn., 12—Columbia.
Elmore Mfg. Co., Clyde, O., 3—Elmore two-cycle.
Everitt-Metzger-Flanders Co., Detroit, Mich., 8—E-M-F.
Franklin Mfg. Co., H. H., Syracuse, N. Y., 18—Franklin.
Knox Automobile Co., Springfield, Mass., 1—Knox.
Locomobile Company of America, Bridgeport, Conn., 19—Locomobile.
Lozier Motor Co., New York, 11—Lozier.
Matheson Motor Car Co., Wilkes-Barre, Pa., 2—Matheson.
Packard Motor Car Co., Detroit, Mich., 14—Packard.
Peerless Motor Car Co., Cleveland, O., 23—Peerless.
Pierce Co., Geo. N., Buffalo, N. Y., 15—Pierce.
Pope Mfg. Co., Hartford, Conn., 20—Pope-Hartford.
Pope Motor Car Co., Toledo, O., 5—Pope-Toledo.
Royal Motor Car Co., Cleveland, O., 6—Royal Tourist.
Stearns Co., F. B., Cleveland, O., 13—Stearns.
Stevens-Duryea Co., Chicopee Falls, Mass., 22—Stevens-Duryea.
Studebaker Automobile Co., South Bend, Ind., 10—Studebaker.
Winton Motor Carriage Co., Cleveland, O., 21—Winton.

Elevated Platform.

Apperson Bros. Automobile Co., Kokomo, Ind., 32—Apperson.
Haynes Automobile Co., Kokomo, Ind., 25—Haynes.
Hewitt Motor Co., New York, 27—Hewitt.

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GARDEN SHOW—PLAN OF MAIN FLOOR

Selden Motor Vehicle Co., Rochester, N. Y., 24—Selden.

Simplex Automobile Co., New York, 26—Simplex.

Walter Automobile Co., Trenton, N. J., 28—Walter.

White Company, The, Cleveland, O., 30—White steam cars.

Woods Motor Vehicle Co., Chicago, Ill., 29—Woods.

Electric Cars—Exhibition Hall, Madison Avenue Front.

Anderson Carriage Co., Detroit, Mich., 54—Detroit.

Babcock Electric Carriage Co., Buffalo, N. Y., 55—Babcock.

Bailey & Co., Inc., S. H., Amesbury, Mass., 53—Bailey.

Baker Motor Vehicle Co., Cleveland, O., 57—Baker.

Electric Vehicle Co., Hartford, Conn., 51—Columbia.

Rausch & Lang Carriage Co., Chicago, Ill., 52—R. L.

Studebaker Auto Co., South Bend, Ind., 56—Studebaker.

Waverley Co., The, Indianapolis, Ind., 50—Waverley.

Basement—Commercial Vehicle Depa.

Alden Sampson, 2d, Pittsfield, Mass., 84—Gasolene-Electric road train.

Champion Wagon Co., Owego, N. Y., 77—Champion electric.

Franklin Mfg. Co., H. H., Syracuse, N. Y., 78—Franklin gasolene truck.

General Vehicle Co., Long Island City, N. Y.—General electric trucks.

Hewitt Motor Car Co., New York City, 85—Hewitt gasolene trucks.

Knox Automobile Co., Springfield, Mass., 75—Knox gasolene cars.

Thomas Motor Car Co., Buffalo, N. Y.—Thomas taxicabs.

Studebaker Automobile Co., South Bend, Ind., 81—Studebaker electric trucks.

ACCESSORIES.

Basement.

American Thermo-Ware Co., New York City, 514—Goggles, hydrometers.

Auto Supply Mfg. Co., Brooklyn, N. Y. 516—Horns, tubing and brass specialties.

Burrowes Co., E. T., Portland, Me., 508—Spare wheels and wind shields.

Champion Co., Albert, Boston, Mass., 507—Ignition specialties.

Downing, C. J., New York City, 502—Supplies.

Healy Leather Tire Co., New York City, 501—Tires.

Hill Dryer Co., 513.

King Optical Co., Julius, New York City, 510—Goggles.

Kitsee Storage Battery Co., Scranton, Pa., 503—Storage batteries.

Lavalette & Co., New York City, 517—Magnetos and ignition specialties.

Livingston Radiator Co., New York City, 511—Radiators.

Merchant & Evans Co., Philadelphia, Pa., 524—Multiple disc clutches and automobile fittings.

Motz Clincher Tire & Rubber Co., New York City, 525—Tires.

New Departure Mfg. Co., Bristol, Conn., 521—Annular ball bearings.

Patterson, Gottfried & Hunter, New York City, 500—Tool Outfits and specialties.

Perfection Spring Co., Cleveland, O., 518—Springs.

Post & Lester Co., The, Hartford, Conn., 526—Supplies and specialties.

Stanley & Patterson, New York City, 522—Batteries and tools.

Stromberg Motor Devices Co., Chicago, Ill., 509—Carburetters.

Van Guard Mfg. Co., Joliet, Ill., 523—Windshields.

Vehicle Apron & Hood Co., Columbus, O., 513—Aprons, hoods, collapsible buckets.

White & Bagley Co., The, Worcester, Mass., 512—Lubricants, soap.

Comptoir D'Innovations Pour Auto, New York City, 557—Specialties.

Faultless Auto Tube Co., New York City, 566—Multiple inner tubes.

G. L. Economizer Co., New York City, 556-A—Fuel economizers.

Garvin Machine Co., New York City, 565—Pumps.

Nathan Novelty Mfg. Co., New York City, 559—Tire covers and cases.

Noonan Tool & Machine Works, Roome, N. Y., 560—Tools.

Philadelphia Storage Battery Co., Philadelphia, Pa., 563—Storage batteries.

Pratt & Whitney Co., Hartford, Conn., 561—Machinery.

Troy Carriage & Sun Shade Co., Troy, O., 564—Tops.

Elevated Platform.

Ajax-Grieb Rubber Co., New York City, 134—Ajax tires.

American Ball Bearing Co., Cleveland, O., 164—Ball bearings.

American Electrical Novelty & Mfg. Co., 110—Ever Ready Batteries, lamps and tire specialties.

Atwater-Kent Mfg. Works, Philadelphia, Pa., 117—Igniters and timers.

Atwood-Castle Co., Amesbury, Mass., 156—Lamps.

Autocoil Co., Jersey City, N. J., 123—Coils and ignition systems.

Auto Improvement Co., New York City, 109—Self starting devices and motor specialties.

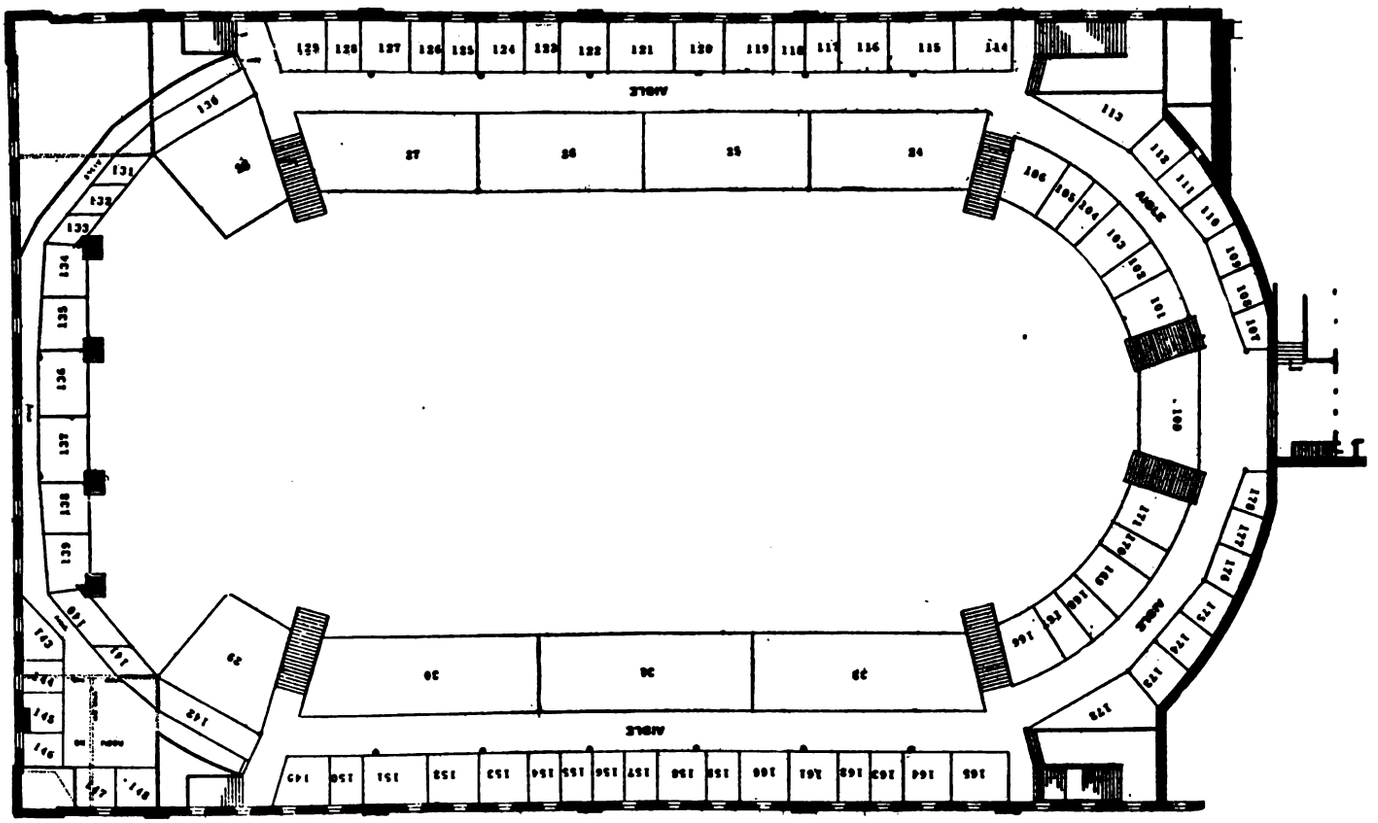
Avery Portable Lighting Co., Milwaukee, Wis., 145—Gas tanks.

Badger Brass Mfg. Co., New York City and Kenosha, Wis., 165—Solar lamps and acetylene generators.

Baldwin Chain and Mfg. Co., Worcester, Mass., 118—Baldwin chains and recoil check.

Brennan Mfg. Co., Syracuse, N. Y., 160—Motors, pumps.

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GARDEN SHOW—PLAN OF ELEVATED PLATFORM

Bowser & Co., S. F., Ft. Wayne, Ind., 113—Tanks, measuring pumps and gasolene storage systems.

Briscoe Mfg. Co., Detroit, Mich., 107—Radiators and fittings.

Brown-Lipe Gear Co., Syracuse, N. Y., 105—Transmission, differential and steering gears.

Byrne, Kingston & Co., Kokomo, Ind., 157—Kingston carburetters.

Connecticut Telephone and Electric Co., Meriden, Conn., 128—Spark coils, switches and ignition specialties.

Consolidated Rubber Tire Co., New York City, 136—Tires.

Continental Caoutchouc Co., New York City, 130—Continental tires.

Cooks Sons, Adam, New York City, 144—Lubricants.

Cramp & Sons Ship & Engine Co., Wm., Philadelphia, Pa., 158—Bronze castings and automobile parts.

Diamond Chain and Mfg. Co., Indianapolis, Ind., 167—Axles, chains, transmissions, sprockets.

Diamond Rubber Co., Akron, O., 101—Diamond tires.

R. E. Dietz Co., New York City, 116—Lamps.

Dixon Crucible Co., Joseph, Jersey City, N. J., 174—Graphite and lubricants.

Dow Tire Co., New York City, 126—Dow tires.

Duff Mfg. Co., Pittsburg, Pa., 140—Jacks.

Chandler Co., Inc., The, Springfield, Mass., 141—Name plates, hub caps and monograms.

Empire Automobile Tire Co., Trenton, N. J., 122—Empire tires.

Firestone Tire & Rubber Co., Akron, O., 149—Firestone tires.

Fisk Rubber Co., Chicopee Falls, Mass., 166—Fisk tires.

G & J Tire Co., Indianapolis, Ind., 106—G & J tires.

Gabriel Horn Mfg. Co., Cleveland, O., 173—Gabriel exhaust horns.

Gilbert Mfg. Co., New Haven, Conn., 108—Tires, jackets, lamps, covers, and rubber cloth specialties.

Goodrich Co., B. F., Akron, O., 100—Goodrich tires.

Goodyear Tire & Rubber Co., Akron, O., 163—Goodyear tires.

Gray & Davis, Amesbury, Mass., 114—Lamps.

Ham Mfg. Co., C. T., Rochester, N. Y., 176—Lamps.

Hardy Co., R. E., The, 133—Spark plugs.

Harris Oil Co., A. W., Providence, R. I., 159—Lubricants.

Hartford Rubber Works, Co., Hartford, Conn., 171—Hartford tires.

Hartford Suspension Co., Jersey City, N. J., 152—Truffault-Hartford shock absorbers.

Heinze Electric Co., Lowell, Mass., 175—Coils and ignition equipment.

Herz & Co., New York City, 112—Timers, plugs and ignition specialties.

Globe Machine & Stamping Co., Cleveland, O., 147—Metal stamping specialties.

Hyatt Roller Bearing Co., Harrison, N. J., 178—Roller bearings.

Jones Speedometer, New York City, 127—Speedometers, annunciators, odometers and specialties.

Janney-Steinmetz & Co., Philadelphia, Pa., 148—Spark plugs, tanks, wrenches.

Jones & Co., Phineas, Newark, N. J., 162—Rims, wood wheels.

Leather Tire Goods Co., Newton Upper Falls, Mass., 143—Non-skid covers.

Light Mfg. & Foundry Co., Pottstown, Pa., 121—Aluminum parts and castings.

Manufacturers Foundry Co., Waterbury, Conn., 154—Castings.

Michelin Tire Co., Milltown, N. J., 142—Michelin tires.

Morgan & Wright, Detroit, Mich., 129—Morgan & Wright tires.

Mosler & Co., A. R., New York City, 172—Spark plugs.

Motsinger Device Mfg. Co., Pendleton, Ind., 155—Ignition systems.

N. Y. & N. J. Lubricant Co., New York City, 119—Lubricants.

Oliver Mfg. Co., Chicago, Ill., 150—Jacks and accessories.

Pennsylvania Rubber Co., Jeannette, Pa., 153—Pennsylvania tires.

Pittsfield Spark Coil Co., Dalton, Mass., 168—Ignition systems.

Remy Electric Co., Anderson, Ind., 125—Magnetos.

Republic Rubber Co., Youngstown, O., 139—Tires.

Sager Co., J. H., Rochester, N. Y., 132—Supplementary springs.

Shelby Steel Tube Co., Pittsburg, Pa., 104—Cold drawn steel tubing.

Spicer Universal Joint Mfg. Co., Plainfield, N. J., 131—Universal joints.

Splitdorf, C. F., New York City, 102—Timers, distributers, coils and ignition specialties.

Standard Welding Co., Cleveland, O., 163—Tubing and electrically welded parts.

Swinehart Clincher Tire & Rubber Co., Akron, O., 124—Swinehart tires.

Timken Roller Bearing Axle Co., Canton, O., 151—Roller bearings and axles.

Veeder Mfg. Co., Hartford, Conn., 115—Tachometers and tachodometers.

Vacuum Oil Co., Rochester, N. Y., 111—Lubricants.

Valentine & Co., New York City, 177—Varnishes.

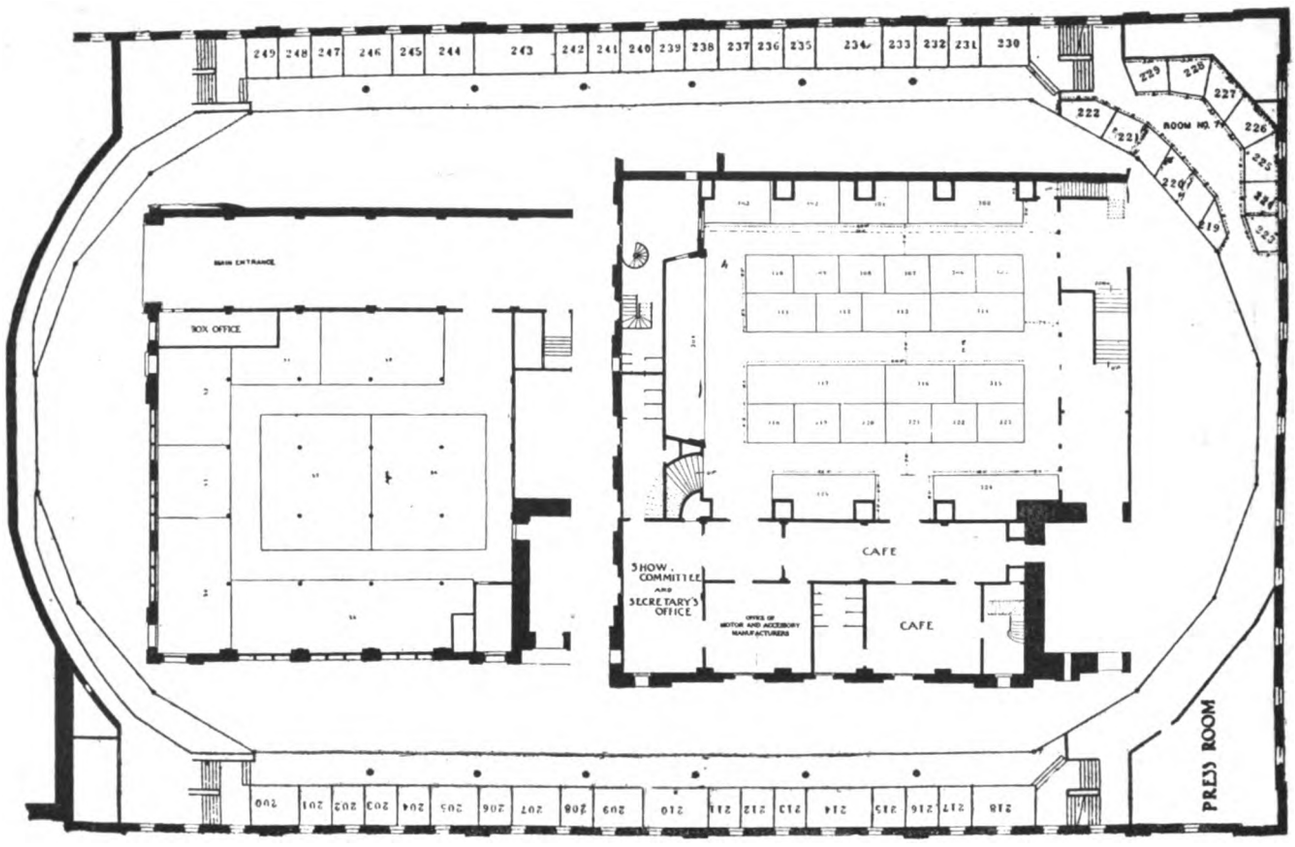
Warner Gear Co., Muncie, Ind., 161—Gears and parts.

Warner Instrument Co., Beloit, Wis., 120—Speed indicators and odometers.

Weed Chain Tire Grip Co., New York City, 135—Non-skid tire chains.

Wheeler, F. H., Indianapolis, Ind., 137—Schebler carburetters.

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GARDEN SHOW—BALCONY, EXHIBITION AND CONCERT HALLS

Whitney Mfg. Co., Hartford, Conn., 170—Whitney chains and keying systems.

Witherbee Igniter Co., New York City, 138—Witherbee storage batteries and Wico ignition specialties.

Balcony.

A-Z Co., The, New York City, 230—Hoods, radiators and tanks.

Allen Auto Specialty Co., New York City, 207—Tire jackets and specialties.

American Thermos Bottle Co., New York City, 228—Thermos bottles.

Anderson Forge Machine Co., Detroit, Mich., 240—Crankshafts, gears.

Apple Electric Co., Dayton, O., 217—Ignition systems.

Atlas Rubber Co., 239—

Austro-American Separator Co., Cleveland, O., 224—Gasolene funnels.

Auto Pump Co., Springville, N. Y., 219—Pumps.

Benford, E. M., Mt. Vernon, N. Y., 222—Spark plugs.

Bretz Co., J. S., New York City, 214—Ball bearings and high tension magnetos.

Buda Foundry & Mfg. Co., Chicago, Ill., 242—Jacks.

Burnett Compound Spring, Incorporated, Newark, N. J., 241—Suspension springs.

Champion Ignition Co., Flint, Mich., 240—Ignition systems.

Cooks Standard Tool Co., Kalamazoo, Mich., 203—Standard jacks.

Cormack & Co., M. H., 247—

Eastern Carbon Works, Jersey City, N. J., 206—Dry batteries.

English & Mersick Co., New Haven, Conn., 221—Automobile hardware.

Franklin Co., H. H., Syracuse, N. Y., 232

Geiszler Bros., New York City, 248—Batteries.

Havoline Oil Co., New York City, 216—Lubricants.

Haws, Geo. A., New York City, 201—"Panhard oil."

High Frequency Ignition Coil Co., Los Angeles, Cal., 231—Ignition systems.

Hopewell Bros., Cambridge, Mass., 213—Tire cases, covers, robes.

Hydraulic Oil Storage & Distributing Co., Detroit, Mich., 212—Tanks, "Snells" storage systems.

Jarman & Baker, New York City, 237—Drip pans, racks.

Jeffrey-Dewitt Co., Newark, N. J., 208—Spark plugs.

Johnson & Co., Isaac G., Spuyten Duvil, N. Y., 218—Forgings and castings.

K. W. Ignition Co., Cleveland, O., 223—Magnetos, spark plugs.

Keystone Lubricating Co., Philadelphia, Pa., 233—Lubricants.

McCord Mfg. Co., Chicago, Ill., 200—Radiators.

Mann Co., Leon, New York City, 234—Raincoats.

Metal Stamping Co., New York City, 211—Radiators.

Miller, Charles E., New York City, 243—Brampton chains, supplies and accessories.

Miller & Sons, Wm. P., Long Island City, N. Y., 249—Lubricants.

Morrison-Ricker Mfg. Co., Grinnell Ia., 209—Gloves and gauntlets.

Mutty Co., L. J., Boston, Mass., 229—Rubber cloth and imitation leathers.

New York Coil Co., New York City, 226—Spark coils.

N. Y. Sporting Goods Co., New York City, 210—Accessories.

Philadelphia Timer & Machine Co., Philadelphia, Pa., 236—Timers.

Pierson Motor Supply Co., Brooklyn, N. Y., 215—Supplies.

R. I. V., Inc., New York City, 373—Annular ball bearings.

Reilly & Son, Philadelphia, Pa., 235—Lap robes.

Robinson & Sons Co., Wm. C., Brooklyn, N. Y., 203—Lubricants.

Rushmore Dynamo Works, Plainfield, N. J., 220—Acetylene lamps and generators.

Shaler Co., C. A., Waupum, Wis., 202—Electric vulcanizers.

Smith Co., A. O., Milwaukee, Wis., 205—Gears and parts.

Trenton Rubber Mfg. Co., Trenton, N. J., 244—Inner tubes, "Thermoid" brake lining.

Voorhees Rubber Mfg. Co., Jersey City, N. J., 227—Rubber hose and packing.

Winn, Wm. R., 225—

Young, O. W., Newark, N. J., 245—Tire cement, lubricants, soaps.

Second Tier Boxes.

Allers Co., H. A., 405—

Bosch Magneto Co., Robt., New York City, 400-403—Ignition systems.

Columbia Nut and Bolt Co., Bridgeport, Conn., 404—Lock nuts.

Duffy Grease Co., New York City, 417—Lubricants.

Chicago Windshield Co., Chicago, Ill., 420—Windshields.

Caloris Mfg. Co., 418—Caloris bottles.

Davis-Bournonville Co., 411-412.

Erie Foundry Co., 414.

Flentje, Ernest, Cambridge, Mass., 415—Shock preventers.

Perfection Wrench Co., Port Chester, N. Y., 413—Wrenches and tools.

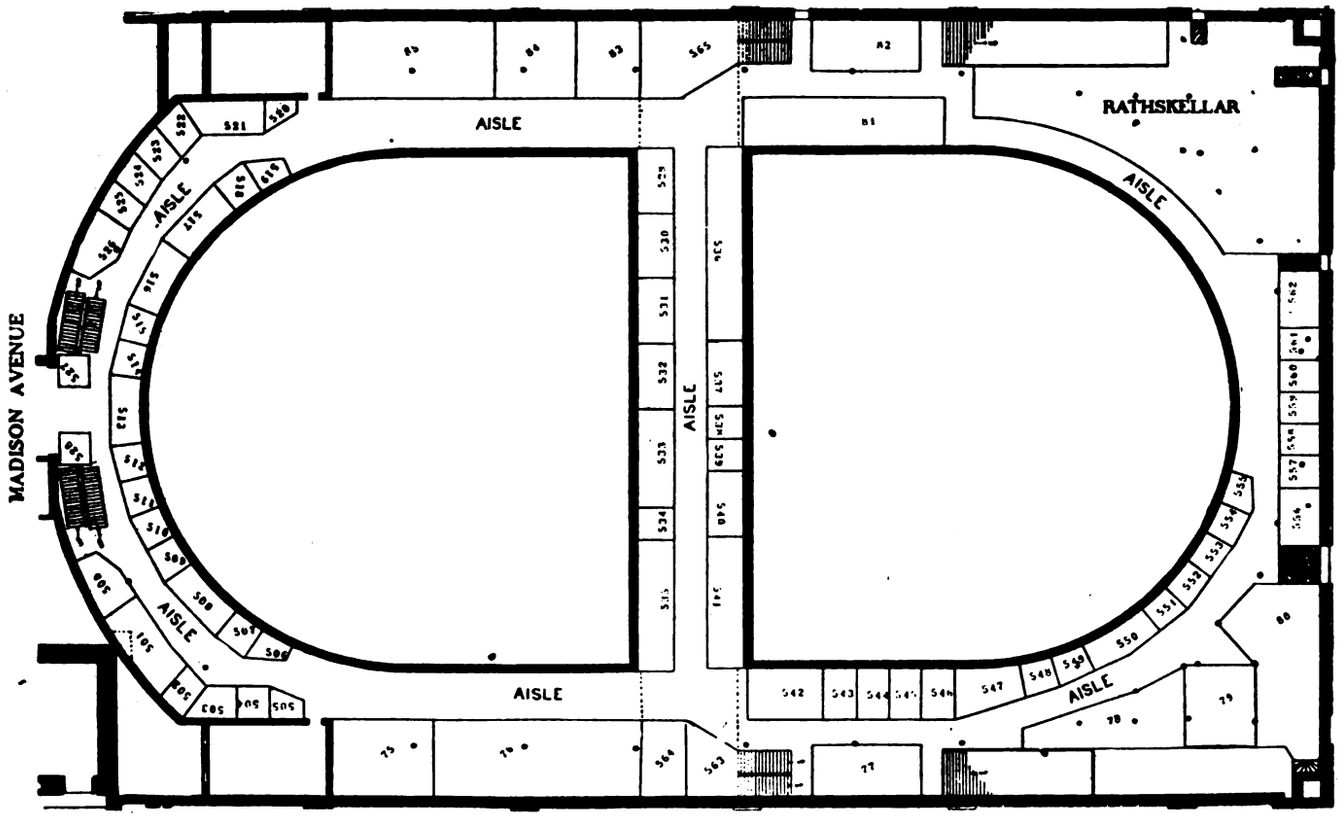
Reeves & Son, Paul, Philadelphia, Pa., 407—Bearings, castings.

Samson Leather Tire Co., New York City, 409-410—Tires.

Seamless Rubber Co., New Haven, Conn., 408—Rubber goods.

Sireno Co., New York City, 416—Electric horns.

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GARDEN SHOW—PLAN OF BASEMENT

Traver Blow-Out Patch Co., New York City, 406—Tire repair outfit.

Union Battery Co., Belleville, N. J., 419—Batteries.

Third Tier Boxes.

American Electric Fuse Co., 431—Igniter and magnet wire.

Auto Tire Inflating Co., Brooklyn, N. Y., 430—Tire pumps.

Brictson, A. O., 440.

Elite Mfg. Co., Ashland, O., 429—Jacks and pumps.

H. & C. Bottle Mfg. Co., 439—Vacuum bottles.

Lucas & Co., John, New York City, 438—Paints.

"Lux" Auto Lamp Mfg. Co., 442—Lamps.

Marko Storage Battery Co., Brooklyn, N. Y., 444—Batteries.

Mica Core Mfg. Co., 427—Insulation.

Nadall Mfg. Co., Chicago, Ill., 428—Demountable rims.

Quincy-Manchester-Sargent Co., Plainfield, N. J., 443—Auto Wrenches and steel castings.

Standard Leather Washer Mfg. Co., Newark, N. J., 441—Leather washers.

Vesta Accumulator Co., Chicago, Ill., 425—Accumulators.

Concert Hall.

American & British Mfg. Co., Bridgeport, Conn., 324—Frames, motors, axles and parts.

Chase & Co., L. C., Boston, Mass., 301—Top and cover leathers.

Coes Wrench Co., Worcester, Mass., 320—Wrenches.

Columbia Lubricants Co. of New York, 303—Lubricants.

Cowles & Co., C., New Haven, Conn., 319—Lamps, monograms and boquet holders.

Edmunds & Jones Mfg. Co., Detroit, Mich., 313—Lamps and specialties.

Electric Storage Battery Co., Philadelphia, Pa., 315—Accumulators.

Gemmer Mfg. Co., Detroit, Mich., 318—Steering gear and parts.

Hess-Bright Mfg. Co., Philadelphia, Pa., 304—Bearings.

Hoffecker Co., The, Boston, Mass., 308—Speed indicators.

Lunkenheimer Co., The, Cincinnati, O., 306—Lubricators, grease cups, pet-cocks.

Manhattan Screw & Stamping Works, New York City, 316—Generators, horns, lamps.

Mezger, C. A., Inc., New York City, 323—"Soot-proof" spark plugs.

National Battery Co., New York City, 307—Dry batteries.

National Carbon Co., New York City, 305—Batteries.

Never Miss Spark Plug Co., Lansing, Mich., 321—Plugs, ammeters, battery connections, chain tools.

Noera Mfg. Co., Waterbury, Conn., 302—Specialties.

Pantasote Co., The, New York City, 314—Top and upholstery leather.

Rands Mfg. Co., Detroit, Mich., 325—Tops and accessories.

Randall-Faichney Co., The, Boston, Mass., 312—Oil guns.

Sprague Umbrella Co., Norwalk, O., 300—Tops and windshields.

Springfield Metal Body Co., Springfield, Mass., 317—Bodies and tops.

Standard Roller Bearing Co., Philadelphia, Pa., 311—Ball bearings and parts.

Stewart & Clark Mfg. Co., Philadelphia, Pa., 322—Speed indicators.

Westchester Appliance Co., Yonkers, N. Y., 309—Batteries and coils.

MOTORCYCLES.

Basement.

American Motor Co., Brockton, Mass., 535—M-M.

Aurora Automatic Machinery Co., Aurora, Ill., 542—Thor.

Auto-Bi Co., The Buffalo, N. Y., 545—Auto-Bi.

Baker & Co., F. A., New York City, 537—Motorcycles and supplies.

Bicycling World Co., New York City, 539—Bicycling World & Motorcycle Review.

Consolidated Mfg. Co., Toledo, O., 531—Yale-California.

Crouch Motor Co., Stoneham, Mass., 554—Crouch.

Curtiss Mfg. Co., G. H., Hammondsport, N. Y., 550—Curtiss.

Eclipse Machine Co., Elmira, N. Y., 551—Eclipse coaster brakes.

Excelsior Supply Co., Chicago, Ill., 532—Excelsior.

Harley-Davidson Motor Co., Milwaukee, Wis., 544—Harley-Davidson.

Hendee Mfg. Co., Springfield, Mass., 536—Indian.

Hornecker Motor Mfg. Co., Genesee, Ill. 543—Torpedo.

Merkel-Light Motor Co., Milwaukee, Wis., 529—Merkel-Light.

Mesinger Mfg. Co., H. & F., New York City, 549—Saddles.

Motor Car Equipment Co., New York City, 547—Spark plugs.

National Sales Corporation, New York City, 540—Peugeot motors.

Reliance Motorcycle Co., Owego, N. Y., 553—Reliance.

N. S. U. Motor Co., New York City, 533—N. S. U.

New Era Gas Engine Co., Dayton, O., 552—New Era.

Ovington Motor Co., New York City, 540—F. N.

Pierce Cycle Co., Buffalo, N. Y., 538—Pierce.

Reading Standard Mfg. Co., Reading, Pa., 541—Reading Standard.

Royal Motor Co., Worcester, Mass., 555—Royal.

Walton Motor Co., Inc., Lynbrook, L. I., 548—Midget Bi-Car.

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CHICAGO PROMISES A GREAT SHOW

Many New Models to be Unveiled and New Accessories Displayed—Gorgeous Effects in Decorative Scheme.

With the opening of the Chicago Show only a little over three weeks off, plans for its staging are being rushed to conclusion with customary vigor. Although the total number of motor vehicle exhibitors thus far enrolled is 92, according to the official figures, no less than 15 makers of pleasure cars have been turned away for lack of more space, and nearly as many makers of utility machines. Indeed, owing to the demand for additional space, the management made an unsuccessful attempt to secure space in nearby buildings. Tattersall's, where the commercial vehicle section was located last year, was among the possibilities considered, but was rejected because of its inaccessibility and poor condition. An attempt also was made to secure the furniture building on the corner below the Colliseum, but without success. As a result, such concerns as the Electric Vehicle Co., Palmer & Singer, the International Harvester Co., and the Royal Tourist Co., which made late application for space, have been crowded out. The show will be no larger and no smaller than the last, because the limits of the building have already been reached, but the number of exhibitors will be somewhat increased by reason of a rearrangement of the center floor of the Coliseum.

Despite the unfortunate feature mentioned, Chicago's exhibition will maintain its former prestige in unveiling a number of cars not presented at the earlier eastern shows, as well as a host of accessories which will be on view for the first time. Of the hitherto-unshown cars there will be no less than 24 this year, embracing the exhibits of the American Locomotive Co., Bartholomew Co., Buick Motor Co., T. B. Jeffery & Co., Olds Motor Works, Ricketts Auto Works, Auburn Auto Co., Berliet Import Co., Columbus Buggy Co., Dorris Motor Car Co., Fort Pitt Motor Mfg. Co., Kiblinger Co., Kimball & Co., Meteor Motor Car Co., Model Automobile Co., Staver Carriage Co., Streator Motor Car Co., Bendix Co., Clark-Hatleld Auto Co., Emancipator Auto Co., Mier Carriage & Buggy Co., Randolph Motor Car Co., Rider-Lewis Motor Car Co., Owen Thomas Motor Co.

The decorative scheme chosen it is confidently expected will eclipse anything hitherto attempted in this connection. Somewhat the same plan as that of last year will be utilized, but with certain additional features calculated to change its character and greatly heighten the effect. It is stated that this probably will be the last show—at any rate for a time—decorated in this style, for plans for 1910 of an entirely different character are already under way. Indeed, some of its features will, for experimental purposes, be introduced this season.

The use of papier mache and staff which was so largely employed last year will again be brought into prominence, but with an alteration in appearance caused by its coloring, which will be bronze or old gold, according to the fancy of the visitor. The building will be divided into four groups of equal size with aisles in the form of a cross. Down the center of each group, dividing it into two long rows, will be massive pillars bearing aloft, at heights ranging from 9 to 15 feet, representations of bronze statuary, all bearing the imprint of automobiling—sport, utility and commerce combined. The two ends will present racing scenes.

The principal feature will be at the center of each group. At a height of 15 feet will be a massive wheel, six feet in diameter, and below it the figure of a man of heroic size, depicted in the act of giving it impetus. Stretching to the right and left will be an arch curved outwardly at its ends, mounting two pictures of automobile scenes, and two circular and two oblong stained glass windows, the remainder backed with green silk and golden trimmings.



STAINED GLASS DECORATIONS FOR CHICAGO SHOW

Along the top of the section, above a red silk background, on which will be white and gold raised letters, runs a white flower-box, filled to a height of two feet with real ferns and flowers. The same general effect will be carried out in all parts of the building. None of the walls or roof will be visible—all will be paneled. From the ground up to a height of 10 feet will be wooden panels of mission style, and thence, to the front of the gallery, will be panels of lighter design—probably in light green and white. The entire roof will be similarly treated.

To electric lighting more than the usual attention will be given. No less than 64 flaming arcs are to be used, in addition to the regular lighting equipment and smaller decorative effects, such as 250 12-inch globes and a great number of smaller incandescent lights.

HOW TIRES CAUSE ROAD DAMAGE

It is by Abrasion and not by Suction Engineer Lewis Asserts—His Views on Durable Highway Construction.

That the destruction of the highways which is so freely attributed to the tremendous vogue of the automobile is caused not by the "suction" of the tires, but rather by the severe abrading influence of the tires caused by their tractive effort, is the opinion of chief engineer Nelson F. Lewis of the Board of Estimate and Apportionment of New York City. The popular theory that the lifting action of the tire treads serves to draw the binding material and dust away from the bed of the road is, in engineer Lewis' opinion, disproved by the fact that while the front wheels of a moving car raise little or no dust a great amount is rolled up by the hind wheels, upon which the entire tractive or driving force of the vehicle is concentrated. The opinion was brought out in connection with his report to Mayor McClellan in which he also discusses various methods of treating highway surfaces to preserve them from surface abrasion and promote the much-desired dustless quality.

In his report he contrasts the pavement systems of New York with those of Paris and London and discusses four methods of treating roads. Of the latter, the chief engineer is in favor of the mixing method, in which stone, which is to form the wearing surface, is thoroughly coated with hot bituminous cement. This is spread on the road while hot and rolled as is the case with ordinary first layers of asphalt. Rhode Island and other places have had many miles of road constructed in this way and while it is the most expensive method, Lewis declares it is more likely than any other to produce a road which is structurally and inherently dustless.

Nice Legal Point on Tail Lights.

Tail lights on automobiles are not necessary in Des Moines, Iowa, if the red lights on the sides can be seen from the rear. This is the result of a decision rendered by Judge McHenry of the district court. A number of automobilists who were arrested for driving around the city streets at night without tail lights, and whom Police Judge A. K. Stewart fined, appealed to the higher tribunal. Judge Stewart appeared to sustain his own action and contended that to comply with the law the automobiles must have lights hung on the rear. But Judge McHenry, after a close scrutiny of the State law, found that the only requirement was that a red light shall show to the rear of the car. There was nothing to demand that the light must hang at the rear end of the car, so he dismissed all the cases.

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How Makers Persuade Prospective Purchasers

However much a possible customer may be impressed with the appearance, mechanical ingenuity or other visible quality of a car, he invariably inquires into the features wherein it differs from other cars, whether in or out of its own particular class. The question of price is in many respects the governing factor in the sale of cars, regardless of the actual amounts asked for them by their makers. The intending buyer always wants to know how much he is getting for his money—it matters not whether it be expressed in hundreds or thousands, and the salesman is constantly beset with the difficulty of expounding to the non-technical caller the precise advantages of the car which he represents. He must be an instructor in applied mechanics as well as a vendor of manufactured wares, in order to make his mark in his calling.

Because as the number of cars in the market multiplies and their features gradually are assimilated into the unity which is proudly known as standardization, the public also is absorbing a vast and at times embarrassing amount of mechanical knowledge, the work of the motor car salesman is surrounded with tremendous perplexities. If the car he wishes to sell happens to be one of thoroughly standard characteristics, he is quite likely to encounter a bright "prospect" who has discovered in the course of his travels another car of similar build in many respects which also possesses standard features. To convince him of the superiority of his own product, the salesman must have recourse to a deal of art at times. But always he must know wherein and in exactly what details it differs from other cars.

Since salesmen are not engineers, even as few engineers possess the qualifications requisite to successful salesmanship, he must rely in large measure upon the selling department of the producing company in equipping himself for his campaign. As instrumental in shaping the course of their representatives, therefore, and hence, as more or less responsible for their relative degrees of success, it is the attitude of the manufacturers themselves which, in the last analysis determines the selling methods employed in marketing the various products.

In order to sell cars, it is no longer necessary that a machine shall possess a number of features which are not found on any other. Such is the power of the slogan "standardization" over the average mind, that it frequently happens that a car possessing striking differences from others is looked upon in the slanting light of an experiment. Yet this is not always the case. Generalities are impossible in the selling of any wares, and the really successful sales manager finds it expedient to leave a great deal to the discretion of the individual representative. At the same time, certain selling platforms are maintained by all the manufacturers, and a comparison of these proves both interesting and instructive.

Recently the Motor World published a symposium of statements bearing upon this problem which came from a number of manufacturers whose products were displayed at the automobile show in Grand Central Palace. Following is a similar array of principles enunciated by members of the Association of Licensed Automobile Manufacturers. The communications from which these statements are drawn were in reply to the uniform inquiry: "Wherein and in exactly what details does your car differ from others? In endeavoring to make sales, upon what points do you lay the most stress?"

H. H. Franklin Mfg. Co.—"Air-cooling of the engine constitutes the most significant and important difference between the Franklin motor car and most other automobiles. In the process of air-cooling an essential factor, and one distinctive of the Franklin, is shown in the heat radiating flanges of thin sheet metal which surround the cylinders. Three other features of the engine are special developments of the Franklin. They are the auxiliary exhaust, the dome head of the cylinder and the concentric intake and exhaust valves. Each contributes toward making air-cooling a success and the motor efficient. The auxiliary exhaust, at the bottom of the cylinder, takes off 71 per cent. of the burned gases immediately upon the completion of the power stroke, leaving only a small percentage to pass off through the main exhaust. This main exhaust valve is in the cylinder head and is concentric with the intake valve. The concentric arrangement makes possible the use of large valves in a minimum of space so that the charge may be large and a maximum of power be obtained. This arrangement of valves makes possible the dome shape of the cylinder head, which reduces the interior surface without decreasing the exterior, or heat radiating surface. The dome head has no nooks in which dead gas can lurk. This insures full clearing of the cylinder and a full charge of fresh gas."

The Haynes Automobile Co.—"The motor is of heavy solid construction throughout; it is equipped with roller bearings; the oil pump and oil reservoir are located in the crank arms, and therefore take up no room; we use a constricting band clutch, which we have had in successful operation for nearly 14 years; our rear axle is driven by means of a roller pinion and bevel sprocket instead of the usual bevel gears; our brakes are all external, and are duplicates in construction throughout; the brake drums each hold about one quart of water, which can be added when required for long hills. In making sales we call special attention to the above features, and particularly to the oiling system and roller bearings in the motor. We also lay much stress upon the roller pinion drive, since it is free from breakage, wears indefinitely and makes no noise. We lay special stress upon the brakes, since the safety of the driver depends upon this feature. The water cooling arrangements permit of descending long and steep hills, not only without danger of burning out the brakes, but without overheating since the temperature of the brake drums can never rise above the boiling point of water so long as there is any water in the drum."

Apperson Bros.' Automobile Co.—"In making sales we lay stress on several points: Apperson Bros. were practical mechanics before automobiles were on the market. The Apperson Bros. designed and built the first car placed upon the market commercially in America. For over 15 years Apperson Bros. have been building constantly high grade automobiles, and they have had more experience in this line of business than any other manufacturer. Experience ought to and does count, and as a result of experience in automobile construction, as a result of years of experience in the selection of and treatment of steels and other component parts of automobiles, Apperson Bros. today are turning out for use under American road conditions, the best cars built in the world."

Stevens Duryea Co.—"We claim that the three point suspension and unit power plant, originated by Stevens Duryea Co. and copied by a large number of American manufacturers and some foreign manufacturers, is one of the best forms of automobile construction. We were the originators of this idea and in proof that it is the right form of automobile construction, we have the attempted imitations by scores of manufacturers. The Stevens Duryea Co., which is part of the J. Stevens Arms & Tool Co., gun makers of 58 years standing, expert workers in high grade steel, did not have to learn how to handle materials which enter automobile construction, as the majority of manufacturers did, as this was the natural line of their work. The testing out of automobiles before they are delivered to the agent or buyer by us, we believe, is the most thorough and complete of any automobile manufacturer in this country, if not in the world."

The Corbin Motor Vehicle Corporation.—

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"Ours is the only medium priced car which is mounted entirely on imported ball bearings. It is the most accessible car in the world and everything simplified as much as possible. It is the lightest car in its class tending toward economy in tires and ease of handling. By tests it has proved to be the most efficient 30 horsepower car and has repeatedly defeated all makes in fuel consumption for weight carried. We have built practically the same car for the last four years, making changes only in the size of the motor and in a great many cases retaining the same parts which were used in our first cars. The transmission, steering gear, and rear axle have been unchanged for three years and we find it is not necessary to make new types of cars from year to year. It is built of nothing but the best materials that can be purchased and is up to the standard of the Corbin Hardware, which is known throughout the country as the best."

The Elmore Manufacturing Co.—"The Elmore car differs radically from any other, from the fact of its using a two cycle engine, which has only three movable parts. This same simplicity is carried out throughout the car, and is the point that we dwell on most. The second point is the reliability of the engine. A third point is the small cost of maintenance of the car by the user. Other points are the simplicity and reliability of the ignition of the cars, their past record and the opinions of the owners."

Electric Vehicle Co.—"We consider the 'Mark 48—3' as a medium-powered car, built strictly for American long distance road service. This is the fourth year of the Mark 48—3 and practically the only changes that we have found it necessary or desirable to make are in matters of detail. Our past experience shows conclusively that it is probably the most economical car to be had at the present time when we take into account cost of upkeep and cost of operation on the road. We rely upon the past record of the car and lay particular stress upon the high quality of material used, upon the fact that the car is built entire in our own plant and not assembled from parts built by outside concerns and upon the fact that for 1909 any type of body now regularly demanded may be fitted on the one standard size of frame and length of wheel base."

Winton Motor Carriage Co.—"Our selling points are, in general, the superiority of six-cylinder cars over other types, and, in particular, the self-starting feature of our construction and the low cost of upkeep as shown by our sworn records of 65,687.4 miles on a total upkeep expense of $15.12."

Cadillac Motor Car Co.—"There is practically no part of the car which we do not manufacture ourselves from our own designs. Of course, the maker who buys his parts largely from outside parts makers is liable to get the same motor, the same transmission, the same steering wheel, the same axle, the same radiator as some other automobile manufacturer might be using, but in our case it is different, as practically every part of a Cadillac car has its own individuality."

Everitt-Metzger-Flanders Co.—"One of our strongest points on the E-M-F '30' is, 'Nothing new—no frills or furbelows. Nothing omitted that experience has proven or convention taught you to consider a necessary part of a first class motor car.' It has been our aim to perfect and simplify the standard automobile construction and, not to invent, but to incorporate in the E-M-F '30' only such details of design as have been thoroughly tried and proven. The only point at which it differs from the general run of four-cylinder cars is in the incorporation of the selective sliding gear transmission in the rear axle. Production in quantities, heretofore unheard of in a car of this size and power; the use of special steels for each special service; the use of steel drop forged throughout, to the entire elimination of malleable castings, and thorough equipment of the car for touring conditions are the principal claims we make."

Chalmers-Detroit Motor Co.—"The Chalmers-Detroit '30' has the following distinctive mechanical features: 4 cylinders cast en bloc, two-bearing crank shafts, unusually long wheel base for this type of car, body swung between the axles to give easiest riding qualities, constant level splash lubricating system operated by gear pump. In making a sale we lay particular stress not alone on the mechanical features in which it is distinctive from all other cars, but on the general excellence of the whole car at the price."

Hewitt Motor Co.—"Our trucks are stronger than others of the same rated capacity; they have larger wearing surfaces, and are better designed with reference to the proportion of power to weight. We have given especial attention to the maintenance of our cars, and the tires give long wear. Our control is superior to any in the market, being three interlocked pedals and a throttle pedal, without any spark advance whatever. We use the highest grade of ignition and oiling system, and produce a car which will run the maximum distance for the money."

A brief summary of the points dwelt upon by other manufacturers in endeavoring to make sales follows:

Packard Motor Car Co.—The Packard "Thirty" is the development of a type which was adopted in 1904; it has been improved each season, but it never has been radically changed. Distinctive features emphasized are: the use of Eisemann magneto with storage battery using a single distributor for either source of current; splash lubrication by two positive, adjustable pumps feeding to the front and rear compartments of the crank case; hydraulic governor incorporated in the water circulating system; original carburetter design; transmission by a long propeller shaft with encased universal joints, in combination with a sliding change speed gear combined with the differential gears in a rear axle unit; original design of expanding ring clutch; light weight, safety of control system, and good suspension.

E. R. Thomas Motor Co.—"The highest powered touring cars in the world"; smooth operation due to use of six-cylinder motor; reserve of power and speed; complete equipment in high-powered car; reliability; two separate and distinct systems of ignition; extra long springs; large brakes; three-disc clutch; four forward speeds; easy steering. For smaller six-cylinder car, in addition to the above: 36-inch wheels, double-elliptic springs; hand-hammered aluminum body; drop frame; herringbone gears; all the characteristics of a much more expensive machine. For town car: high gear ratio permitting running over "any passable hill or road"; short wheel base; low centre of gravity; wide doors and low step; non-skidding tendencies and short turning radius.

The Royal Tourist Car Co.—"Durability, accessibility, simplicity, flexibility and interchangeability, reliability"; largest and most comfortable body on any American car; complete fender protection; special convenience of control elements; three-point suspension for motor, transmission and radiator; ball-bearing cam shafts; practically a triple oiling system; new type carburetter; all parts machined to fractional thousandths of an inch and unless passed by inspection department are not used; interchangeability.

Status of Machines Repaired Abroad.

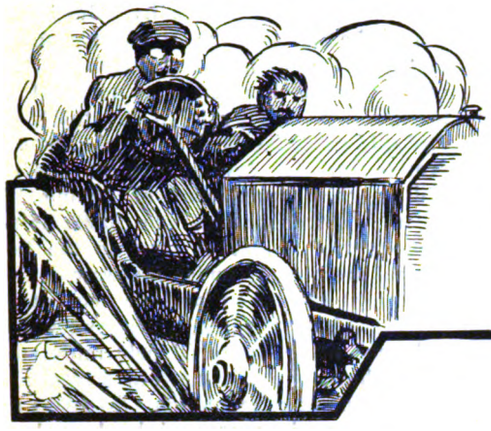
The status of repairs made on machines while abroad, when such machines subsequently are brought back to this country, will be the subject of argument before the United States Circuit Court at the present session, in connection with an appeal by the government. The appeal is for review of a decision of the Circuit Court, in which it was decided that an automobile is a household effect, and that where an automobile has been repaired abroad, it is dutiable only to the value of the repairs.

W. R. Grace & Co., of this city, appear as the litigants in the test case which may eventually reach the Supreme Court. The attorneys for the importers will maintain that the imposition of the full 45 per cent. duty on renovated machines is unjust and has no warrant in law.

Auto-Moving Picture Exhibition.

What is to be, in more than one sense, a moving picture show, is a combined motor vehicle and picture machine for which a patent has been granted to James H. Gravell, of Philadelphia, Pa., and George D. Farwell, of Bridgeport, Conn. The specifications of the vehicle include the necessary machinery for the exhibition of moving pictures; an electric generator for operating the show; and a motor which can be employed either in propelling the vehicle or in driving the electric generator.

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RACING DRIVERS

Racing on this side of the water never has been the established part of the machinery for popularizing and selling cars that it has abroad. There was a time when the pioneer American manufacturers found it highly profitable, because every race or tour in which they participated with any success brought them sheaves of orders as a result of the free newspaper publicity given to their exploits. Strangely enough, some of the early makers for whom racing did the most were among the first to give it up when the number of competitors in the same field began to grow bothersome.

In fact there are comparatively few American manufacturers who have stuck to racing from year to year with anything like the persistency and effort that has characterized the policy of a large list of foreign makers. As a consequence the business of race-driving as a special vocation and means of livelihood has not been open to drivers in America as it has been to those of Europe, where not only fame, but fortune has been the portion of men capable of driving speed cars to victory in the big contests.

Upon the usually sudden and spasmodic impulse to enter a car or cars in a racing contest, the American manufacturer is in more or less difficulty about getting drivers who may be absolutely relied upon not to overlook a possible point in making winners of their machines. Not but what the drivers in his own testing department have all the desirable qualities of loyalty, intelligence, quickness, nerve and mechanical skill, but they lack actual racing experience, which more and more is coming to be recognized as a large element in racing success.

In attempting a representation of the proportion which the driver's share bears to that of the car itself in landing a race victory, various estimates on a percentage basis have been given by experts, ranging in some cases 90 per cent. for the car and 10 per cent. for the driver to situations where it has been 40 per cent. for the car and 60 per cent. for the driver. Racing history gives numerous instances where the man with the apparently inferior car has won, simply by reason of superior brain work and judgment.

Short, straight-away time trials present the minimum demand of racing judgment on the part of the driver. They require considerable high speed experience, however, not only for directing the car in a path which is true, but to detect the slightest departure from maximum motor speeds, and to keep the adjustment of gas, air and spark at the most efficient combination. Circular track racing, which for the good of the cause is now under the ban, when conducted between cars of nearly equal speed yields victory most readily to the driver who abandons caution and has the heart for "rough work," such as "cutting-in" and "switching" on the turns.

The more or less cruel and highly dangerous affairs, known as twenty-four hours races, differ materially from the short sprint events in the qualities required. Proved physical endurance is demanded of a driver in such a contest. Not so much is it speed, but dogged regularity in making the rounds that counts. An easy way of taking the turns to save tires is desirable, together with the ability to pick the best path as the character of the track changes during the grinding hours of wear. Some nice calculation in deciding when to go in for fuel and gasolene or for tire replacements is also required. All these matters and the determination of a rate of speed which will keep the car well up with the leaders and yet not rack it to the breaking point, give opportunity for the exercise of a very high degree of judgment.

Big road races are the greatest test for a driver's judgment and ability. Here the elements of high speed, long distance and the almost certain necessity for tire changes and fuel replenishments, together with the large possibility of repair stops, all combine to put on the driver a responsibility for wise conduct that will measure him completely.

"Long distance road race drivers must be neither too old nor yet too young. They must be at once conservative and daring. In short, they need a heart of fire and a brain of ice." This is an expert's summing up of the general temperamental qualities required, in addition to whatever mechanical skill and steering cleverness they may have.

Widely different in characteristics as a Nazzaro, a Hemery, a Wagner, a Thery, a Lancia and a Lautenschlager may appear, they all have certain qualities in common. The German, Lautenschlager, represents preparation and method, while Lancia, during his racing career, was a type of brilliant individualist. Hemery stands as the bulldog type of persistence, while Nazzaro has ridden to victory in the graceful attitude of an effeminate but fearless expert. Similar contrasts exist throughout the list of famous drivers, but practically every man in the list, as the result of long racing experience, has developed that caste of mind which enables him to see the race as a whole and to squeeze out the best results that his car can give under whatever circumstances may arise. No matter what may happen, such a driver has met with a similar situation before and is in a measure prepared for it. In a mechanical sense his car contains no surprises for him, and the heat of the contest cannot disturb the calmness of his contemplation as to what is the best thing to do at the moment.

By natural gravitation the best drivers generally get the best cars, just as the best jockeys get the best horses. Consequently having once attained any degree of racing fame, a driver is apt to enjoy more or less continued success. But a close examination of the racing lists shows that in almost every big event there are new drivers who in respect to their machines are quite on a par with their fellows. Rarely, however, do they make a showing that is comparable with that of the experienced drivers.

Time and again where three or more cars identical in every respect have been entered by a manufacturer, the one piloted by the most experienced and famous of his drivers has quite outdistanced the others.

Successive winning of the elimination trials and the grand Prix race by Thery with a car inferior to many of its rivals in speed, proved how great a part of the victory is due to the driver. Thery's ex-

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ploits in the Grand Prix events at one time placed him at the head of the list. It was in his driving that the idea of conservatism and self-restraint had its most notable example, the virtues of his policy having influenced race driving ever since. Car after car passed him in some of the big events, but by holding down to considerably less than the limit of his machine's capability he was able to finish in first position through not having to stop for road repairs. In one of the Grand Prix events it looked as though Lancia had beaten him in runaway style, but in the last lap the latter's radiator was punctured by a flying stone and the cautious Thery won—as he had said he would.

Many cars were ahead of Lautenschlager at different times in the last Grand Prix, but no panic of wild driving seized the ultimate winner as he kept the speed he had determined upon to bring him victory. So many successes have attended the policy of keeping to a conservative schedule based on the probabilities of the average speed of the winning car, that for a time almost every camp manager had an obsession to put his driver or drivers absolutely under instructions in this regard, subject to alteration during the race in case of unexpected developments. But the plan is not a perfect success where the drivers are wiser heads than the camp manager.

Almost every race camp now provides a signal system for its drivers, either to give information or to flash instructions. Some of these have been very elaborate, with a code designed not only to tell the driver his position in the race, but which cars were ahead of him and by how much, with perhaps a command either to go faster or to take things easier. At Savannah it was said of Hemery that dependence on his camp's signal system lost him the race because, complete as it was, it failed to tell him at the beginning of the last round that while there was only one car ahead of him in point of position there was another rival only 2 seconds back of him in point of elapsed time. Having overtaken Nazzaro because of the latter's tire trouble, he was himself overtaken by 54 seconds on the time basis because he finished more leisurely than he would have done had he known that another driver was pressing him so hard.

At the winning camp in the same race the signal system was purposely very simple, giving nothing more than the driver's position in the race with the addition of where the camp's leading car stood and the lap number. The drivers were depended upon to drive wisely without camp instructions or advice other than the general policy agreed upon before the race.

Where two or more drivers are piloting the one make of car, it is sometimes arranged to have each follow a slightly different plan, although the variation may hardly be perceptible to the onlooker. Where there are three drivers for the one make, the policy generally followed of late has been to have one driver open up and go the limit as long as his car will hold together; the second to drive on a fast schedule, but with some caution on the bad stretches; and the third to follow a slower schedule which is likely to bring him through without road stops.

De Palma was selected to make as much of a runaway as he could at Savannah, while his two confreres, Nazzaro and Wagner, drove more cautiously, the former to a schedule which would have placed him the winner but for two consecutive cases of tire trouble in the very last lap. De Palma spoiled his car after two furious laps and was set far back because of the tire and other troubles that ensued, and it remained for Wagner to take up the burden of landing the victory, which he did.

Hemery, Hanriot and Erle, the trio constituting an opposing team, worked in much the same way, Hanriot being the reckless, top-speed driver for the occasion, Hemery on a schedule to match Nazzaro's and Erle as the cautious one who "saved" his car. Adventitious accident put Erle out of it, but the results of the two most notable examples of intelligent team work appeared on the final score when the two teams in question divided the first four places, one having first and third and the other second and fourth.

It would be unjust to say that there are no good American race drivers, but they are very few. The opportunities for racing practice are so limited as compared with the practice which foreign drivers get, as to largely explain the difference. Except for short periods immediately preceding some of the big races, drivers on this side are not permitted to indulge in high speed work. In preparation for a big race the foreign driver has his car delivered into his hands months before the event and has little difficulty in finding roads where he can try it out to the limit.

The mere speed race driving presents no particular difficulties to the domestic talent. The strain of driving at 100 miles per hour is little greater than at 70 miles, except for the increased wind pressure which at the higher speeds is a powerful force, thrusting the driver back in his seat as if to flatten him out completely. There are hundreds of American drivers who can steer around curves and through narrow openings with as much precision at high speed as any of the foreign drivers. Nevertheless, from the fact that this steering ability is born of practice with touring cars rather than racing machines, and does not take into account the racing need of saving tire strain and other seemingly trivial and merely theoretical considerations, expert observers claim to discern in the driving of most Americans a lack of the delicacy of touch and judgment which characterizes the work of the most skilled foreign drivers.

No one questions but that with the same financial rewards and the same opportunities, American race drivers would equal those of any other nationality. But by reason of the fact that the American manufacturers at no time regard racing in the light of the serious business that some of the foreign makers take it to be, there will probably never be on this side the same incentive for the development of superior skill in this special class of driving. Of those American drivers who have already gained some degree of fame in the field, several are already under the watchful eye of foreign makers as possible acquisitions, because of their youth, spirit and ability.

At one time Barney Oldfield represented the highest type of American driver, from the standpoint of reputation. So far as personal daring is concerned he has always ranked 100 per cent., but inasmuch as most of his exploits have been on circular tracks, which are still the scene of his barnstorming enterprise, he can hardly be accounted a great road driver. His road racing performance, while creditable, exhibited no marked signs of superior skill. Joe Tracy has a deservedly large following, long experience and a certain calmness of temperament giving him the qualities which make for driving success, the chances for which, however, he has latterly relinquished in favor of less exciting duties. George Robertson, who won the Vanderbilt event in an American car, has all the dash and daring that could be desired and should he continue as a race driver would develop into one of the best. The good luck which attended Lewis Strang in the three big events which he captured during last year was matched by his driving skill, which in no small degree accounted for it. In the Savannah race he encountered real road trouble, however, but met it well, and made an excellent showing. Ralph DePalma has whirlwind qualities as a driver, but the greater part of his experience has been in track work. He has been pronounced a "comer" by competent critics, who believe that he will show up in the front ranks in the future.

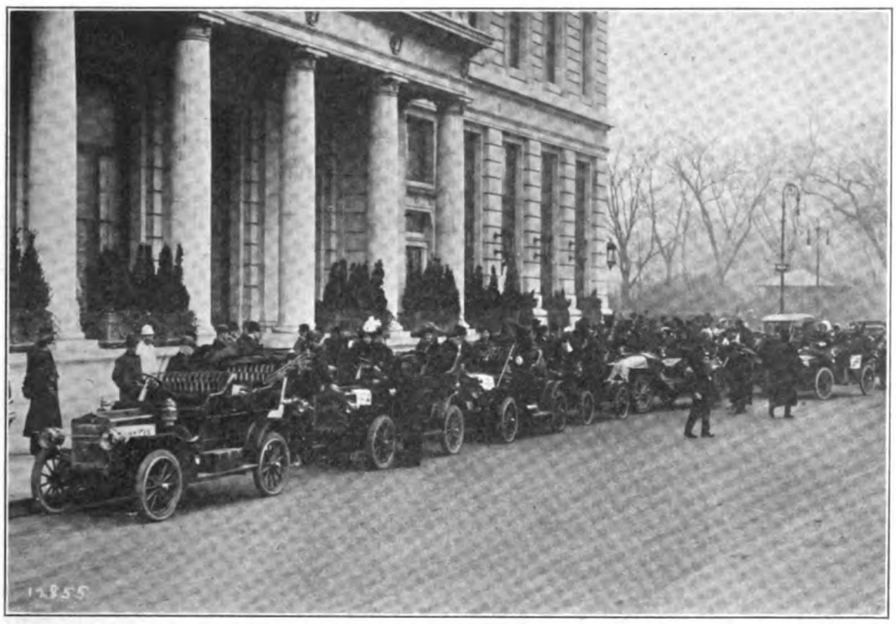
In the style of driving that is necessary in the "tours" and endurance contests which have proved so valuable in the progress of the American industry, no equals can be found for the American drivers in resourcefulness and courage. The nature of a good part of America's roads give all the needed experience, and situations which to the foreign driver would be not only unusual but apparently hopeless strike American drivers as diverting problems to be not ingeniously and skillfully. George Schuster, in the New York to Paris contest, met and conquered difficulties that far exceeded the much advertised troubles of the Paris-Pekin expedition, ultimately winning against competitors supposedly representing the pick of European endurance drivers. He was but the prototype of a large list of American drivers who, in Glidden tours and Western endurance contests, perform feats of road driving that cannot be excelled.

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WOMEN IN A RELIABILITY RUN

Nine of Them in Competitive Drive from New York to Philadelphia and Return —All Complete the Journey.

What that bachelor-expert, John C. Wetmore, described as "the cutest little reliability run" that ever happened, left the Plaza, New York, Monday last, 11th inst. It was the run of the—ahem! Wo-



START OF THE WOMEN'S RELIABILITY RUN

mens' Motoring Club of New York. The club himself was not personally present to witness the start, but his press bureau was there in force and other of his lieutenants were usefully in evidence and performed their duties acceptably. It was no fault of theirs if any woman, suffragette or "anti," who likes that sort of thing did not several times get her name or picture, or both, in the public prints. The contest was a two days' affair, Philadelphia, Pa., being the turning point of the route.

When the "suffragettes" finally checked in at the Plaza on the return trip, around 6 p. m., Tuesday, Manager Alex Schwalbach did not venture to announce the names of the winners. That was too intricate a task. Mrs. Cuneo, to be sure, was the first to reach the finish line with her Lancia mount, but inasmuch as most of the other contestants covered the entire two days' run on schedule time without mishap, under the somewhat vague rules of the affair, the committee will doubtless encounter some difficulty in allotting the prizes so as not to cause hard feeling on the part of several contestants possibly possessed of a full share of sensitiveness.

At the start of the run in the early hours of Monday, nine contesting cars, with female drivers at the wheel, lined up and proceeded towards one of the North River's most popular ferries, crossing to Jersey City. The caravan was composed of five Maxwell cars piloted respectively by Mrs. J R. Ramsey, Mrs. Lillian Gillespie, Miss Bertha Rittwetzer, Mrs. P. Bach and Mrs. E. P. Gresh; a Renault, with Miss Evelyn Buckman at the wheel, Mrs. A. W. Seaman in a Franklin, Miss Alice D. Hayes in a Cadillac, and Mrs. Joan Newton Cuneo herself in the Lancia "Lampo." A confetti car, preceeding the pack, and two press cars following, carried the mere men chaperones —the club's lieutenants, and newspaper correspondents.

The social side of the contest was dominant from the start and the first stop was made at Newark, where the local automobile club entertained the chauffeuses for a few brief moments in the club house, which was especially decorated for the occasion with flowers and flags. From Newark the drivers flashed through Elizabeth, Rahway and Metuchen, and then paused for luncheon at the Ajax-Grieb Rubber Company's factory in Trenton. Horace B. De Lisser, president of the company, was host of the occasion and he had some beautiful thoughts to express to the fair ones.

Through the kindness of the weather god, the remainder of the trip, which had commenced under unfavorable conditions, to the Quaker City was smooth and pleasant, Mrs. Cuneo taking the lead from Mrs. Ramsey, who had held it as far as Trenton, and bringing the "Lampo" into the checking station in front of the Walton, the Philadelphia club's headquarters, an hour ahead of schedule. Following came the remainder of the contenders in a close string, no trouble being reported. The Quaker City Motor Club received the ladies warmly and provided entertainment, Mayor Reyburn being among those to congratulate the drivers.

When the second lap of the suffragette run began the next day and the cars trailed back to the Metropolis, there were more receptions and celebrations. On the second visit to Trenton, a stop was made at the capitol and Governor Fort addressed the party. The roads were in fine condition with the exception of one town, Burlington, N. J., which was a mass of mud holes. A few of the cars floundered around in this swampy boulevard and when one contestant tried to drive on the sidewalk her car became wedged between two trees. Then the first rain of the trip began to pour down and the run became a wet one.

At Grant City, the tourists were the guests of the Richmond County Automobile Club and after this celebration, which



TRENTON'S GREETING TO THE "SUFFRAGETTES"

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was most acceptable in view of the weather the Women's Motoring Club of New York chugged back to the city in which it sprang up so recently. On this part of the run, some of the drivers criticized the way Mrs. Seaman handled her car. She was so anxious to beat Mrs. Cuneo, that she became quite reckless and had several narrow escapes. Twice she ran her headlights into the pilot car's tonneau. Jake Schreyer, who drove a lonely Maxwell runabout, mixed things with a freight train while crossing railroad tracks out in the wild country and smashed off a fender and a lamp or two, but he survived to continue.

France Abandons the Grand Prix.

That the Automobile Club of France has decided to abandon the famous Grand Prix race which had been scheduled for July next was the brief cabled announcement received in America Friday, 1st inst. That the announcement failed to create any great amount of surprise is not to be wondered at in view of the amusing stand that has been taken by the French makers since the subject of a Grand Prix for 1909 was first broached.

As is already well known the French manufacturers are suffering from an acute attack of that malady slangily referred to as "cold feet." In other words, France, which originated automobile racing, has found that it is too great an expense to bear in the future. In plain English, the French suffered so many defeats with odds all in their favor this season that they have decided they can learn nothing more from racing.

The ludicrousness of the position may be understood when it is explained that some time ago the racing board of the Automobile Club of France, composed entirely of French constructors, got together and formulated rules for the 1909 Grand Prix, which were in accordance with the international rules drafted at a congress of the representatives of the international automobile clubs. These rules materially diminished the size of cars eligible to compete as compared with those employed last year.

After having gravely made the rules the French makers got together and signed an agreement not to enter the racing field in 1909. The rules of the Grand Prix stated that unless 40 racing cars were entered by 6 o'clock on the evening of December 31st, 1908, the event would be declared off. Since the stipulated number of entries was far in excess of any previous requirement and all the large manufacturers had made an agreement not to participate in racing it was not surprising that only nine entries should have been received at the time of closing the lists.

New Orleans Plans "Ladies' Race."

New Orleans is said to have included a "ladies race" in its Mardi Gras racement. If the report is true, New Orleans has reason to be ashamed of itself.

WINNERS IN QUAKER CITY RUN

Official Announcement Displaces Two of the Runnersup—Four Contestants Who Finished are Disqualified.

After no little wrangling, on Wednesday last, 6th inst., the contest committees of the Quaker City Motor Club made its first official announcement of the results of the club's strenuous endurance contest from Philadelphia to Wilkes-Barre and return on January 1-2. A revision of the score as first announced unofficially, changed the order of the winners considerably, positively disqualifying Ray McNamara's Premier entry, together with three others, and moving the two Oldsmobiles up to second and third places. The findings of the committee were anything but favorable to a number of the contestants and their followers, the Premier representatives feeling highly incensed at the decision in their case. McNamara's car had a perfect score technically, but was disqualified because it did not carry its full complement of passengers over a short distance of the course, while endeavoring to secure footing in getting around a car which was blocking the road. J. H. Hall, the entrant, claimed that this discharging of passengers was done with the full knowledge and consent of one of the contest committee and that for this reason the subsequent penalty was unjust.

The other three disqualified contestants were: H. B. Tuttle, Stoddard-Dayton; C. S. Carris, Franklin, and F. W. Darnstadt, Rambler. The six cars which started originally but did not finish were not credited and received no scores.

The official score of the survivors, as given out on Wednesday, was as follows:

Class "A"—Touring Cars.

Driver.	Car.	Points Penalty.
William Miller,	Mattheson	11
F. G. Folberth,	Oldsmobile	13
Tom Berger,	Oldsmobile	15
Laurent Grosso,	Stearns	30
John Dietrich,	Matheson	37
Ross Anderson,	Matheson	70
Ed. Burnshaw,	Cadillac	81
William Freitag.	Mitchell	127
William Crawford,	Cadillac	135
Robert Shirk,	Stod.-Dayton	140
Frank Yerger,	Studebaker	195
A. McCormick,	Acme	269
Herb Bitner,	Maxwell	758

Class "B"—Roadster.

Geo. Brooks,	Peerless	50
W. C. Longstreth,	Maxwell	239

Hartford to Have a Mid-Winter Race.

The Quaker City Motor Club is not alone in promoting a mid-winter endurance run, as a contest of the sort has just been announced from Hartford, Conn. The date will be January 28th, and the route selected is from Hartford to Pittsfield, Mass., and return, a distance of 156 miles. On the out trip the towns passed through will be Avon, Canton, Pine Meadow, Winsted, Norfolk, Canaan, Barrington and Lenox, and the return journey will carry the contestants through Washington Village, Chester, Huntington, Westfield, Springfield, Thompsonville, Warehouse Point and East Hartford. The feature of the run is the beautiful simplicity of the rules. There is just one and that states that a competing car must go from Hartford to Pittsfield and return by the prescribed route. The minimum scheduled time for making the run is eight hours and the car arriving at the finish nearest to this mark shall be adjudged the winner.

Charleston Holds a Road Race.

To mark the opening of the rebuilt road between Charleston and Summerville, S. C., some sixteen local motorists held an "endurance contest and road race" from Magnolia Crossing to Otranto, a distance of 12.7 miles. Contestants were in two divisions, amateur and professional, the latter class being composed of dealers. G. Norwood Haste won first place in the amateur competition, his time being 31½ minutes, and J. H. Rast captured the dealers' prize, covering the distance in 27 minutes flat. A schedule of penalties for adjustments also entered into consideration.

Glidden Tour Scheduled for July.

Although it has not been definitely announced by Chairman Frank B. Hower just where his tour—by courtesy still known as the Glidden tour—will start or finish next summer, he has stated that it will positively start from somewhere during the week of July 5. During automobile show week, Hower was busy at the Grand Central Palace soliciting entries among the manufacturers for his next A. A. A. tour. The number of entries obtained, however, was not made public. The list is to close June 15; the fee being $200 per car, if entered before May 15; and $300 for entries accepted later.

Another Hill Climb at Los Angeles.

Los Angeles, Cal., which is fond of hill-climbing contests, will witness another event of this sort on Washington's birthday, when the Automobile Dealers' Association holds its Pasadena-Altedena competition. The course, which extends from just inside the city limits of Pasadena and takes one up a strenuous incline to the crown of a hill in Altedena, is regarded by motor enthusiasts in that part of the country as an ideal slope.

Late Date for Florida Sandfest.

Dates for the annual speed carnival on the Ormond-Daytona course, Florida, have been set. Later than any meet held heretofore, the sandfest will occupy four days, March 22 to 25. Daytona, which has always been jealous of its neighbor, Ormond, will have entire charge this season, the meet being under the direct auspices of the Florida East Coast Automobile Association.

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TO IMPROVE NEW JERSEY'S LAW

Governor Fort Recommends Some Amendments of a Liberal Character—But He Does not Favor Lower Taxation.

Governor Fort, as was expected, made some important recommendations concerning automobile legislation in his annual message, sent in to the New Jersey legislature on Tuesday, 12th inst. But he maintains that it is not unfair to the motorist to make him pay up to $14 per year for the privilege of motoring in that State. Calling attention to what he said in his inaugural address last year as to the creation of a motor vehicle department, he predicts for that department large growth and a revenue production of a "quarter of a million dollars per year within the next five years." He adds: "It demands the constant and undivided attention of a distinct head, with the requisite inspectors and other officers to enforce the law. All such power should be exclusively in the hands of this department. Arrest and bail might be allowed by local constables or police for alleged violation of the law, but further procedure as to settlement or suit should be exclusively in this department, or its representative, that all cases of unjust apprehension, and all acts of unscrupulous justices of the peace, who for the costs they receive encourage this class of litigation, would be ended."

In connection with this topic the Governor refers briefly to the matter of interstate comity, recently brought to his attention by a committee from the Newark Board of Trade. He says: "A more simple and easy method of procuring a license, especially by non-residents, should prevail."

Under the specific heading of "Automobiles" the Governor says: "The automobile is with us, and it has come to stay. It must be given all highway rights, under proper restrictions to protect the public and the occupants of the machine. Railroad regulation as to the running of trains, safety appliances and the like are intended for the protection of the passenger more, if anything, than the traveler crossing the tracks.

"All vehicles upon the public highway should be required to carry lights.

"Speed regulations in the open country should be liberal; 30 miles an hour could be allowed there with safety.

"Arrest and trial should not be summary, but the right to stop should only exist to inquire as to the possession by the driver of the machine of the requisite authority, or to obtain its number, if violation of law be claimed.

"Suit should only be instituted by direction of the department in proper courts near the residence of the alleged offender, or at convenient points within the State for the non-resident.

"Wilful injury to person or property by the driver of a car, or such injury by an intoxicated driver, should be a misdemeanor, and punishable accordingly, without, of course, the loss of right to maintain a civil suit by the injured party or the owner of the damaged property.

"The present license fees are not excessive and should not be modified by any reduction, unless it be through some system of uniform legislation between the States."

Public roads also come in for important mention in the message, and what the Governor has to say upon this topic includes a recommendation that "a commission be created, consisting of the Governor, the President of the Senate, the Speaker of the House, and the State road commissioner," who shall have authority to take over all highways "from county seat to county seat and along the proposed shore boulevard route, that they may be maintained by the State, through the State road department, without expense to the localities through which the roads pass, the control of the surface of these roads being transferred to the commission by the local authorities. All the revenue derived from license fees for automobiles should be given to this commission to be used in the maintenance of these highways, and such additional sum added thereto annually, by appropriation, as will furnish a sufficient fund to properly maintain them."

What Motorists Pay Massachusetts.

While the Massachusettes Highway Commission is up to its eyes in the work of issuing automobile licenses for the new year it has found time to give out the figures for the last fiscal year of the automobile registration department, ending with Nov. 30. Receipts in fees were $121,488.50, or $30,000 more than for the fiscal year ended Nov. 30, 1907. The statement in detail shows the registrations and income therefrom in December, 1907, as follows: 14 automobiles, $70; 5 motorcycles, $10; 2 manufacturers or dealers, $30. In 1908 there were registered 18,052 automobiles, $90,260; 1,917 motorcycles, $3,854; 379 manufacturers or dealers, $85,685. Licenses to operate were issued in 1908 to 5,865 private operators, the fees aggregating $11,730; 2,343 professional chauffeurs, $4,686; and there were 4,962 renewals, returning in fees $2,481; and 1,215 examinations, returning in fees $2,430. For 545 copies of certificates and licenses furnished the fees amounted to $272.50.

New Jersey Favors New York Taxicabs.

A blanket form of license has been issued by the Commissioner of Vehicles of the State of New Jersey to the New York Taxicab Co., to run its machines through that State. Jersey City police have been notified by the Commissioner that drivers of these cabs are not to be stopped because they do not display license numbers, as other automobiles are required to do under the law.

FOR CITY CONTROL OF MOTORING

Mayor McClellan Recommends Supervision of Taximeters—Police Department Wants Larger Powers.

Mayor McClellan, in his annual message to the Board of Aldermen and Police Commissioner Bingham, in, in his annual report, which were published last week, both have something to say on the motoring situation in New York City. Adoption of their several recommendations would lead to practically placing the situation within the absolute control of the municipal authorities, excepting only the matter of those registration and license requirements which are embodied in the State law. Among the Mayor's recommendations is one to the effect that all automobiles should be equipped with adequate mufflers. He appears to have taken a leaf out of the Park Board's book in recommending that, except for the first ten seconds after starting, no smoke should be allowed to come out from the exhaust pipes. Also he favors the prohibition of acetylene headlights within the built up parts of the city. These recommendations also figured in his message one year ago, but were unheeded by the city fathers.

On the taximeter cab question the Mayor expresses himself by saying: "I respectfully suggest to your honorable body the adoption of an ordinance requiring taximeters to be tested by the city. Within a year it has become evident that the taximeter, with its supposedly exact measurement of distance and time, is a popular appendix of public vehicles. It is, however, as subject to error as any other mechanical device, and should be inspected as are weights and measures."

Commissioner Bingham's recommendations aim to confer upon the Police Department much larger powers than now pertain to it in the regulation of motoring within the city. He would have the question of speed governed wholly by considerations for public safety, without any specific limitations. The result of this, of course, would be to make policemen competent witnesses as to time, place and conditions determining the question of reckless driving, regardless of what the actual speed might be. The Commissioner would have the licenses of chauffeurs issued by the Police Department, each license to bear a photograph of the chauffeur to whom it is issued, and to be revocable by the Department.

The board of aldermen was prompt to act on the mayor's recommendation concerning taximeters. Two ordinances were introduced at the meeting of the board on Tuesday, 12th inst. Alderman B. W. B. Brown was sponsor for one of them, which amends Chapter VIII. of the Code of Ordinances so as to place upon the Bureau of Weights and Measures the duty of inspect-

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ing "taximeters or mileage registers." Alderman Frank L. Dowling introduced the other measure, which requires the chief of the Bureau of Licenses to investigate and test the accuracy and efficiency of any machine device or register to be used in cabs, coupes, or automobiles, to show the fare of passengers, the charges for baggage, and the mileage covered by the vehicle, and directing the making of written reports of such tests to the Board of Aldermen. Both ordinances were referred to the committee on laws and registrations, with a request to give public hearings.

Governor Draper Suggests Heavier Tax.

When Governor Eben S. Draper, of Massachusetts, made his inaugural address upon taking office this week, he did not overlook the fact that the automobile question is one requiring serious attention. He said:

"As I have previously stated, these vehicles have, in my opinion, come to stay, and will constantly increase in numbers. I have already referred to changes that I think it would be wise to make in legislation having to do with increased receipts from the use of certain classes of machines.

"I further believe that our laws should be so amended as better to regulate the conditions under which they are run. The object to be attained by such legislation, in my view, is to prevent reckless operation of such machines on the public highways. Speed limits may have their advantages, but they oftentimes work a hardship on careful operators.

"The laws should be so framed that any reckless operation of a motor vehicle, at any speed, should be the test for fine or other punishment, as the case may be. The object to be attained is to frame laws which will prevent reckless and dangerous operation of such vehicles. Where any particular person is convicted, the penalty should be severe; and if glaring cases of recklessness are found, the guilty operator should be prohibited from further opportunity for such action.

"I would further suggest that some law might be passed which would make it a criminal offence to use an automobile without the owner's permission."

Unusual Wear on Connecticut Roads.

According to State Highway Commissioner McDonald, improved Connecticut State roads are having havoc wrought upon them to a greater extent than ever before. Wear on the highways is now estimated at 79 per cent., whereas it was formerly only 22 per cent. Various processes of oiling have been tried and new forms of road building have been suggested, but the latter are too expensive for general use in the State and upon the whole, the commissioner does not know what to do about it. It is his intention to bring the matter before the forthcoming session of the General Assembly, which may result in a higher rate of taxation being imposed upon motorists.

JUSTIFIES THE NEW JERSEY LAW

Commissioner Smith's Annual Report Defends the State's Automobile Policy—He Suggests Improvements.

In his third annual report, State Commissioner J. B. R. Smith, of New Jersey, resents the charge that his state under the present automobile regulations has been unfair to motorists from other states. The Commissioner feels quite hurt to think that New Jersey should be accused of such a thing, although he admits that the law could be improved. However, he declares that a boycott, or "propaganda" as he calls it, against the trades and pleasure resorts which has been freely discussed by certain automobilists as a means of coercing favorable legislation, will by no means accomplish the desired effect.

He declares that if the larger offenses against the state automobile law are made misdemeanors, the change will have the desired effect of saving motorists much of the annoyance they are now apt to experience. Under present conditions, summary proceedings may be taken by justices of the peace, but if such offenses as they deal with were made misdemeanors, unscrupulous justices would have no incentive to annoy innocent motorists, while out-and-out law breakers would get the punishment they deserve and "pickings" for rural "J. P.'s" would become a thing of the past.

In discussing the question of interstate comity, which is an important matter at present, the Commissioner says:

"There are under consideration four methods of dealing with this subject. First, to refrain from recognizing foreign registration, as is done by New Jersey, Pennsylvania and some other states; second, to recognize indefinitely foreign registrations, as is done by New York; third, to recognize foreign registration for a limited term for five, ten or fifteen days, as is the prevailing practice in New England; fourth, to issue, for a nominal consideration, a short term registration. Because of the practical difficulties in the way of enforcing the limit, the effect of the New England plan is to admit indefinitely on foreign registrations.

"The fourth plan has been suggested to the last two Legislatures in New Jersey, but has failed of adoption, partially, in all probability, because of the opposition of motorists themselves, representatives of automobile organizations insisting that if they cannot receive the courtesy without cost they do not desire to accept it at all. Many non-resident motorists feel and freely charge that our failure to reciprocate what they regard as their courtesy is a selfishness and barbarism unworthy of our own or any other state; while New Jersey motorists, particularly those residing in the northern counties and who have occasion to enjoy the liberality of the New York and New England laws in this respect, share in their belief.

"I believe it can be clearly demonstrated that notwithstanding the expense and trouble incurred by non-resident motorists in procuring New Jersey registrations, we of New Jersey offer to visiting motorists manyfold more inducements than other states, even with their registration courtesies, offered to Jerseymen."

Commissioner Smith disagrees with the many automobile owners, who think that the required registration fee is too heavy. In this connection he says:

"Regarding the revenue feature of our present scheme of registration, there is perhaps much room for legitimate and honest doubt. There is hardly a question, however, but that at the present time the public almost unanimously believes that automobiles are not carrying more than an equitable share of the burden of the repair of the improved roads. When it is considered that the cost of improvement to the hard roads of the state is more than $800,000 per annum, and that the revenues from motorists aggregate less than one-fourth that amount, it would seem that this popular conclusion is well founded.

"In this connection it may be well to state that more than half of the automobiles registered in New Jersey are owned by non-residents. If, then, the state adheres to its present policy of asking the automobilists to contribute approximately one-fourth of the cost of the repair of the roads (there being no charge to the motorists for their original construction), it becomes apparent that if reciprocal courtesies are to be extended to non-residents, the registration fees charged to New Jersey motorists must at least be doubled. If non-residents are not asked to contribute, residents must make greater contributions.

"Much of the present annoyance to tourists comes from the necessity of procuring new identification markers for each separate state. A scheme of interstate identification markers could easily be established. This would preserve all the present valuable features of state registration, and would relieve tourists of much trouble."

In regard to his plan for making particularly flagrant offenses misdemeanors, the Commissioner does not hesitate to deplore the New Jersey system of inflicting fines.

"There is much ground for criticism," he says, "regarding our method of enforcing penalties. I think there should be no hesitancy in saying that not only the spirit of the act, but the spirit of the magistrates, as well has been to place too great importance upon minor offenses, and to allow the more flagrant offenders to go with insufficient punishment. Slight distinction is made between a drunken driver or one driving without the owner's consent, and an innocent person who perchance has failed to carry his certificate with him."

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THE CONSTITUENTS OF THE TIRE

Some Fallacies and the Facts—Where and How Rubber is Obtained—Source of the Sea Island Cotton.

Familiar as the average motorist is with the construction and use of the pneumatic tire, it is a curious fact that his knowledge of the materials of which it is composed and of the methods employed in its manufacture is very limited. The entire rubber industry is to the outsider, shrouded in mystery and more or less in misapprehension as well. This begins with the popular and erroneous impresion that crude rubber is derived from the sap of certain tropical plants, and extends through nearly every step in the process of tire production, even to the Sea Island cotton used in weaving the fabric, and which except to a limited extent is produced many miles inland from the locality which gives it its name. Considerable interest, therefore, attaches to the simple narrative of the derivation of these elements of the tire as told by H. S. Firestone, president of the firestone Tire & Rubber Co., which has just been prepared.

"Civilization first heard of rubber in Herrera's account of the second voyage of Columbus in the year 1493, where he speaks of elastic balls made by the natives from the gum of a tree," says Mr. Firestone.

"The first authentic account of its practical use was recorded in 1745 by the leader of a French Governmental expedition returning from South America who reported that the natives secured from the juice of a tree a certain gum which was very elastic, impervious to water and used in making bottles, shoes and squirt guns. Thirty years later it was introduced to commerce when an Englishman brought from Assam, India, a soft spongy substance which would erase lead pencil marks and which afterwards became known as India rubber.

"Many primitive uses were found for this wonderful gum, but owing to its susceptibility to changes of temperature, which rendered it sticky and more or less fluid, rubber did not come into its own until early in the last century. At that time it was discovered after a great deal of experiment, that by mixing sulphur with crude rubber and subjecting it to a high degree of heat, these former deficiencies were eliminated and a material was produced which was both tough and elastic, and would retain those properties under varying temperatures. This process of curing was called vulcanization and is the basis of rubber making today.

"So great has been the development of rubber manufacture since that time that its products now exceed a value of five hundred million dollars annually.

"Contrary to the popular impression rubber gum is not derived from the sap. It is secured from a milky juice or 'latex' which is found only in the bark. This latex contains a substance known as caoutchouc (the active principle of rubber), together with certain albuminoids, resins, etc., which upon the evaporation of moisture coagulate, forming a thick, spongy substance. The percentage of caoutchouc, in proportion to other ingredients contained in the latex, determines the quality of the rubber.

"The regions from which rubber gum is secured form an irregular belt in the tropics and sub-tropics extending around the earth, the quality procured varying greatly according to the species of plant, the soil and the climate. Great quantities are produced in Africa, Mexico, Ceylon and the Malay Islands, but the most desirable rubber for resiliency and wear resistance is secured from a tree found in the Amazon River district, South America. This rubber is known as Para, the name being derived from its chief city of export. It not only contains as high as 95 per cent. of caoutchouc, but the methods used by the natives in preparing it for market are so much superior that it is selected in preference to all others for the manufacture of the best automobile tires.

"Rubber gathering in the Amazon River district is a hazardous and difficult undertaking. The supply comes from wild trees scattered throughout dense forests, to which paths must be cut through the tangled and luxuriant undergrowth. Even then, the trees can only be reached during three to five months of the year, as throughout the wet season the forests are completely inundated. The climate is so unhealthy that white men cannot do this work and it is necessary to rely upon the native blacks, who at best are undependable and lazy. Their reluctance to join rubber gathering expeditions can readily be understood when it is remembered that out of a season's expedition perhaps only half will return alive.

"When a rubber tree is found the native gatherer cuts a series of gashes into the bark with his machete, encircling the tree from the ground up, as high as he can reach. Cups are fastened to catch the latex as it oozes out. When a sufficient quantity is collected it is removed to the temporary hut where a dense smoke producing fire is made of certain nuts and palm leaves. Then taking his wooden paddle the native dips it into the latex and holds it over the fire, turning it round and round until the latex coagulates. As soon as it is hard a new layer of latex is added and coagulated as before. This process is continued until the mass has grown too large for handling, when the paddle is taken out and the rubber set aside for export. In this form it is known as a ham or biscuit of Para. The process of coagulation and fumigation with these specially selected nuts and leaves prevents decay and adds to the life and wear resistance of the manufactured product.

"Tapping the trees for rubber does not necessarily destroy them, nor is it believed to materially shorten their life; but unfortunately many thousands of trees are annually rendered useless by careless and improper methods.

"In order to obviate the difficulties encountered in gathering wild rubber and facilitate production, artificial cultivation has been resorted to in various localities. Scores of millions of dollars have been lost in ventures of this character, many of them merely wild-cat promoted schemes. It is estimated now, however, that there are 300,000 acres of rubber plantations in Ceylon and the Malay region and 100,000 acres elsewhere, principally in Mexico, some of which have already started to yield and promise handsome returns to investors.

"In other localities rubber is collected and coagulated by a variety of methods. Africa, for instance, produces quantities of rubber from various species of vines, roots and even grasses which are destroyed in order to secure latex, but which are rapidly replaced by new growth. These rubbers are designated by many different names, chiefly from their locality or the name of the native tribe gathering them. The methods of coagulation are very crude; some by evaporation, some by plant acids and others by smearing over the bodies of the natives. The proportion of caoutchouc in some of these rubbers runs as low as 60 per cent., but each has its own particular place in the general manufacturing field.

"Next to rubber the most important material in a pneumatic tire is the fabric which gives form and rigidity to the tire. Extensive experiments have been made with all textiles to secure a fabric, which in the finished condition will combine best with rubber, be unaffected by the chemical action in manufacture and demonstrate the greatest strength. Silk and linen show great strength, but when combined with rubber will not produce the results which can be obtained from cotton. There are many grades of cotton, the best of which is long staple Sea Island. It is erroneously supposed that this cotton grows exclusively on islands off the coast of South Carolina, but in fact only the seed comes from these islands, the supply being grown on the mainland. The next best cotton comes from Egypt, which grade for grade is estimated to average about 20 per cent. less strong than Sea Island.

"There has been a great amount of thought, time and money devoted to the combination of rubber and fabric into a sccessful pneumatic tire and developing it to its present stage of perfection. The scope of this expenditure is well illustrated by the fact that 1,641 patents have been issued in the United States since the first one, May 8, 1847, to say nothing of the numerous patents on solid and cushion tires. It is needless to say that many of these patents have come to nought, and that most of the men embarking in the business have failed to succeed. The development of the rubber tire has been the survival of the fittest."

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The Week's Patents.

900,635. Ball Bearing. Frederick W. Witte, Leipzig-Plagwitz, Germany. Original application filed April 11, 1908. Serial No. 426,624.

A ball bearing comprising balls, an inner and an outer ring, each having a curved track, and one of said rings having gaps around its edge for the balls, each gap passing spirally from one side inwardly toward the track and being a depth where it enters the track which is less than the full depth of such track, whereby an abutment for the balls is left at the end of each gap.

900,638. Gasolene Strainer. Oscar Zschoge, Brooklyn, N. Y. Filed April 15, 1908. Serial oN. 427,274.

1. In a strainer, the combination with the casing having oppositely located inlet and outlet, of a movable block within the casing having a plurality of passages arranged to register with the said inlet and outlet of the casing, strainers placed in the said passages and movable with the block, and means for moving the block from the outside, substantially as described.

900,675. Variable Speed Transmission Mechanism. Albert Latham, Waltham, Mass., assignor of one-half to James W. Nourbourn, Somerville, Mass. Filed Feb. 26, 1906. Serial No. 303,118.

1. In a variable speed transmission mechanism, a transmission shaft and a countershaft, a circular clutch member rotatively free on the transmission shaft, gearing connecting the countershaft and said clutch member, a support mounted on and non-rotative relatively to the transmission shaft and carrying a fellow clutch member for coaction with the said first clutch member, a collar, having a clutch device operating member, a slide movable parallel with the transmission shaft, having a member engaging for endwise movements, only, the said collar, a rock shaft having an arm engaging said slide and having an angular lever, a revoluble cam coacting with said angular lever, and means for turning said cam and correspondingly positioning the said collar.

900731. Carburetter. Frank H. Heitger, Indianapolis, Ind., assignor to Heitger Carburetter Company, a Company organized in Indiana. Filed Aug. 24, 1907. Serial No. 389,976.

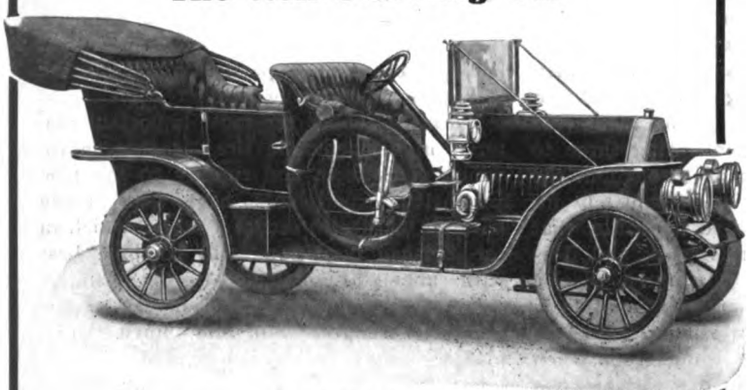
1. In a carburetter, the combination with a fluid fuel supplying nozzle, a valve seat situated at the top end of the latter, a throat surrounding the top end of said nozzle, an air admission nozzle extending downwardly from the open base end of said throat and terminating in an enlarged air inlet end, an ejecting nozzle extending from the top outlet end of said throat terminating in an enlarged ejecting end, and an air deflecting collar on the top end of said fluid fuel supplying nozzle having its under surface inclined and situated to be approximately parallel with the inner lower surface of said throat, of a valve stem, a valve coacting with said valve seat on the end of said stem, a deflecting collar situated on said stem above said valve having its flat under surface situated to be impinged against by the outflowing jet of fluid fuel from the fluid fuel supplying nozzle.

900,757. Engine. Frank J. Miller, Cleveland, Ohio. Filed Dec. 12, 1906. Serial No. 347,478.

1. In an explosive engine, the combina-

THE "JEWEL 40"

The Non-Skidding Car



SPECIFICATIONS

ENGINE—Rutenbur.
BORE AND STROKE—4¼x5"
IGNITION—Double—Bosch Magneto, Connecticut Coil and Exide Storage Battery.
LUBRICATION—Self contained system with oil level pump in crank case.
TRANSMISSION—Selective type, 3 speeds forward and reverse.
BEARINGS—Timken Roller.
FRONT AXLE—One piece drop forging.
REAR AXLE—Full floating type.
WHEEL BASE—120".
WHEELS—36".
TIRES—Goodyear, Diamond, Firestone or Hartford, 36x4" front, 36x4½" rear.
BODY—Seven passenger.
WEIGHT—3,000 lbs.
PRICE—$3,000.00 complete with top, Hartford Shock Absorbers, Prest-O-Lite gas tank, 9" Rushmore Search lights, side lamps and tail lamp, double tire irons and trunk rack.

Write for catalog.

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tion of a compression cylinder having inlet and outlet valves in the head thereof, a reservoir connected to the outlet valve, a rocker engagable with either valve to vary its normal action, a shaft driven by a moving part of the engine and having a cam thereon connected to the rocker, and means to shift the cam to vary the operation of the rocker and valves.

900,763. Non-Explosive Closure for Tanks. William H. McNutt, New York, N. Y., assignor to William E. Roche, New York, N. Y. Filed Nov. 19, 1906. Serial No. 343,991.

1. A closure for tanks comprising a bushing provided with an annular shouldered portion at its outer part, a closure disc located in said shouldered portion and of less diameter than the shouldered portion, the disc being provided with an annular channel in its periphery, the opposite wall of the shouldered portion being also provided with an annular channel, a fusible ring arranged between the periphery of the disc and the channel portion whereby the disc is normally locked in position, the bushing having its aperture threaded at one portion, a plurality of apertured diaphragms extending across the aperture, ring members separating the diaphragms at their margins, and a ring nut threaded in the aperture of said bushing clamping the diaphragm and ring members in position.

800,764. Safety Filler Can. William H. McNutt, New York, N. Y., assignor to William E. Roche, New York, N. Y. Filed Dec. 10, 1906. Serial No. 347,224.

1. In a filler can, the combination of a can, an outlet for the can, a valve controlling the outlet, a valve seat member providing an air vent at the upper portion of the can, a plug valve rotatable in the valve seat, an arm secured to the plug valve, a spring organized to close the plug valve, and a link connecting the spout valve with said arm whereby the closing of the plug valve by its spring will close the outlet valve and lock it in such position.

900,765. Cartridge System for Explosive Engines. William H. McNutt, New York, N. Y., assignor to William E. Roche, New York, N. Y. Filed Jan. 14, 1907. Serial No. 352,110.

1. The combination of the cartridge vessel having a conical lower end terminating in a plug, the plug having a conical extremity and provided with a threaded portion above said extremity, a sleeve member comprising a body portion and a flange portion adapted for attachment to a receiving vessel, a sleeve member having a threaded portion in its upper end, and a conical portion below the threaded portion corresponding in shape to the said plug for attachment thereto, the sleeve having a chambered portion in its lower end, a valve at the upper part of the chambered portion arranged to close the opening, a spring in the chambered portion arranged to engage the valve and yieldably retain it seated, and fingers attached to the valve and projecting into the plug engaging portion causing the valve to be automatically opened and retained open when the plug is secured in the bushing.

900,779. Automobile Spring. William R. Rantz, Greenville, Ohio. Filed Nov. 13, 1907. Serial No. 402,007.

1. A device of the kind described comprising three spring pressed piston rods, one of said rods being arranged below and between the others, and curved levers pivotally connected intermediate their ends and having their end portions loosely connected to said piston rods.

900,785. Vehicle Tire Protector. James E. Rabinson, Chicago, Ill. Filed Dec. 20, 1906. Serial No. 348,684.

1. In combination, a vehicle wheel provided with a pneumatic tire, an axle therefor, a pulley in the plane of but separated from said vehicle wheel, a support for said pulley, associated with the axle for movement therewith and a tire protecting belt running over said tire and said pulley.

901,081. Clutch Mechanism. Herman Dock, Westerly, R. I., assignor to Dock Gas Company, New York, N. Y., a Corporation of New Jersey. Filed Jan. 9, 1908. Serial No. 410,007.

1. In a clutch, a divided clutch ring, a support and anchorage therefor, means cooperating with both ends of said ring to expand the same, said ring anchorage having an inclined bearing for said ring on that side adjacent to the operating means.

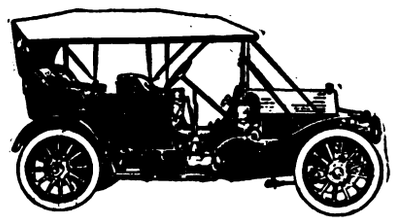
901,180. Transmission Mechanism for Motor Vehicles. Charles M. Leech, Lima, Ohio. Filed Feb. 5, 1907. Serial No. 355,829.

1. The combination of a driving shaft, shafts having opposed level wheels at the opposite sides of the driving shaft, means providing for a lateral, yielding movement of said shafts, opposed bevel wheels fixed to the driving shaft between said first named wheels, and means for reciprocating the driving shaft.

PENNSYLVANIA

Type "C" Fifty

Unchanged—is a model universally endorsed by its consistent winnings in all racing events for endurance, hill climbing and speed, during 1908.



Touring Car or Baby Tonneau, $3,000.
Including Bosch magneto and gas tank.

Pennsylvania Auto Motor Co.
Bryn Mawr, Pa.

A SUPERB LINE OF CARS—
THE JACKSON
"No Sand Too Deep—No Hill Too Steep."
2-Cylinder and 4-Cylinder
Runabouts, Roadsters, Touring Cars,
18 H. P., 24 H. P., 30 H. P. and 36 H. P.
Prices, $850, $950, $1,250 and $2,000.
JACKSON AUTOMOBILE CO., Jackson, Mich.

WANTS AND FOR SALE

15 cents per line of seven words, cash with order. In capitals, 25 cents per line.

FOR SALE—Electric sight seeing automobiles; three (3) 24-passenger Terrace seats; two (2) 20-passenger, all half lazy backs; 15 horsepower motors; will sell for half price of new. If interested answer. MOTOR TRANSIT CO., Buffalo, N. Y.

FOR SALE—300 sets 28x3 best grade artillery wheels, fitted with clincher rims, less hubs. Write for bargain prices on single sets of the lot. THOMAS B. JEFFERY & COMPANY, Kenosha, Wis.

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One of the little things that count. The almost universal use of Chandler etched name-plates on high-class cars stamps them as the selection of the critical.

Examine them at Space 141, Garden Show.

Chandler Co., Springfield, Mass.

The Bush Radiator
THE BUSH MANUFACTURING CO.
HARTFORD, CONN.

The Low Price of the High-Quality
Lambert Car
is made possible by the low cost of the simple Lambert friction transmission, which is more efficient than any type of complicated, expensive gear transmission.
BUCKEYE MFG. COMPANY, Anderson, Ind.

AJAX TIRES
Guaranteed for 5,000 Miles.
Exhibited at the Madison Sq. Garden & Chicago Shows.
AJAX-GRIEB RUBBER CO.,
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AUGUST OFELDT & SONS
Manufacturers of Coil, Water Tube and Flash Boilers.
KEROSENE AND GASOLINE BURNERS.
Office: 123 Liberty St., NEW YORK, N. Y.
Write for Catalogue.

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Stevens-Duryea
SIX CYLINDER Y TOURING CAR

STEVENS-DURYEA experience and uniform successes as regards Six Cylinder Cars naturally implies that the latest creation will meet with a wide demand and prove its intrinsic merit.

The Six Cylinder Model Y possesses all the original time-tried Stevens-Duryea features coupled with the improvements and refinements of standardized, accepted designs.

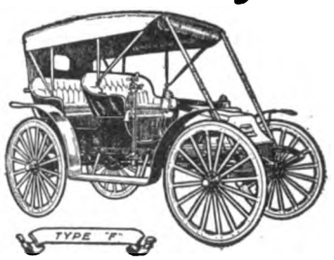
We emphasize that we are more than ever convinced of the decided superiority of six cylinders in higher horsepowers.

PRICE, MODEL Y $4,000

Write for latest literature

STEVENS-DURYEA CO.
CHICOPEE FALLS, MASSACHUSETTS
Members Association Licensed Automobile Manufacturers

THE Reliable Dayton Line



$925 (Without top)

The Reliable Dayton Has "Made Good"

IT is not a $75.00 buggy with a $50.00 motor in it, but it is a MOTOR CAR from the ground up. Is making business for itself in every territory it invades, through its economical features, compared with the pneumatic-tire car.

Let us refer you to several of the company's largest dealers, who have handled the Reliable Dayton the past year; let them tell you their experience. Investigate; get the facts.

Drop us a line for our agency proposition today.

Our Catalog is different. Let us send you a copy.

Reliable Dayton Motor Car Co. Chicago, Ill.
Dept. 14

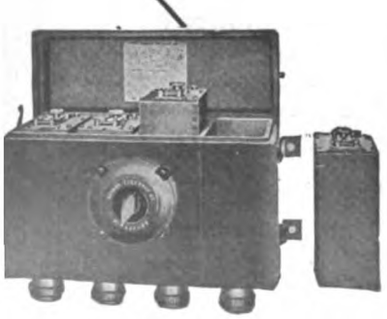
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Heinze ignition apparatus on your 1909 car and get

THE BEST MADE.

SPECIFY HEINZE COILS

Write us if your dealer does not carry them.



Heinze Electric Co.
LOWELL, MASS.

Makers of
COILS, TIMERS, MAGNETOS, SPARK PLUGS.

JOT IT DOWN

to call at our exhibit at the coming Automobile Show at Madison Square Garden, January 16-23.

You will find an interesting display of our product, including several new and distinctive features.

SPACE 311, A. L. A. M. SHOW

Standard Roller Bearing Co.
PHILADELPHIA, PA.

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When It Snows!



WEEDS On All Four Wheels

They enable the driver to steer easily and without effort. The The car responds to the slightest turn of the wheel if four chains are used.

WEED CHAINS

are absolutely necessary. They prevent lost traction on snow-covered roads or in heavy drifts —they HOLD the road wheels and make it possible for the heaviest car to easily negotiate the worst road conditions.

See our exhibit at Madison Square Garden.

WEED CHAIN TIRE GRIP CO.
35 Moore Street, New York.





THE BIG HIT

of the automobile shows is the Firestone Non-Skid tire.

Its all-rubber tread presents a mass of angles, edges and points of road contact that PREVENTS skidding.

An unusually large wearing surface of the toughest possible rubber insures LONG LIFE.

More of them were exhibited on American cars at the Palace Show than all OTHER NON-SKIDS COMBINED.

FIRESTONE TIRE & RUBBER CO., Akron, Ohio

Branches and Agencies Almost Everywhere

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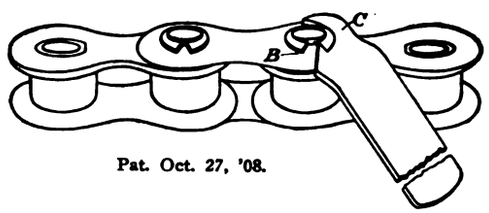
THE ART OF THE SPECIALIST

finds its fullest expression in the new

Baldwin Improved Detachable Chain

Absolutely correct mechanically, it is made exactly to scale and can be depended on under all conditions of service.

The detachable feature of the Baldwin Chain is an improvement of note. It may be run at the highest rates of speed without the separating of the clips shown at "B." These clips can be removed and replaced without injury, and as easily as the cotter pin. We furnish with each chain a tool shown in "C" for removing the clips, which, while not absolutely necessary, facilitates removal and replacement.



Pat. Oct. 27, '08.

SPROCKETS

We are prepard to make quotations on sprockets in quantity at low rates.

THE BALDWIN CHAIN & MFG. CO., Worcester, Mass.

H. V. GREENWOOD, 166 Lake St., Chicago, Ill.

AGENTS:
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M. A. BRYTE, 718 Mission St., San Francisco, Cal.

THE NATIONAL SHOW will be held as usual at CHICAGO

Under the auspices of the NATIONAL ASSOCIATION OF AUTOMOBILE MANUFACTURERS, INC.

February 6 to 13

in the Coliseum and First Regiment Armory, with all the leading makers of Motor Cars, Motor Cycles and Accessories as exhibitors.

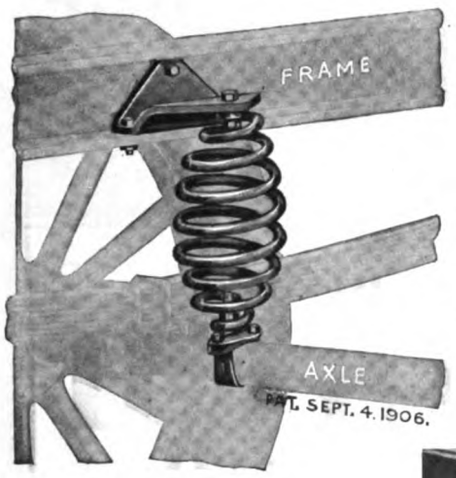
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All the Manufacturers in One Show

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"We are entirely satisfied with them."
ELMORE MFG. CO.
"The 'Sager device' presents advantages not found in other so-called 'shock absorbers.'"
OLDS MOTOR WORKS.
"They add greatly to comfort and reliability."
CRAWFORD AUTOMOBILE CO.
"We find them indispensible."
LOGAN CONSTRUCTION CO.
"Our customers are more than satisfied with them."
DORRIS MOTOR CAR CO.
"Have given us very excellent satisfaction."
THOMAS B. JEFFERY CO. (Rambler).
"In the last three years we have used quantities of your springs, which have given excellent satisfaction."
DAYTON MOTOR CAR CO. (Stoddard-Dayton).
"Used your springs with splendid success."
THE AUTOCAR CO.
"A great benefit and we cannot speak too highly of them."
THE FOREST CITY MOTOR CAR CO. (Jewel).
"We found your springs to be satisfactory."
POPE MFG. CO.

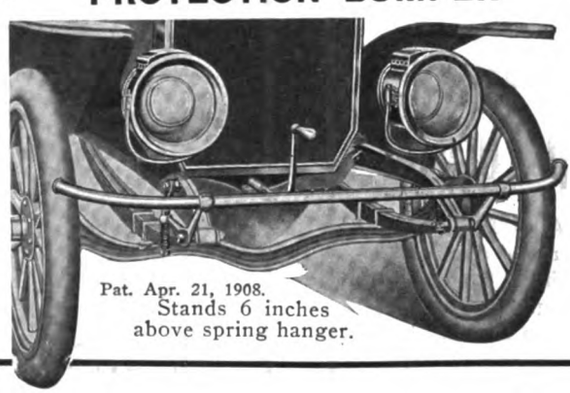
Sager Equalizers

OVER 35,000 IN USE.

18 Leading Makers Endorse Them.
You will, too, if you try them.

J. H. SAGER CO.

PROTECTION BUMPER



Pat. Apr. 21, 1908.
Stands 6 inches above spring hanger.



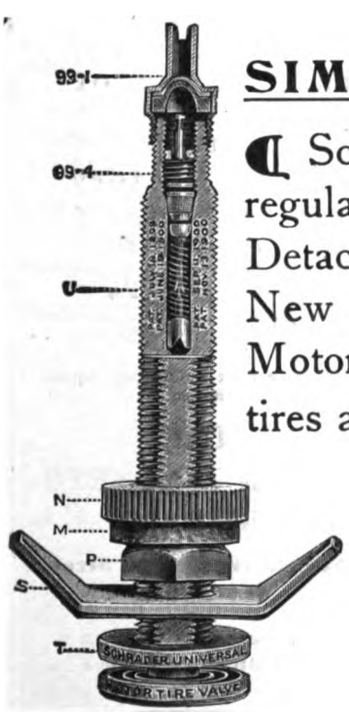
Patent Applied For.

The Demountable Rim
that you have been waiting for.
Detached in 30 Seconds
See us at the Shows or write for particulars.

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ROCHESTER, N. Y.

Schrader Universal Valve

Trade Mark Registered April 30, 1895



SIMPLE AND ABSOLUTELY AIR TIGHT

¶ Schrader Motor Tire Valves, as shown in cut, are the regular equipment for G & J Motor Tires, Hartford Dunlop Detachable Motor Tires, Fisk Detachable Motor Tires, and New Goodyear Detachable Motor Tires. ¶ Our No. 777 Motor Tire Valve is the standard for 3-inch and smaller tires and our No. 725 Motor Tire Valve is the standard for tires larger than 3 inches.

Supplied to the Trade by All Tire Manufacturers

MANUFACTURED BY

A. SCHRADER'S SONS, Inc., 28-30-32 Rose Street, New York

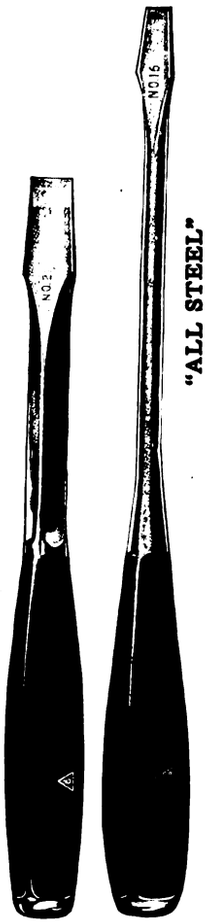
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"Everything Drep-Forged"

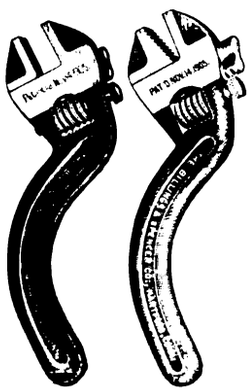
That means that our Auto Tools are the strongest and most durable that can be made. They last a life-time. The steel selected is of the highest grade. In design our tools are thoroughly up to date.

They fit the hand
They are handy to manipulate
They are readily adaptable
They are never failing in use



THE B. & S. AUTO WRENCH

is a tool as necessary to your car as the engine itself. Don't fail to get our catalog of Auto Forgings and Tools.



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About the BOSCH MAGNETO

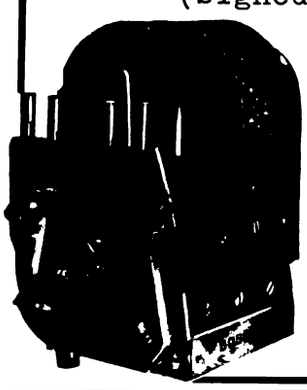
with which his Fiat car (Winner of the Grand Prize at Savannah) was equipped.

New York, December 1, 1908.
THE BOSCH MAGNETO COMPANY,
223-225 West 46th St., City.

Gentlemen: I herewith wish to express my appreciation for the high work performed by the BOSCH MAGNETO installed on my Fiat car, with which I won the Grand Prize Race at Savannah, November 26th, 1908. It has not given a single instance of trouble, and the splendid record of BOSCH IGNITION is thereby once more duly confirmed.

No doubt I owe my victory in a good measure to the perfect working of the BOSCH MAGNETO. Yours very truly,

(Signed), LOUIS WAGNER.



See our exhibit at Madison Square Garden

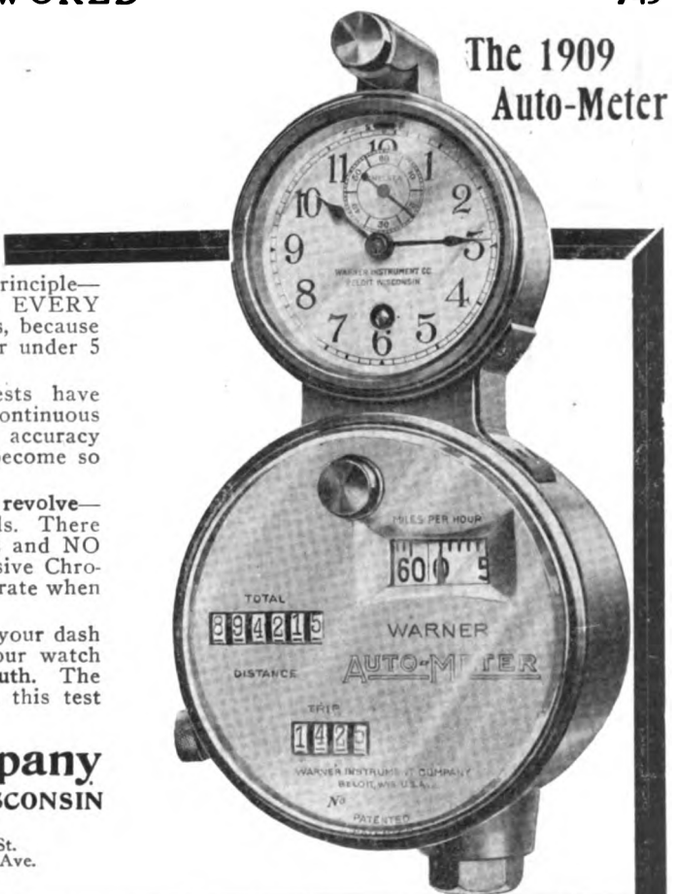
THE BOSCH MAGNETO COMPANY

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NEW YORK

Chicago Branch
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Guaranteed Absolutely Accurate

Is the only Speed Indicator made on the Magnetic Induction Principle—the only principle which makes possible the accurate indication of EVERY VARIATION of speed from zero to maximum. All other indicators, because built on the centrifugal principle, fail to indicate any speed whatever under 5 to 10 miles per hour.

The Auto-Meter so solidly and durably built that practical tests have shown that it will endure a MILLION MILES of riding—subject to continuous jolts—without showing perceptible wear or departing from absolute accuracy more than 10 FEET TO THE MILE. Other instruments quickly become so grossly inaccurate as to be worthless.

There are only two moving parts in the Auto-Meter. These revolve—one on double sapphire bearings, the other on Imported Hoffman Balls. There are no little cams of soft brass, no spiral springs, no delicate parts and NO SLIDING FRICTION in the Auto-Meter. It is built like an expensive Chronometer by the same men using the same costly machines. It is accurate when you get it and will STAY so as long as you have a car to use it on.

We urge comparative tests. Use the Auto-Meter on one side of your dash and any other instrument at **any price** on the other. Then use your watch over a measured course and keep the instrument which **tells the truth.** The Warner Auto-Meter is the only accurate speed indicator made and this test will enable you to KNOW it.

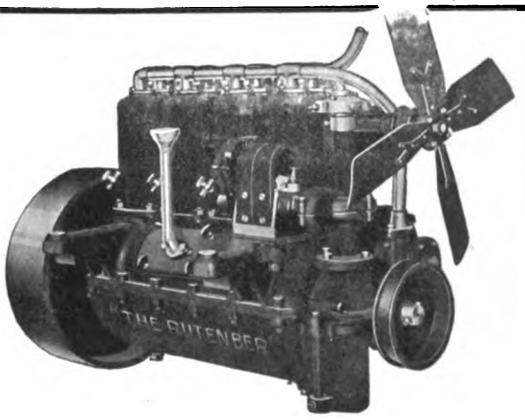
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Factory and Main Offices, 355 Wheeler Ave., BELOIT, WISCONSIN

BRANCH HOUSES:

New York, 1902 Broadway
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THIS AND TWO OTHER "FOURS" —AND A 50 HORSEPOWER "SIX"!



Proved and recognized successes, with a service record. Offered in 25 horsepower, 30-35 horsepower, 40 horsepower, and the 6-cylinder 50 horsepower. All fitted with oil pan base. Equipped for magneto attachment.

"Rutenber" Motors and Carburetors, Clutches and Fans

The Western Motor Co., Logansport, Ind.

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After January 1st, 1909,

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will be attached to the outside of

All Ignition Coil Units

made under our patents and sold by our licensees.

THE UNLICENSED

Manufacturers, Users or Vendors

WILL BE PROSECUTED.

The Unit Coil Co.

Address license application to the Secretary, 15 Exchange Place, Jersey City, N. J.

SEAL
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Packard Ignition Cable

If your car is wired with PACKARD ENAMELED IGNITION CABLE you can be dead sure you will have no trouble so far as the wiring is concerned.

THE PACKARD ELECTRIC COMPANY, 303 Dana Ave., WARREN, OHIO

When at the Show

do not fail to see the

TUCKAHOE GREASE GUN

New and very meritorious. The only self-filling combination oiler and grease gun. Can be filled with grease in three seconds. Regulated by throwing a latch. Its use insures quick oiling and clean hands. Lower in price than others. Write for circular.

Manufactured and sold by the

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TUCKAHOE, N. Y.



Users of **Invader Oil**

THE OIL THAT GRAPHITIZES

are responsible for its popularity

YOU NAME THE CAR WE'LL NAME THE GRADE

MADE ONLY BY

CHAS. F. KELLOM & CO.

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Boston Branch: 284 Columbus Avenue.

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MAKERS OF

PRESSED STEEL FRAMES

(Capacity 100,000 per annum.)

Heavy and Difficult Stampings
Front and Rear Axles
Steering Columns
Transmissions, Selective and Progressive
Multiple Disc Clutches

SEE OUR EXHIBITS:
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THE GYROSCOPE CAR

The Simplest Automobile in the World.

$750—The Price—$750.

GYROSCOPE AUTOMOBILE CO. (INC.)
Gyroscope Bldg.,
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Tire Troubles?

Use Permanit

Demonstrated before Board of Governors Harrisburg Motor Club with great success. For particulars write

ADOLF KARL & CO.,
237-9 Washington St., Newark, N. J.

AVOID ACCIDENTS

by using the

Wridgway No Glare Shade

which adds to the efficiency of the lamps, and keeps glare from blinding other users of the highways. Can be fitted to any existing lamp.

PEERLESS MOTOR CAR CO.,
220 to 224 W. 41st St., NEW YORK

"CONTINENTAL" MOTORS ARE STANDARD



Get our quotations on high grade two and four cylinder motors, 10 to 45 horsepower. They are equipped with self-contained oiling system and ready for attaching magneto. Highest grade workmanship, efficient, durable and simple. Also clutches and transmissions. Send for catalogue.

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Stoddard-Dayton

ONE Quality for ALL Models
ONE Price for ALL Buyers

Write for 1909 Catalog.

THE DAYTON MOTOR CAR CO.,
Dayton, O.

The PULLMAN

4-40 Roadster. Price, $3,000.

that made the run from Philadelphia to Savannah, Ga., March 5th to 18th, through mud up to the radiator, beating all previous records.

YORK MOTOR CAR CO., York, Pa.

OAKLAND

40 H. P. Four Cylinder, Shaft Drive, $1,600.

OAKLAND MOTOR CAR CO.,
Pontiac, Mich.

TRUFFAULT-HARTFORD

Trade
SHOCK ABSORBER
Mark

The Device that made Safe, Speedy and Comfortable Automobiling Possible.

Write for catalogue, Department D.

HARTFORD SUSPENSION CO.,
E. V. Hartford, Pres. 145 Bay St., Jersey City, N. J.

Continental

READY FLATED TIRES

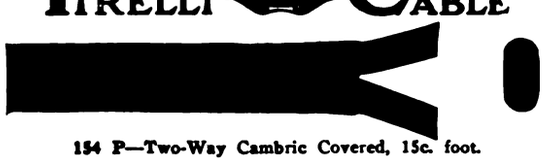
Universally approved by all motorists.

CONTINENTAL CAOUTCHOUC CO.,
1788-90 Broadway, New York City.
WRITE FOR PRICES OR INFORMATION

Locomobile

The Locomobile Company of America,
Bridgeport, Conn.

PIRELLI CABLE



154 P—Two-Way Cambric Covered, 15c. foot.

Our Cable Card

Illustrating 11 Varieties of cable in actual sizes mailed upon request.

This is No. 154 P., Two-Way, Cambric Covered.

To Avoid Ignition Trouble, Specify PIRELLI Wire. **PIRELLI & CO., 296 Broadway, New York**

For sale by MOTOR CAR EQUIPMENT CO., 55 Warren St., and 1727 Broadway, New York City.

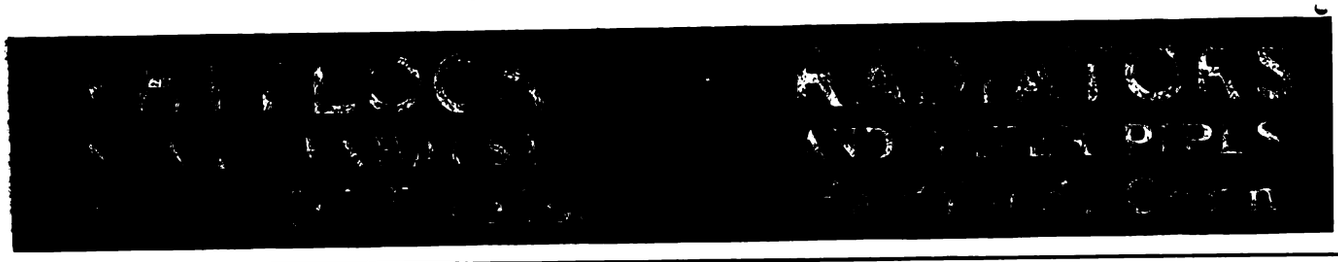
DIAMOND CHAINS

drive their cars more miles per dollar cost than any others

TRADE MARK

DIAMOND CHAIN & MFG CO.
189 W. Georgia St.,
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FRANKLIN
Automobiles

Franklin light-weight construction is stronger than ordinary heavy construction—and does a lot more. Write for catalogue.

H. H. FRANKLIN MFG. CO., Syracuse, N. Y.

$11,000,000
worth of experience behind the new
$1,500 MITCHELL

This price includes $300 worth of extra automobile value not included in other cars selling at this price. Learn what it is. Write to-day for detailed description.

MITCHELL MOTOR CAR CO.,
Standard Manufacturers A. M. C. M. A.
574 Mitchell St., Racine, Wis.

HAVE YOU SEEN
THE PERFECTION WRENCH?

The newest and best wrench made; all steel—great strength; instantly adjusted; easily and quickly operated; positive grip; immense time, trouble, and temper saver; best "all round tool" ever offered for sale.

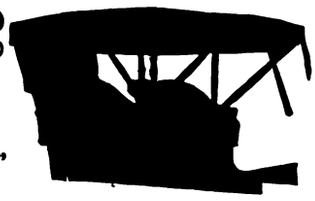
"You will want one when you see it."

For circular address,

THE PERFECTION WRENCH CO.,
Box 426, PORT CHESTER, N. Y.

The Acme JUSTIFIES ITS NAME
THE ACME MOTOR CAR CO.
Reading, Pa.

SPRINGFIELD TOP (Pat. 1895)
Aluminum Bodies
SPRINGFIELD METAL BODY CO.,
306 Birnie Ave.,
Springfield, Mass.





Steel Tires

Full of Air.
Tire expense cut in two.
Cannot Blow Out, Rim Cut or Puncture.
As Flexible as Rubber Anti-Skid.

That part of a tire with a blowout or a rim cut in it will last longer than any other part if encircled by a few sections of steel.

Thousands in use.

Kimball Tire Case Co.
172 Broadway
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WE WILL NOT

accept your contract unless we can give you the delivery you require. We will not accept more contracts than we can fill with proper attention to each. We make Pressed Steel Frames and Automobile Stampings.

THE HYDRAULIC PRESSED STEEL CO.,
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Columbia Gasolene and Electric Automobiles
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COMPLETE COURSE
AUTOMOBILE INSTRUCTION

Invaluable to the owner or prospective owner of a motor car. Practical and to the point. Send for prospectus to the

Correspondence School of Motor Car Practice
Tarrytown, N. Y.

I HAVE A NORTHERN LIMOUSINE which for the best of reasons I want to sell quickly.

It is in perfect condition, having been driven less than 500 miles, and I think it's one of the sweetest running, handsomest appearing, town cars made.

Tires are brand new and the varnish isn't damaged—in fact the car is just as good as new when it sold for $2,500 and I'll sell it for half—$1,250.

Address E. M. M., 382 Pennsylvania Ave., Detroit, Mich.

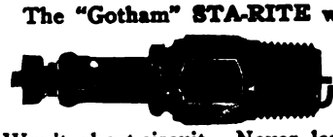
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on your automobile mean more comfort, speed, safety, economy. Prove it at our expense. 30 days free trial.

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CLEVELAND SPARK PLUGS
"They Shoot a Flame."
CLEVELAND SPARK PLUG CO.
CLEVELAND, OHIO

The "Gotham" STA-RITE will end your spark plug troubles. Soot can't stick to the porcelain.



Won't short-circuit. Never leaks. Can be taken apart and cleaned with ease. Of dealers, or direct, $1.00.

THE R. E. HARDY CO., 25 W. 42d St., New York.
At Madison Square Garden, Space No. 133; Chicago, at the Coliseum, Space No. 56.

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It's light. Marvelous economy in maintenance. A plan of purchase within the reach of all. Send for Book B.

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Successor to Waltham Mfg. Co., Waltham, Mass.

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Gasoline and Electric—for Pleasure and Business
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BRANCHES—Newark, 264 Halsey St.; Detroit, 842 Woodward Ave.; Boston, 292 Devonshire St.; Chicago, 20 La Salle St., 1301 Michigan Ave.; New York, 73d St. & Broadway; 148 Chambers St. AGENCIES—Pittsburg, Consumers' Auto Supply Co.; Kansas City, Mo., Empire Tire & Rubber Co.; Atlanta, Ga., Dunham Rubber Co.; Cleveland, O., Motor Supply Agency Co.; Norfolk, Va., Wm. H. Grover; Denver, Denver Auto Goods Co.; Jacksonville, Fla., Savell Rubber Co.; Philadelphia, Penn Auto Supply Co.; Los Angeles, Cal., Pacific Elec. Wks.; Buffalo, N. Y., Empire Sales Co.; Minneapolis, Empire Tire & Rubber Co.; Savannah, Ga., Harris Tire Co.; New Orleans, La., H. A. Testard.



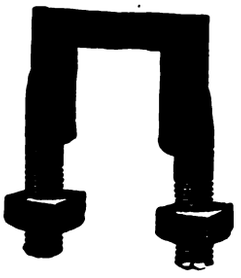
For Automobile Bodies, Dashes, Guards, Bonnets, Battery Boxes, Drip Pans, Mufflers, Etc.

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A Metal That's A Time and Money Saver

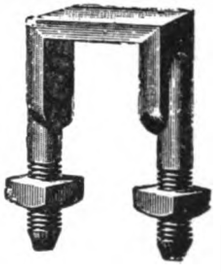
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FORGINGS for the AUTOMOBILE TRADE



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Thousands of our **Spring Clips** are now in use, having been supplied to the leading automobile manufacturers.



Have you secured our prices?

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Cramp — Metals



Give Your Car a Good Name
by using

SUPPLEMENTARY SPIRAL SPRINGS

Change a bone-shaker and a spring-breaker into an easy riding, real automobile in which you can take pride and your passengers comfort. The use of S. S. S. change a near-good car to a real good car and add the finishing touch of luxury to the best cars. Our booklet tells you all about them, and is yours for the asking. Write for it.

SUPPLEMENTARY SPIRAL SPRING CO., 4355 Delmar Ave. St. Louis, Mo.

New York Branch, Removed to Motor Mart Building. (Larger Quarters.)

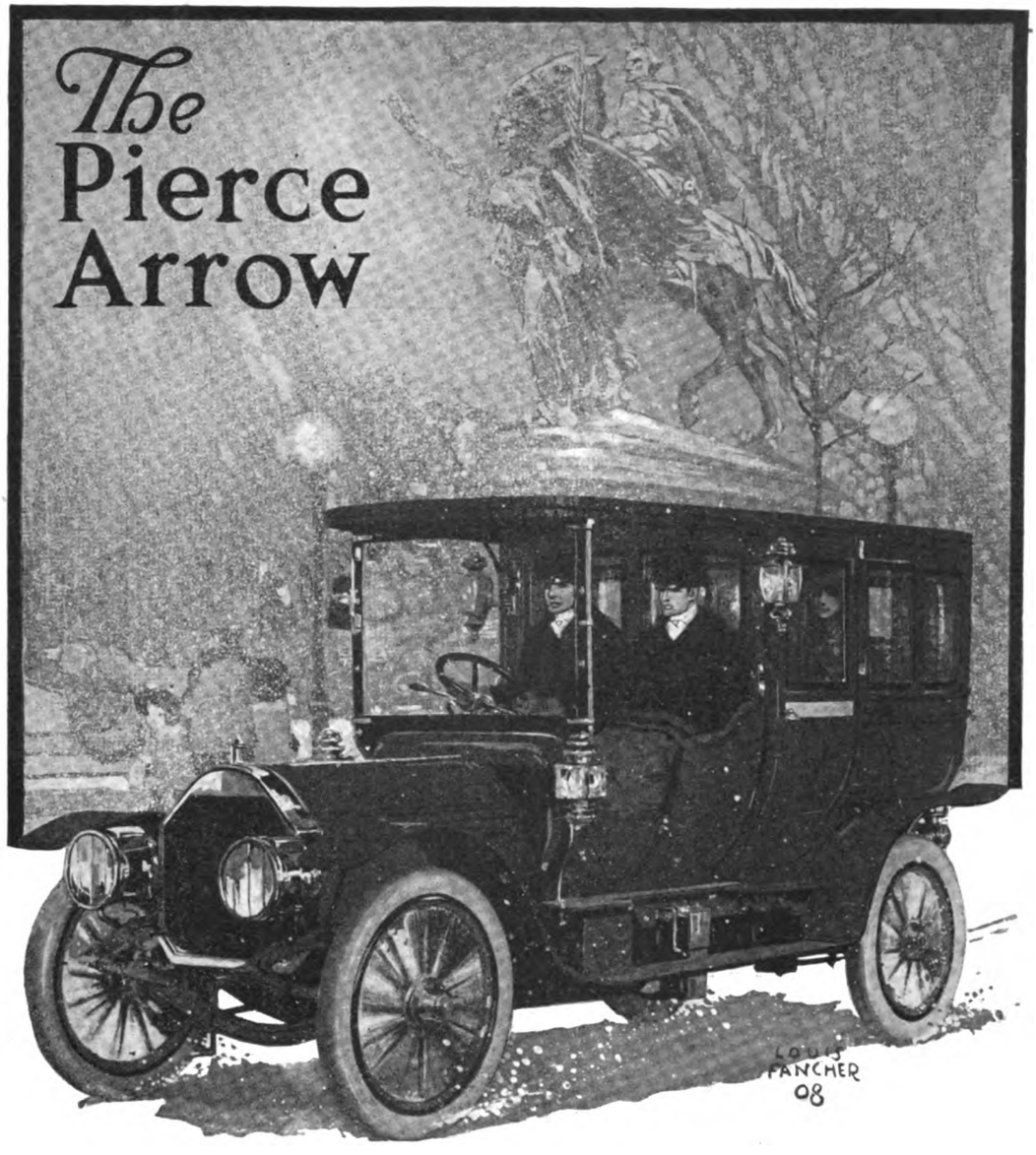
Model B—Brush Runabout

A CAR OF SIMPLE DESIGN MADE WELL
NOT A COMPLICATED DESIGN MADE CHEAPLY

Its records and the opinions of its users speak more loudly than self praise. Agencies for 1909 are being closed rapidly. Much good territory still open.

BRUSH RUNABOUT COMPANY, Detroit, Mich.

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48 Horse Power, 7-Passenger, Suburban Limousine, 6 Cylinders, 130-inch Wheel Base, Price $6100. Besides the Suburban Limousine, the other new types on this chassis include Roadster, Tourabout, Touring Car and Landau.

In a car for city use not only comfort but also elegance is needed. PIERCE ARROW Broughams and Landaulettes have all the smartness of a well-appointed carriage, the perfect service that comes from the PIERCE engine and the freedom from repairs and other annoyances which is characteristic of all PIERCE Cars.

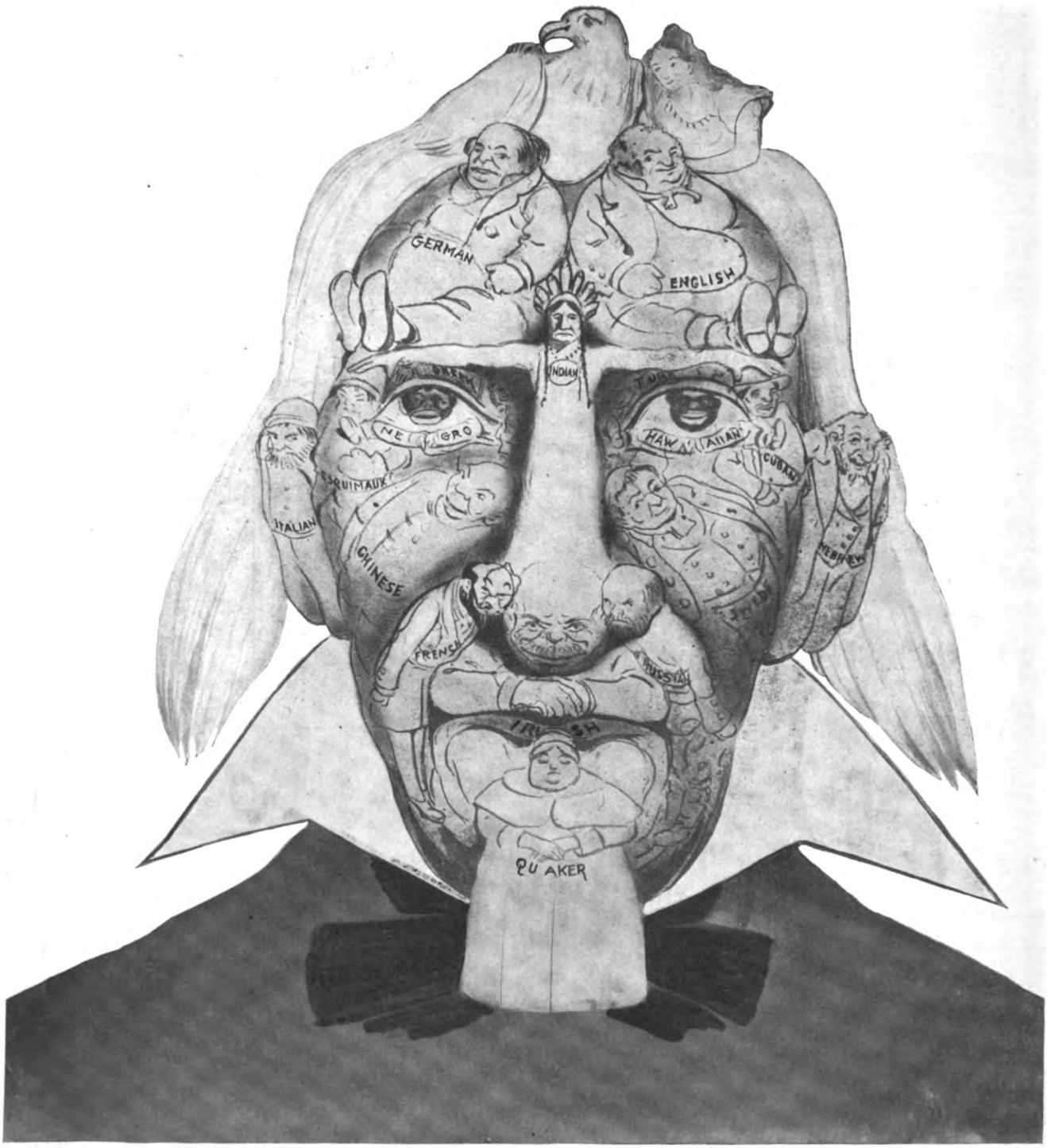
The Pierce Arrow Cars will be exhibited in New York only at the Madison Square Garden Show, January 16 to 23, 1909, and at the salesroom of our New York representatives, The Harrolds Motor Car Company, 233 W. 54th Street.

THE GEORGE N. PIERCE COMPANY, BUFFALO, NEW YORK

Members Association Licensed Automobile Manufacturers.

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THE MARMON

"A Mechanical Masterpiece"



Marmon "Thirty-two", $2400

An Automobile Classic—A Conspicuous Value

The Marmon "Thirty-two" is neither a cheaply-built car at a low price, nor a "good enough" car at a high price.

It is a high grade car in every sense of the word, built as carefully as a fine watch. The parts are interchangeable, all of them manufactured by us, rigidly tested and carefully assembled into a harmonious whole.

Weighing not over 2,100 pounds, with 32-40 H. P., this "Thirty-two" has a world of speed and ability. In performance, as in appearance, it is a car that needs no apologies—occasions no regrets—a car you will be proud to own.

The "Thirty-two" sustains the Marmon reputation for mechanical excellence. It can be depended upon to stand up under the most severe usage, year after year.

To the man who looks ahead and buys with his eyes wide open, this car is an emphatic bargain. No other car on the market at $3,500 or less offers so much actual value.

Get the specifications, notice the character of design and equipment, and make a few careful comparisons.

Genuine Krupp and Chrome Nickel Steels are used for important parts. Bosch magneto and battery—dual system. Three point motor support. Straight line shaft drive. Rear axle and transmission in one unit. Marmon oiling system. Large brakes. Hess-Bright imported ball bearings. Big tires (34x4 all around). Complete equipment. Furnished as Touring Car, Roadster, Suburban, Coupe, or Limousine Town Car.

The Marmon "Fifty," $3750

A superb car, of most distinguished appearance. In hard, practical cash value, it is the superior of the most famous foreign cars selling at two or three times the price. Furnished with seven-passenger body. 50-60 H. P. Completely equipped.

Marmon "Forty-five" Roadster, a special model, $3,500

The 1909 Marmon Models will be exhibited at the Chicago Show, Feb. 6-13

Nordyke & Marmon Co.
Estab. 1851
Indianapolis, Ind.
Standard Mfrs., A.M.C.M.A.





Built Here

Marmon "Fifty," $3750

The Easiest Riding Car In The World

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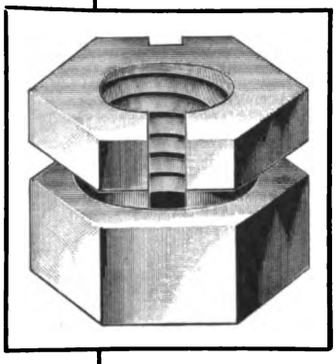
"Locking the door after the pony is stolen"

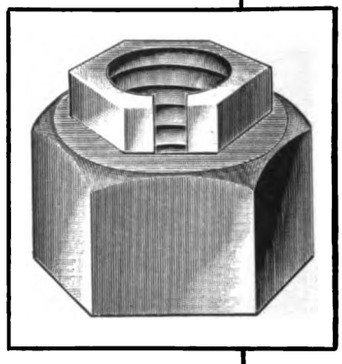
is a good deal like postponing the use of

Columbia Lock Nuts

Now

for it's only a postponement at best. Why not take a double-twist on the forelock of old Father Time and incorporate the use of Columbia Lock Nuts in your construction BEFORE you have occasion for regrets? Columbia Lock Nuts are in general use and are regarded as a necessity by some of the biggest railroad systems in the country. They ought to be a double necessity on automobiles. They are already used by many prominent makers. They should be used on every automobile everywhere.





¶Columbia Lock Nuts simply cannot work loose. Vibration, even the constant vibration of solid tires, cannot affect or loosen them. They are automobile insurance of the very best kind and their cost is not a factor. Let us prove our case.

COLUMBIA NUT & BOLT COMPANY

Bridgeport, Connecticut

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Three Mathesons Win

FIRST, THIRD and FOURTH PLACES

In capturing MacDONALD & CAMPBELL $600 Cup

300 Miles Mid-Winter Contest

FROM PHILADELPHIA TO WILKESBARRE AND RETURN

Over the Pocono Mountains, making also the highest team score against a field of

32 CONTESTANTS

including these cars: 2 Peerless, 1 Stearns, 1 Studebaker, 2 Cadillacs, 1 Acme, 3 Stoddard-Daytons, 1 Elmore, 2 Franklins, 3 Mitchells, 2 Wintons, 3 Oldsmobiles, 2 Maxwells, 2 Knoxes, 2 Ramblers, 1 Buick, 1 Premier.

Only three of the 32 cars had perfect time scores and these three were Mathesons.

No. 7 Matheson Wins First Place

For MacDonald & Campbell $600 Cup

This car, owned and entered by Mr. F. M. Kirby, Wilkesbarre, Pa., and driven by Mr. Kirby's chauffeur, William Miller, is a regular stock Matheson touring car which Mr. Kirby had driven over 7,000 miles prior to entering it in the contest. Actual running time, 5 hours and 31 minutes, breaking all previous records.

No. 15 Matheson Wins Third Place

This car, entered and driven by Mr. Ross Anderson, Wilkesbarre, Pa., was a regular stock Matheson touring car which had covered 18,000 miles in service prior to entering this contest. Actual running time, 6 hours and 4 minutes; also new record time.

No. 6 Matheson Wins Fourth Place

This car, entered by ourselves, was a regular stock Matheson touring car which had covered over 12,000 miles in service prior to entering this contest. Actual running time, 5 hours and 24 minutes, the fastest time ever made by any car over this course, Summer or Winter.

ALL THREE MATHESONS FINISHED WITH ABSOLUTELY PERFECT ROAD SCORES, MAKING EVERY CONTROL ON TIME.

Only one stop was made on account of tire trouble, proving our claim that the Matheson Car, due to its beautiful balance, chain drive and multiple disc clutch, is the easiest car on tires. Our customers usually cover from 5,000 to 10,000 miles on their original tires.

THE CONCLUSION: **The Matheson Car has proved in every endurance run it has entered that it is far and away the most reliable and serviceable as well as the most economical and fastest touring car in all the world**

AND THIS IS ALSO OUR GUARANTY

MATHESON AUTOMOBILE COMPANY

1886-1888 BROADWAY, Cor. 62d St. Member A. L. A. M. **NEW YORK CITY**

We exhibit only at Madison Square Garden Show, January 16-23, 1909. **Demonstrations by Appointment.**

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The 1909

Overland Catalog

IS NOW READY FOR DISTRIBUTION

It contains a full and exhaustive description, profusely illustrated, of the most wonderful line of automobiles ever placed on the American market, consisting of

4 and 6 Cylinder Roadsters, Touring Cars and Enclosed Cars. $1,250 - $2,250

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The extra trouble and expense we put on

MORGAN & WRIGHT TIRES

before they leave the factory will take the place of the trouble and expense you have been accustomed to put on your tires when they were in service.

We attribute a large measure of the success of our tires to our system of inspection—starting with the testing of the pure Para gum and Sea Island cotton fabrics—continuing up thru the processes of compounding, frictioning and building—and ending only when the finished tire has been pounded, stretched, turned inside out and put thru every conceivable test that will develop imperfections if any are ever to develop.

You can materially reduce your car maintenance bills by letting us bear the expense of proving the quality of your tires.

And they cost no more than other brands.

MORGAN & WRIGHT, DETROIT

Branches, Agencies or Dealers Everywhere

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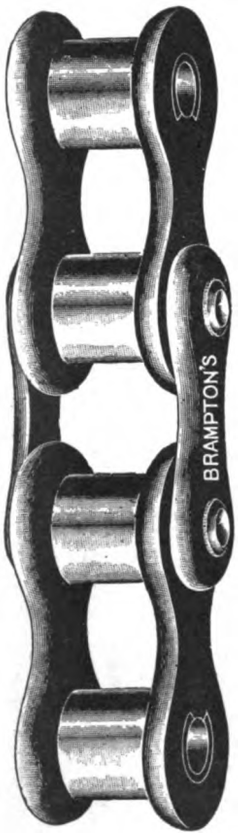


THE CELEBRATED

MUST BE SEEN

The Highest Art of

THE BRAMPTON CHAIN



The *strongest* chain in the world; made of *self-hardening steel* with large spun rivets, chamferred side plates (no sharp edges). All parts of this chain are polished and fit the sprockets (which are properly cut) without friction.

Imitation, What's the Definition?

All Brampton Chains are stamped with the name Brampton on each outside link; Beware of the imitation and get the genuine Brampton.

PRICES THE SAME AS OTHER CHAINS

American Size Brampton Roller Chain

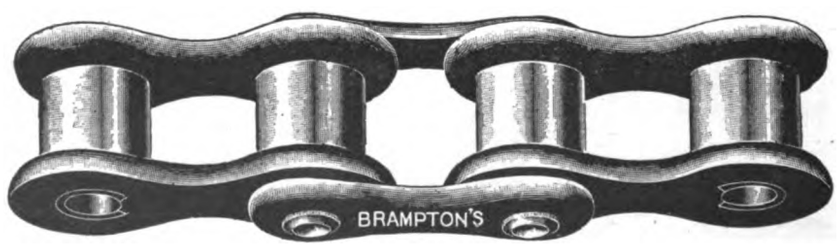
at American Chain Prices, *to fit all American Cars and Motorcycles.*

CAN BE PURCHASED FROM ALL JOBBERS

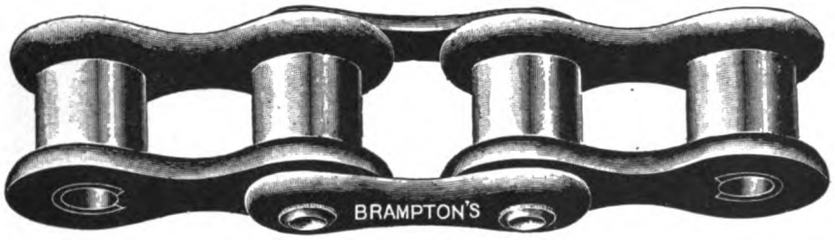
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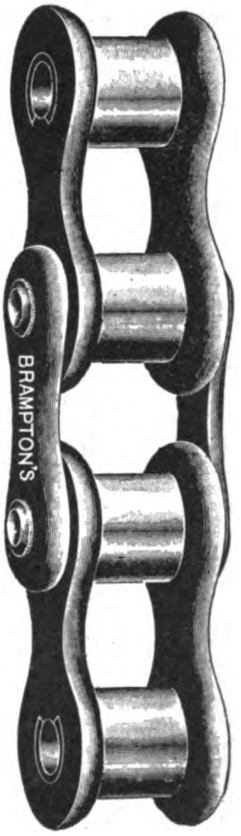
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BRAMPTON CHAIN

Garden Show, Space No. 243
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Motor Chain Construction



LARGE SALES

make it possible for us to import the CELEBRATED BRAMPTON CHAIN from England (paying freight and duty) and sell it at the same price at which the several other automobile chains are sold to manufacturers, jobbers, dealers and users.

Prices Being Equal What Would You Do?

The price being equal, it's presumable you want the best, and full value for your money. In such cases, the BRAMPTON fills the bill, and the prices are the same to manufacturers, jobbers, dealers and consumers as any other chain of equal size.

We carry in stock the BRAMPTON CHAINS to fit Foreign Cars—Mercedes, Panhard, Martini, Fiat, etc., etc.

AND DEALERS OR ANY OF OUR BRANCHES

Agents Wanted in Unoccupied Territory.

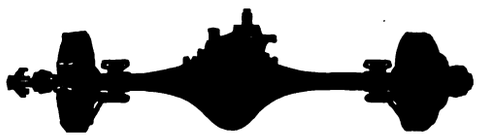
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DETROIT BUFFALO 54th Street and Eighth Ave., NEW YORK CITY



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562—Floating Hub Type—Top View



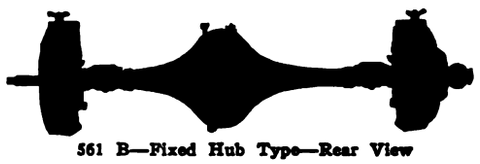
525—Fixed Hub Type.



Brake



561 A—Fixed Hub Type—Front View



561 B—Fixed Hub Type—Rear View

TIMKEN

New One-Piece Pressed Steel Power Axle

¶ The new Timken Axles as shown in the illustrations herewith, is a one piece pressed steel form, shaped to give better than truss resistance to load, end thrust and breaking strains, and eliminate the vibration common to cast steel or forged axles of the built up type.

¶ The entire housing is a load bearing and gear encasing member in a single unit, clear and smooth, without angles or protruding parts, supports or braces, with nothing to vibrate, nothing to rattle, nothing to work loose, nothing to catch mud and easy to clean.

¶ The power unit (differential bearings and adjustments for same, pinion shaft and bearings, drive and pinion gears), is a compact unit that can be removed bodily from the axle case or housing, without taking down the axles or disturbing brake equipment, springs, hubs or bearings.

¶ The axle, complete with differential gear carrier, brakes and spring seats, is made in both clutch and fixed type hubs for cars weighing from 1,500 to 3,000 pounds empty, and 45 horsepower or less. See these new axles at the Timken exhibit at the Shows, or write direct for illustrated descriptive matter.

We will exhibit Madison Square Garden, January 16th-23rd; Chicago, February 6th-13th

THE TIMKEN ROLLER BEARING AXLE CO.

Canton, Ohio, U. S. A.

Branches, 10 East 31st Street, New York. 429 Wabash Avenue, Chicago.

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Continental

America's Best Pneumatic Tire

OWNERS DEMAND THEM

Experienced automobile owners **insist** upon Continental tires as the equipment for their cars. They know that these tires outwear and cause less trouble than **all** others. It is wise to take the advice of those that have **thoroughly tried** and **found out** rather than to accept "any old" tire which may be offered. Continental tires will do away with large tire bills, assure safety and obviate trouble and worry.

DEALERS RECOMMEND THEM

All the best dealers throughout the country recommend Continental tires and carry all styles and sizes in stock. They know that Continental tires are manufactured of the **best** material obtainable that automobilists' requirements are met with and satisfied customers are thus assured. No long delays—there and back again without continually stopping for tire changes.

MANUFACTURERS SUPPLY THEM

All the largest manufacturers of automobiles equip their cars with Continental tires whenever requested at no extra cost—others use them as regular equipment. These manufacturers by experience have found out the good qualities of Continental Tires. In offering Continental Tires we have combined the owners, dealers, and manufacturers' requirements—the results **"America's Best Pneumatic Tires."**

CONTINENTAL READY-FLATED TIRES

Continental tires or any other standard clincher tire can be fitted on our demountable rims and carried already inflated on spare rims. When trouble is met with, remove the damaged tire and replace it with an already inflated tire, taking almost no time. We guarantee this equipment to the extent that if not perfectly satisfactory original replaced at no cost to the purchaser.

Write for our latest booklet entitled "Continental Ready-Flated Tires" and prices.

Continental Caoutchouc Company

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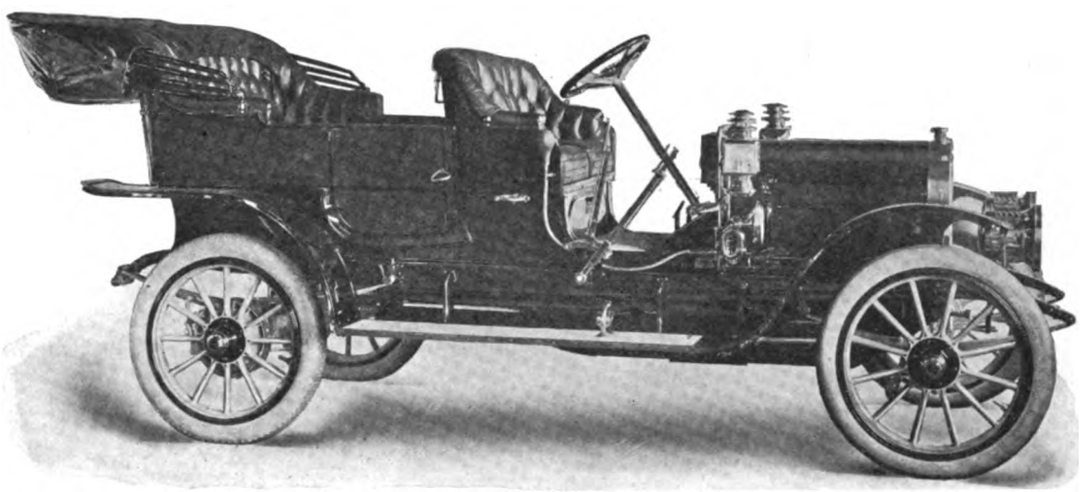
REPRESENTATIVES EVERYWHER YOU CAN MOTOR

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THE SELDEN CAR

MADE BY

"The Father of Them All"



One Price, $2,000. F. O. B. Rochester.

TOURING CAR, ROADSTER, TOY TONNEAU

A genuinely good car cannot be made and sold for less than $2,000. By this we mean a car like the Selden, containing nothing but the best of materials, workmanship and finish. A car that the manufacturer can stand behind and guarantee for at least a year against any imperfections in workmanship or material.

We buy only the best materials, employ only skilled labor and pay particular attention to details and finish, thereby producing a strictly high-grade car at the lowest possible price.

The up-keep and maintenance of a medium-priced car like the Selden is within the reach of any man of moderate means and the value of the car does not depreciate like that of the lower priced cars. This is the point to be considered by every purchaser.

The Selden Car is a 4-cylinder 28-30 horsepower (developing 37 horsepower) five passenger Touring Car or three passenger Roadster, with 114-inch wheel base, 34-inch wheels, shaft drive, selective control, pressed steel frame, metal body, fully equipped.

Superb riding, roomy tonneau, luxurious upholstery, smooth running, great hill-climber, flexible and easily handled, economical in maintenance and up-keep, fine finish, stylish and attractive.

THE COMING CAR OF MODERATE PRICE

Catalog and Agency proposition upon request. Agencies wanted everywhere.

We will exhibit at Madison Square Garden Show.

SELDEN MOTOR VEHICLE COMPANY

GEO. B. SELDEN, Pres. Members Association Licensed Automobile Manufacturers. ROCHESTER, N. Y.

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This Tire Will Give You The Best Service

There may be other tires on the market that probably look from outside appearance to be as good as the G & J, but if you will get sections of the different tires and compare the quality of rubber, its toughness, and the manner in which it is embedded into the meshes of the fabric you will note there is a difference. After making this comparison and also noting carefully the general construction, you will not wonder why so many are specifying G & J Tires.

G&J TIRE CO.

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Mr. Dealer:



Where Stewart Speedometers are Manufactured

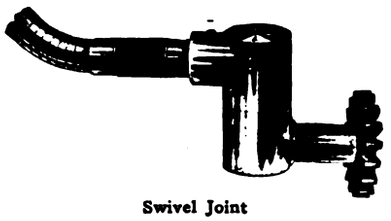
Don't sell your customer a Speedometer WITHOUT AN ODOMETER. Such an instrument is being offered you. It does not pay to trifle.

The STEWART SPEEDOMETER

No. 11



Where Flexible Shafts are Manufactured



Swivel Joint

has an enclosed Odometer registering up to 10,000 miles and repeat. It is fitted with the highest grade flexible shaft, and is backed up with an ABSOLUTE GUARANTEE FOR FIVE YEARS



MODEL 4—Four-inch, 60-mile dial, enclosed season odometer and automatic resetting trip register and maximum speed hand, price **$40**

Stewart & Clark Mfg. Co.

509 Diversey Boulevard, Chicago, Ill., U. S. A.

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If there is one time more than another to get down to business it is when you buy a runabout.

No argument there. **You want what you want.** You want service; you want it day in and day out—every day, cold or hot. You want economy too.

You want a real *runabout*—one scientifically designed for the work it has to do. You do not want a cross between a touring-car and a roadster—something that is half one thing and half another. You want a runabout, a handy comfortable vehicle.

Franklin Model G runabout is built in three types—for two, three or four passengers. The original Franklin automobile was a runabout. Model G is the direct descendant—refined, stronger, more powerful, longer lived, and in design right up to the minute—a runabout all through.

The standard finish is a combination of rich red and black—not glaring, but striking and attractive; and the colors are durable.

Model G runabout has full elliptic springs of extra length front and back. The chassis frame is wood, laminated. This construction overcomes jolting and jarring and makes comfortable riding on all roads. It has 32" wheels, as large as used on many touring-cars. Large wheels give road smoothness; and the greater the diameter of wheels the longer the tires last.

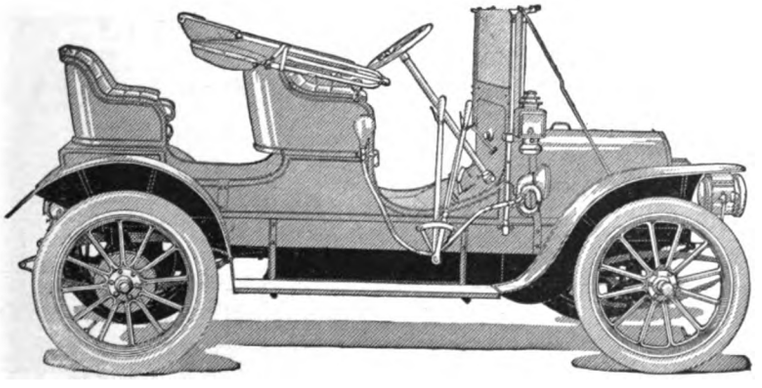
The wheel base of Model G runabout is 91½"—the correct length for maximum comfort over rough pavements and bumpy roads, and yet not too long for compactness and manageability. It is readily turned around in an ordinary city street without backing. It handles and controls easily under all circumstances. The rear seats are designed for use, and with the full elliptic spring suspension and non-jarring Franklin construction they are comfortable to ride in—far more comfortable even than the tonneau of a touring-car with half elliptic springs and steel chassis frame.

And Model G runabout is light weight. Its light weight begins with its air-cooled motor. All the weight of water and water-cooling apparatus is dispensed with. There is not anything to leak nor to freeze. You can leave Model G runabout standing in any weather and find it always ready. You do not have to bother with "anti-freezing solutions" or worry about leakage.

Every Franklin motor by means of an auxiliary cylinder exhaust and sheet metal radiating flanges is cooled by air without the aid of water. Therefore, Model G runabout is not subject to disablement due to leakage, boiling or freezing. It gives you service day in and day out, cold or hot. Its light weight does away with the usual worry about tires.

Altogether Model G is the ideal runabout. Its 18 horse-power air-cooled engine gives it more ability than many water-cooled machines of much higher horse-power rating. Any Franklin dealer will show you.

Our new 40 page catalogue shows the entire Franklin line—four-cylinder and six-cylinder runabouts and touring-cars. Every automobilist ought to have this book. But the edition is limited and we send it only to those who ask.



Franklin Model G Runabout

18 horsepower, four-cylinder long stroke air-cooled motor. Multiple disc clutch, sliding gear transmission, shaft drive, Bosch high tension magneto.

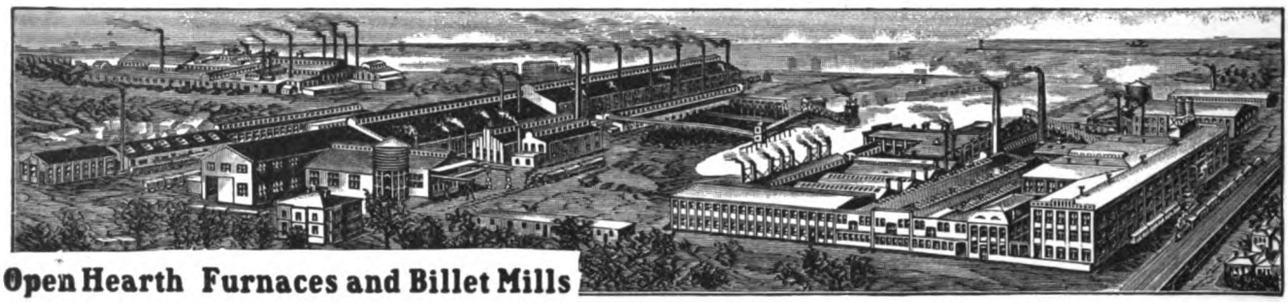
With single or double rear seat $1800. As a two-passenger vehicle with hamper $1750. Top extra.

H H FRANKLIN MANUFACTURING COMPANY, Syracuse N Y

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The Home of "Swedoh" Spring Steel Rims

Its size is eloquent testimony to the merits of its product.

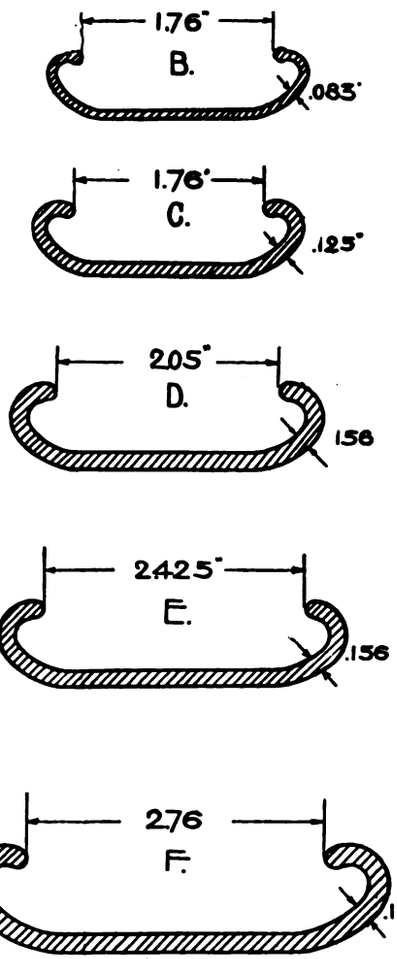


Open Hearth Furnaces and Billet Mills

"TRUE AS ('Swedoh') STEEL"

has an added significance when applied to rims meaning A TRUE CIRCLE OF STEEL THAT STAYS TRUE. See that they are on all your automobiles.

Rims for Wood Wheels



We also manufacture a complete line of COPPERIZED AUTOMOBILE OILERS—the kind that last.

AMERICAN TUBE & STAMPING CO.
N. Y. Office, 100 Broadway BRIDGEPORT, CONN.

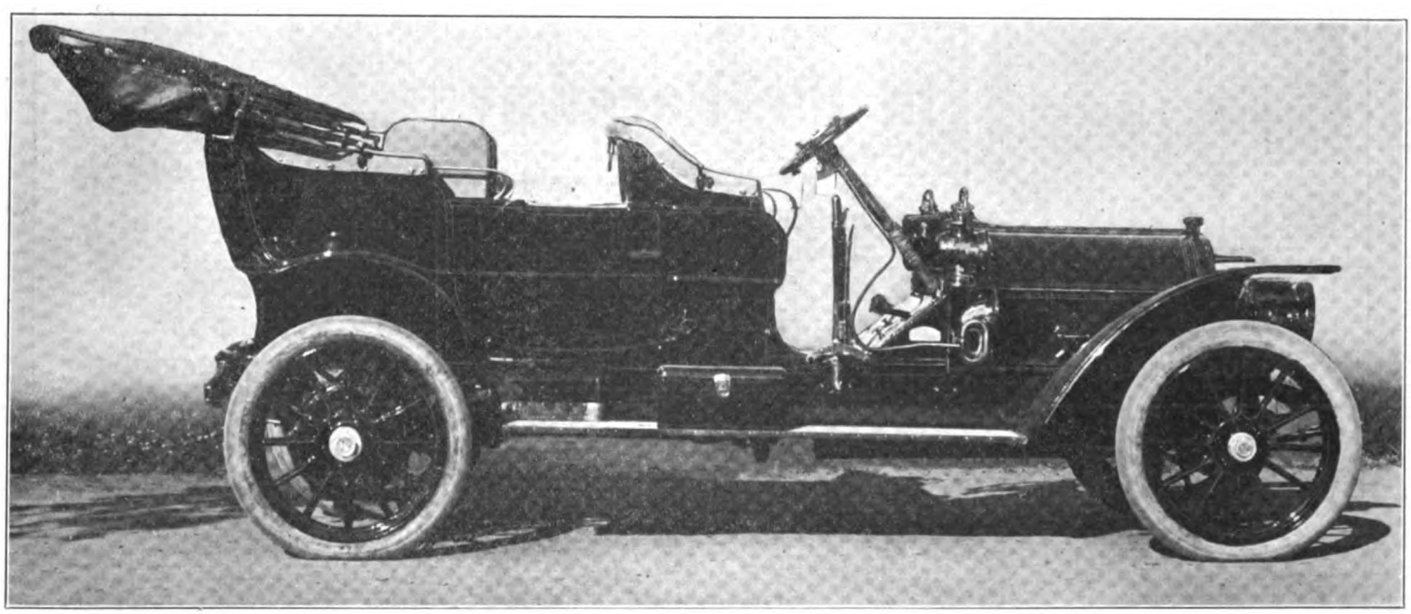
CLINCHER RIM MEASUREMENTS.

Size.	Rim Section.	Inside Diameter of Rims for Wood Wheels.	Diameter of Rims at Tire Seat for Both Wood and Wire Wheels.
26x2½ in.	B.	20.834 in.	21 in.
*28x2¼ " interchangeable	"	21.834 "	*22 " interchangeable
*30x2¼ " "	"	23.834 "	*24 " "
32x2¼ "	"	25.834 "	27 "
34x2¼ "	"	27.834 "	29 "
36x2¼ "	"	29.834 "	31 "
26x3 "	"	19.834 "	20 "
*28x3 " interchangeable	"	21.834 "	*22 " interchangeable
*30x3 " "	"	23.834 "	*24 " "
32x3 "	"	25.834 "	26 "
34x3 "	"	27.834 "	28 "
36x3 "	"	29.834 "	30 "
26x2½ "	C.	20¾ in.	21 "
*28x2¼ " interchangeable	"	21¾ "	*22 " interchangeable
*30x2¼ " "	"	23¾ "	*24 " "
32x2¼ "	"	25¾ "	27 "
34x2¼ "	"	27¾ "	29 "
36x2¼ "	"	29¾ "	31 "
26x3 "	"	19¾ "	20 "
*28x3 " interchangeable	"	21¾ "	*22 " interchangeable
*30x3 " "	"	23¾ "	*24 " "
32x3 "	"	25¾ "	26 "
34x3 "	"	27¾ "	28 "
36x3 "	"	29¾ "	30 "
28x3½ "	D.	20 11-16 in.	21 "
30x3½ "	"	22 11-16 "	23 "
32x3½ "	"	24 11-16 "	25 "
34x3½ "	"	26 11-16 "	27 "
36x3½ "	"	28 11-16 "	29 "
28x4 "	E.	19 11-16 "	20 "
30x4 "	"	21 11-16 "	22 "
32x4 "	"	23 11-16 "	24 "
34x4 "	"	25 11-16 "	26 "
36x4 "	"	27 11-16 "	28 "
28x4½ "	F.	18 21-32 "	19 "
30x4½ "	"	20 21-32 "	21 "
32x4½ "	"	22 21-32 "	23 "
34x4½ "	"	24 21-32 "	25 "
36x4½ "	"	26 21-32 "	27 "
28x120m-m & 5 in.	"	17 21-32 "	18 "
30x120 " & 5 "	"	19 21-32 "	20 "
32x120 " & 5 "	"	21 21-32 "	22 "
34x120 " & 5 "	"	23 21-32 "	24 "
36x120 " & 5 "	"	25 21-32 "	26 "
40x120 " & 5 "	"	29 21-32 "	30 "
		Circumference at Tire Seat.	
750m-mx 85m-m	D.	69 5-16 in.	
800 " x 85 "	"	76 1-32 "	
760 " x 90 "	"	70 3-16 "	
810 " x 90 "	"	76 in.	
870 " x 90 "	"	83¾ in.	
910 " x 90 "	"	88⅛ "	
1010 " x 90 "	"	101⅝ "	
820 " x120 "	F.	70 "	
850 " x120 "	"	74⅛ "	
920 " x120 "	"	82¾ "	
1020 " x120 "	"	94 15-16 in.	

* Note that the 28x2½ and 30x2¼ tires are made interchangeable with the 28x3 and 30x3 tires. m Millimetres.

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SPRINGFIELD METAL BODY CO.



LEADING BUILDERS OF FINE

Aluminum and Steel Bodies

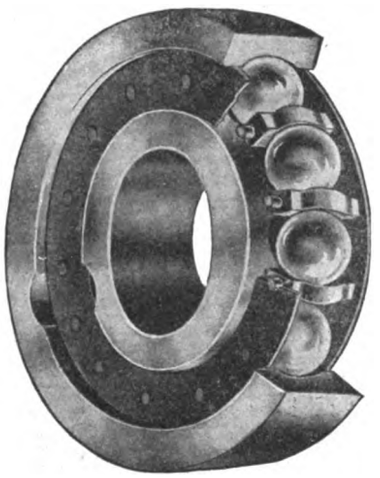
TOURING : RUNABOUT
LIMOUSINE : LANDAULETTE

Springfield, Massachusetts

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SCHAFER BEARINGS

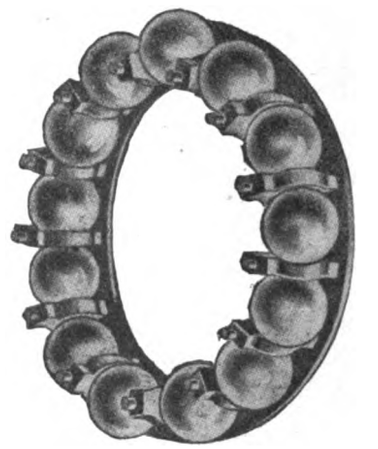
MADE IN GERMANY



THRUST BEARINGS

Originators of 92% of Balls in the Raceway

Carrying capacity greater than any other ball bearings extant. Made of the finest steel and fully guaranteed.



MAGNETO BEARINGS

BARTHEL & DALY, Sole Importers

42 Broadway, New York City

The Quality Car

PREMIER MOTOR MFG. CO.

MAKERS OF PREMIER MOTOR CARS

PLEASE ADDRESS ALL COMMUNICATIONS TO THE COMPANY

Indianapolis, Ind. 10-31-08.

Barthel & Daly,
42 Broadway,
New York, N.Y.

Gentlemen:-

Early last Spring we received from you a partial set consisting of two #315, and #306 and one #308 Schafer Annulax bearings.

These bearings were used on the writer's air-cylinder car, #315 bearings being used carrying the load on the rear axle, and one #306 and one #308 being used in one of the front wheels.

They were run about 1200 miles in the car above mentioned, and were afterward put in the Premier Company's Mover entry which received a perfect score in the Glidden Tour, this car being driven by the writer. This Tour included the drive back to Indianapolis, giving us 2400 miles additional.

On returning from the Glidden, these bearings were again put into the writer's personal car for further test.

They were recently taken out and examined after having had a total mileage of about 7000 miles and were found in thoroughly good condition.

We have looked well into the question of material and workmanship of the Schafer bearings, and this in addition to the larger number of balls than are used in the average annular bearing probably has a great deal to do with the very excellent showing which these bearings have made.

Yours very truly,
PREMIER MOTOR MFG. CO.
GAW-JG SUPT.

Manufacturers to whom we cheerfully refer:

LANCIA	Italy	RENAULT	France
F. R. A. M.	Italy	DARRACQ	France
GREGOIRE	France	CLEMENT BAYARD	France
ZEDEL	France	ITALA	Italy
CHARRON	France	PELGRIMS	France
HUMBER	England	LUCIA	Switzerland
MERCEDES	Germany	S. P. A.	Italy
DAIMLER	England	FAFNER	Germany
HANSA	Germany	S. S. W.	Germany
MINERVA	Belgium	POLYPHON	Germany
METALLURGIQUE.	Belgium	MENDELSSOHN	France

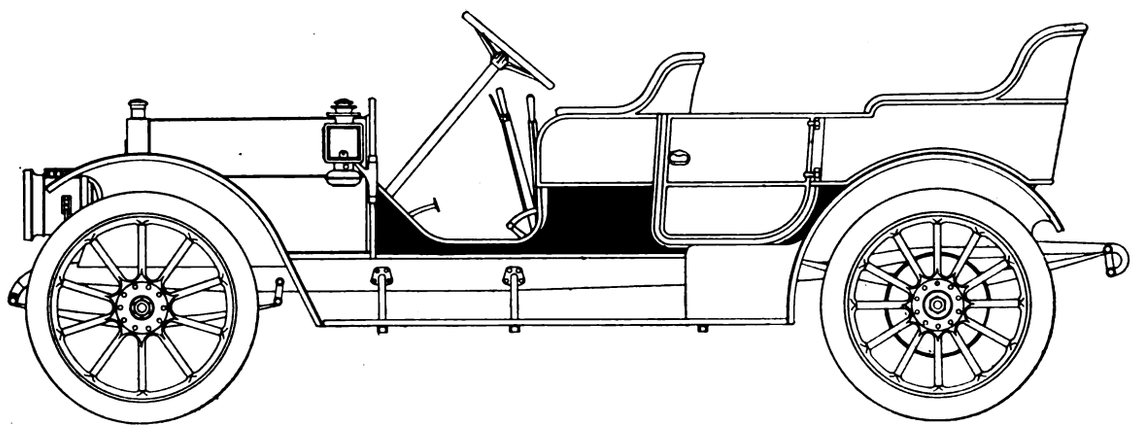
and

THE SIEMENS & HALSKE ELEC. MFG. CO., of Berlin, Germany,
(The Largest Electrical Manufacturers in the World).

Write for Catalogue and Price List

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Stearns



GOOD design; a careful selection of scientifically tested materials; the exercise of greatest care in the manufacture of component parts; painstaking skill in their assembly, and a system of final inspection so comprehensive and complete that anything under 100 per cent. perfect cannot get through—that's Stearns production.

¶ Our new 15-30 is for those who would have a strictly high quality car at price and of power somewhat under the 30-60 horsepower model.

¶ Catalogued at 15-30 it develops close to 40 horsepower and, while of comparative light weight, is so staunch and sturdy that it will "stand up," as a good car should, even under unusual conditions of service.

¶ And, like our 30-60 (which is accepted as the standard of excellence in America), this new 15-30 model represents extreme high quality in every line and fiber.

¶ It is shaft drive, and designed to accommodate town and touring bodies.

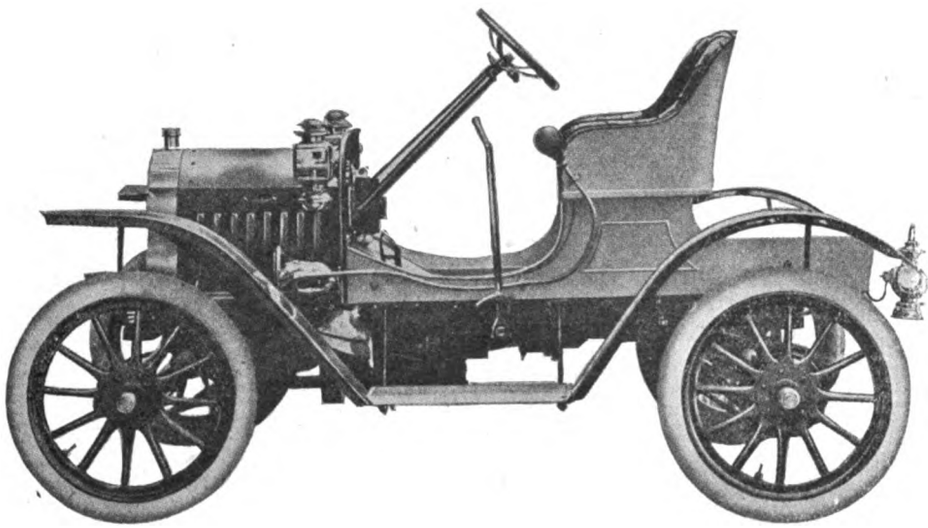
¶ In our 30-60 horsepower model purchasers are given side chain or shaft drive option.

¶ Demonstration by appointment.

THE F. B. STEARNS CO., Cleveland, Ohio

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Brush Runabout



Model B
$500 ▭ $550

Delivery Wagon
$600

SEE US AT THE CHICAGO SHOW, FEBRUARY 6th—13th

In a certain Michigan town of 1200 inhabitants a live business man took the Brush Runabout agency last August. So far we have shipped him 12 cars and have (at this writing) his order for another carload of 6.

A Western dealer contracted 100 cars for his town for the balance of this Fall and all of next season. Up to December 15 we had shipped him four carloads of 10 each, or 40 cars, with more on order.

Another dealer has taken 60 cars since September.

A small car is a much harder engineering and manufacturing problem than a big car. We have been through the mill. Since the start there have been four years of effort put on the Brush Runabout—one year of experiments, one of designing and testing, one of manufacturing organization and public tryout and one of general use.

It is no dream or hope. We need no dogs to try it on.

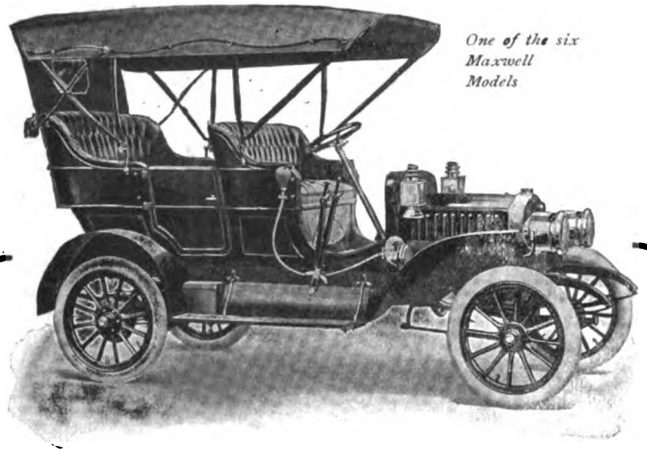
The car is right because people who drive it find it so. The price is not going up nor the quality down, because we KNOW our costs, basing that knowledge on actual past experience in quantity production of THIS CAR. We CAN AFFORD to make every piece in it good. The car sells. Note we don't say "will sell." IT IS SELLING. The profit STICKS TO THE DEALER because he doesn't have to spend it all in free repairs.

Do YOU want territory on it? Some of the most prominent dealers are selling it. It is the BUSINESS MAN we wish to tie up to.

BRUSH RUNABOUT CO., Detroit, Mich.

Members A. M. C. M. A.

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One of the six Maxwell Models

THE FAMILY NECESSITY CAR.
Model HD. 2-cyl., 20 H.P., five-passenger touring car. Complete, with magneto, top, gas lamps and generator. Price $1,450.

It has been Our Ideal to make the "Maxwell"

the best moderate-priced car. To this we have been faithful by refusing to compete in price with every experiment.

Our aim has been to build the best, then set the cost—not to skimp and cut for the mere sake of price sensationalism. Quality has been our first consideration—to make the Maxwell the "Aristocrat of Moderate-Priced Cars"—our ambition.

12,000 satisfied Maxwell owners is the proof of our success—each enthusiastic and ready to "stand sponsor" for the Maxwell claims.

WHAT ARE THESE MAXWELL CLAIMS?

that though moderate in price, Maxwell cars are made under the same rigid inspection, of as high-grade material and workmanship, and are as durable as should be the best high-priced cars.

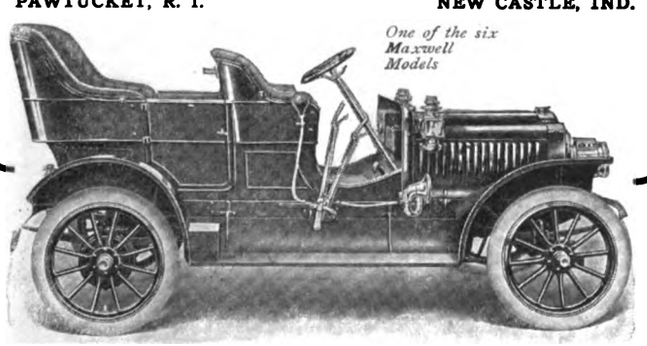
We have never manufactured cheap cars—on the other hand, we have never gone to the other extreme to make the enjoyment of automobiling a luxury of prohibited expense.

As a result, Maxwell cars will endure beyond the attempts of the makers of cheap automobiles to "paper-claim" themselves into our class.

Send for our 1909 catalog now.

Maxwell-Briscoe Motor Co. P. O. Box 106 Tarrytown, N. Y.

Main Office and Factory,
PAWTUCKET, R. I. NEW CASTLE, IND.



One of the six Maxwell Models

THE STANDARD 4-CYLINDER CAR OF MODERATE PRICE.
Model DA, 4-cylinder, 30 H.P. Equipped with magneto, gas lamps and generator. Price, $1,750.

Don't Guess Which Tire Is Best—Here Is Proof

In New York City there are 1,000 Taxicabs.

On the tires, more than on any other one thing, depends the profit of the Taxicab business.

You may be sure that the owners of the 1,000 Taxicabs did not GUESS.

They TRIED all the tires that were offered, and checked them up with the TAXIMETER—which told them the mileage unerringly, indisputably.

There was no personal preference. No friendship. No prejudice. It was a cold-blooded BUSINESS test.

And the result: 800 out of the 1,000 Taxicabs in New York, operated by several competing owners, have contracted for Goodyear Tires to be used EXCLUSIVELY.

GOODYEAR

To understand why the Goodyear Tire stood head and shoulders above its competitors in this Taxicab test, you must understand, first, the difference between a *moulded* tire and a *wrapped tread* tire.

The moulded tire is built up, layer by layer, on an iron core. Over it is clamped an iron mould. When the heat of the curing process is applied, that rubber expands—and in expanding, forces a perfect union between the various layers of rubber and of fabric.

With the moulded tire, so far so good.

But in building up that tire on its iron core, a skilled workman lays fabric on fabric, rubber on rubber.

Yet, skilled as he may be, he cannot wholly avoid wrinkles, irregularities, unevenness, which, under the pressure of curing, multiply themselves into *hidden* weaknesses and defects.

Some tires, instead of being cured on an iron core, are cured on an *air bag*, which is really an extra strong inner tube.

When the air bag has been inserted in the built-up tire, strong tape is wound around it, and then it is cured in live steam.

The advantage of the wrapped tread process is that the air bag, full of compressed air, smoothes out these wrinkles and irregularities and prevents those hidden weaknesses and defects.

The advantage of the wrapped tread process is, for this reason, immeasurable.

But the tire made by this process does not get the *terrific squeeze* that the moulded tire gets when the heat expands it between core and mould—the squeeze that forces the rubber into the fabric, making a perfect union between fabric and rubber.

In losing that squeeze, it loses durability, strength, unity—which more than offsets the fact that the wrapped tread tire can have no hidden wrinkles or unevenness.

Obviously, the tire you ought to have is the one which is built up on an iron core, *squeezed* the same as a moulded tire—and *finished* on an air bag to smooth out the irregularities.

There is just one tire made in this way—*only one*. It is the Goodyear Quick Detachable.

This one point of superiority is reason enough why the Goodyear Quick Detachable should have won the Taxicab test.

But there are other reasons—other superiorities.

The Goodyear Quick Detachable is, for example, an *oversize* tire.

The Goodyear tire is made larger than the specifications call for. It is simply 15% larger than any other tire marked the same size.

Among the countless other Goodyear superiorities is the patent rubber-rivet breaker-strip, which makes it impossible for the tread to split or peel from the carcass of the tire.

Goodyear superiorities extend from the raw materials to the workmanship—from scores of exclusive Goodyear processes to the Goodyear piano-wire tape which would hold the tire on the rim, even if both the detachable flanges were off.

When you think of tires, think of that Taxicab test.

Those 800 Taxicabs in New York are doing 60,000,000 tire miles a year!

More than 1,000,000 tire miles a week!

And what is true of the Taxicabs of New York is equally true of practically every large Eastern city where Taxicabs are used.

Eight out of every ten of them are using Goodyear tires exclusively.

Think of that, you who have bought tires because you have heard of their use on some tour or some race!

Think of that, you who blindly groped at the tire problem—you who have bought tires wholly by hearsay!

Don't you see, now, that tire-buying has been reduced to a *business* basis?

Isn't the tire that the Taxicab took—isn't *that* the tire for you?

A hundred times more about tires than can be explained here, can be found in our book, "How to Select an Auto Tire."

Send for it now. It is free.

The Goodyear Tire & Rubber Co., Arthur St., Akron, O.

THE GOODYEAR TIRE & RUBBER CO., Arthur St., Akron, O.

I want to know more about tires. Send on your free book, "How to Select an Auto Tire."

Name _____

Address _____

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Long Life is what every motorist wants in his car

If it is a

CORBIN

imported ball bearings, used wherever practical, assure him of this result. Ask owners of Corbin Cars how they stand up in every day use or write for our testimonial booklet.

THE CORBIN MOTOR VEHICLE CORPORATION, New Britain, Conn.

Members Association Licensed Automobile Manufacturers.

Will exhibit at Madison Square Garden Show, January 16-23, 1909.

F&S

Annular Ball Bearings

THE NEW IDEA in ball bearings is to distribute the load among as many balls as possible without reducing the size of the balls—in other words, to fill the races with balls.

Heretofore it has been impossible to realize this ideal in practice because no way was known of introducing more than half a raceful of balls without impairing the continuity of the races. Even were the races filled, commercial limitations of accuracy made it uncertain that all the balls would be loaded alike.

The first problem—that of filling the races—has been solved in the new type

F & S ANNULAR BALL BEARINGS



with die-cast separator. The balls are sprung in through shallow diagonal side slots: once in, they never again touch the slots.

The second problem—that of accuracy—has been solved by F. & S. methods of finishing and sizing the balls. The error in an F. & S. ball bearing is guaranteed not to exceed 1-10000 inch.

J. S. BRETZ COMPANY

Sole Importers, Times Bldg New York

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THE GARDEN SHOW

joins with the Palace Show in reflecting the fast-growing prestige of

"Firestone"

TIRES

Their advance into third place in equipment at both auto shows again emphasizes the oft-noted preference away from the ordinary popular-priced tires in favor of the best possible tire service.

MORE FIRESTONE NON-SKIDS were shown on American-made cars than any other two non-skids combined.

In the commercial vehicle section Firestone Side-Wire tires, as usual, outnumbered nearest competition more than six to one.

FIRESTONE TIRE & RUBBER COMPANY, Akron, Ohio

IT WILL PAY YOU TO INVESTIGATE

THE **1909** *National*

THE LINE IS BETTER AND MORE OOMPLETE THAN EVER

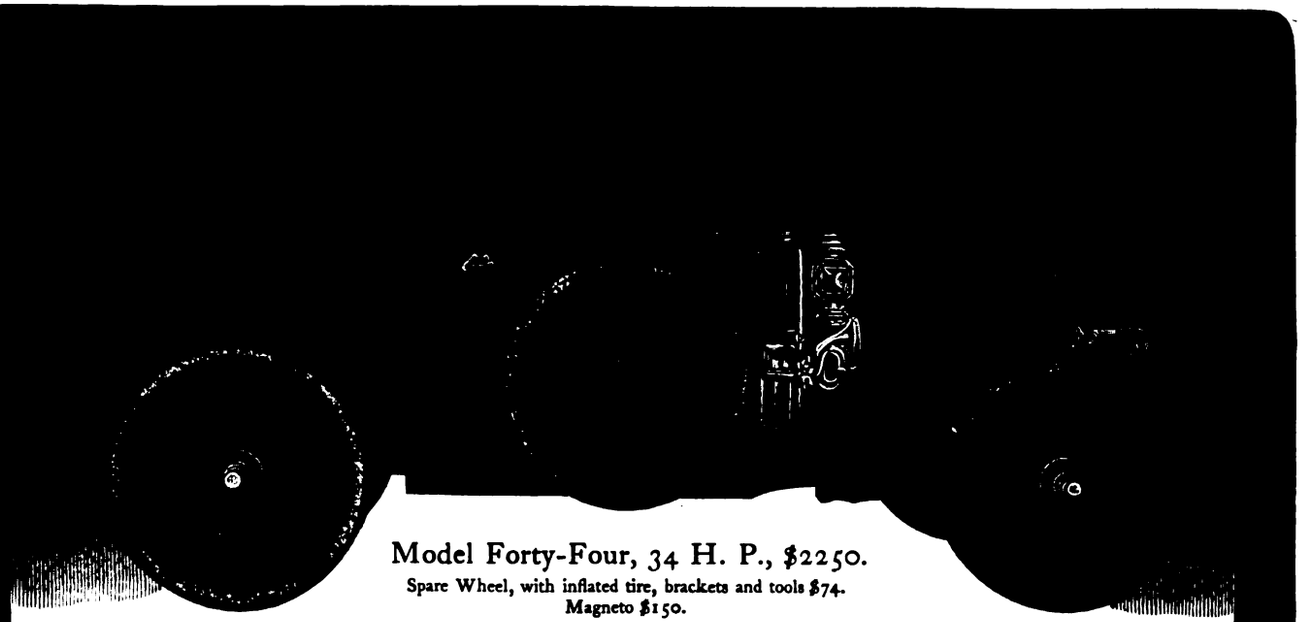
Model 9-35, 4-cyl., 4¾ x 4¾, 5-passenger Touring Car	**$2,750**
Model 9-40, 4-cyl., 5 x 5, 5-passenger Touring Car	**$3,700**
Model 9-50, 6-cyl., 4½ x 4¾, 7-passenger Touring Car	**$4,200**
Model 9-60, 6-cyl., 5 x 5, 7-passenger Touring Car	**$5,000**

Each National has the well-known National Ball-bearing Motor with new crank case oiler, two ignition systems (Bosch Magneto and Storage Battery) and all other tried and proven features of high grade modern motor car construction. Any of the above models can be furnished with Baby Tonneau body or as a Roadster.

Write for distributors terms and full particulars.

NATIONAL MOTOR VEHICLE CO., 1007 East Twenty-Second St. INDIANAPOLIS, IND.

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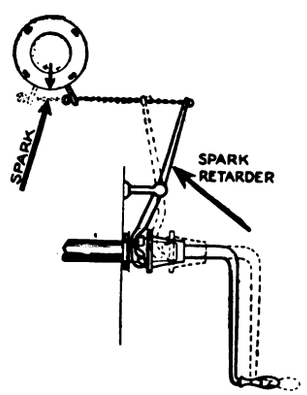


Model Forty-Four, 34 H. P., $2250.
Spare Wheel, with inflated tire, brackets and tools $74.
Magneto $150.

THE SAFETY SPARK RETARDER

There is absolutely no danger in cranking a Rambler when properly adjusted. The starting crank then cannot engage until the spark has been automatically retarded.

Every one who has had the unpleasant experience of a premature spark in starting an automobile will appreciate the Rambler safety starting device. This prevents an explosion ahead of center, even though the operator forgets to retard the spark.



You cannot engage the lug on the shaft with a tooth on the starting crank until the spark-retarder lever has moved from the position of the dotted line to the position shown, thus retarding the spark.

Rambler

The Car with the Offset Crank Shaft

Seven passenger model, forty-five horse power with offset crank shaft, $2500. Other models, $1150 to $2500. Write for catalog describing in detail Rambler offset crank shaft, Spare Wheel, straight line drive and other exclusive features of the new Rambler models.

THE CAR OF STEADY SERVICE

Thomas B. Jeffery & Company, Main Office and Factory, Kenosha, Wis.

Branches and Distributing Agencies:

Chicago, Milwaukee, Boston, New York, San Francisco. Representatives in all leading cities.

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THE MOTOR WORLD

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APPERSON BUYS POPE-TOLEDO

Virginia Capitalist Acquires the Plant and Business—May Transplant the Enterprise to the South.

After an apparent breaking off of negotiations, Richard D. Apperson, of Lynchburg, Va., together with a group of associates, has purchased the Pope Motor Car plant at Toledo, O., and will head a company to be known as the Apperson-Toledo Motor Co. The business, patents, trade names and good will are included in the purchase, which was made from the Toledo Motor Co., that recently took over the property from the Pope Motor Car Co.'s receivers. The new company, of which Apperson will be the president, proposes to manufacture "licensed" cars of the same type as the latest Pope-Toledo models, but they will be marketed as "The Toledo", with very full equipment a feature.

Despite his name, Apperson is not related to anyone at present engaged in the automobile industry, and is not to be confused with the well known automobile manufacturers of Kokomo, Ind. His chief business interests are in electric, gas, water-power and traction companies in the South and elsewhere, in which he is both a heavy stockholder and a director.

It is indicated that not only Apperson's own city of Lynchburg, but Richmond, Baltimore and other localities have made generous offers of stock subscriptions, free plants and power for the enterprise. He intimates, however, that Toledo is to be offered stock in the new company, and that if the response is as great as is hoped for, the cars will be made at the Toledo plant, with that city as the concern's headquarters.

Jewel Reorganizes and Expands.

With an increase in the capitalization to $250,000 the Forest City Motor Car Co., of Massillon, O., has been reorganized as the Jewel Motor Car Co., to continue the manufacture of Jewel cars. The change also involves the absorption of the Keaton Taxicab Co., of Detroit, Mich., whose product, the Keaton taximeter cab, the Jewel company will hereafter make. F. M. Keaton, of the Detroit concern, will act as a designer for the new company, of which H. A. Croxton will be president and treasurer, while O. P. Bernhart will retain his position as secretary and general manager. The Jewel line for the coming season will include, beside the cab, a 7 passenger touring car, a limousine, a roadster and a baby tonneau, together with a limited production of the early type Jewel 2-cycle cars.

Through with the Old Pierce Company.

Great surprise and considerable speculation were created on Wednesday of this week by the mysterious announcement that Colonel Charles Clifton and other of its officers were "through with the George N. Pierce Co." The announcement proved to be true, but only in the sense that the famous Buffalo concern has changed its name, and will hereafter be known as the Pierce Arrow Motor Car Co. Accompanying the change in name, a considerable increase in the capitalization has been made, commensurate with the enormous business which has grown to be the company's portion. No change, however, takes place in the list of officers or in the working organization.

Plymouth Concern in Hands of Fate.

H. H. Fate, of Plymouth, O., has bought at auction from the trustee in bankruptcy the property of the defunct Commercial Motor Truck Co. He intends to reorganize the business and to continue the manufacture of commercial vehicles. Creditors of the bankrupt concern are given the hope of from 25 to 30 per cent. on their claims.

Palmer Succeeds Birdsall.

E. T. Birdsall having resigned as designer for the Selden Motor Vehicle Co., of Rochester, N. Y., his successor has been appointed in V. M. Palmer. The latter was at one time connected with the Hagerstown plant of the Pope Mfg. Co.

BANQUET AFTER M. A. M. ELECTION

Opposition Ticket and Warm Discussion Add Interest to Meeting—Notable Guests at Dinner.

Promise of an animated session of the Motor and Accessory Manufacturers, Inc., at their annual meeting yesterday in Delmonico's, New York, was only partly materialized. It had been stated that there would be opposition to the re-election of one or more of the four directors whose terms expired and that one of the tire manufacturers who was a party to the now famous Cleveland conference proposed to lay bare the true inwardness of matters connected therewith.

When nominations were called for, opposition candidates were presented, but the administration steam roller was in good working condition and flattened the "insurgents" in short order. The four directors whose terms expired were re-elected by substantial majorities. They are E. S. Fretz, H. T. Dunn, L. M. Wainwright and F. E. Castle. With the hold-over directors, they will select the officers of the organization.

Horace De Lisser, president of the Ajax-Grieb Rubber Co., created the most warmth that was generated at the meeting. It was he who brought up the results of the Cleveland conference. He charged that the chairman of that meeting had in effect generally acted unfairly, had misrepresented the results of the conference and placed in a false light those who opposed his views, and without authority had made use of the minutes of the Cleveland meeting in a manner designed to promote the interests of his own company and to injure those who did not vote with him. He therefore proposed that the M. A. M. pass a vote of reprimand on the chairman in question. The latter was present and made a vigorous response, in the course of which he denounced what he termed the "scurrilous attack" on him. He said it justified him in demanding the

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resignation of the Ajax-Grieb company, but that he would not make such a demand but would request a vote of censure.

After all had been said, the lever of the steam roller was pulled and the whole matter was disposed of by a ruling of the president that it was out of order.

The reading of the reports of the officers occupied most of the time. The most interesting of these was the report of the treasurer. It showed a balance on hand of $27,000.

The banquet of the Motor and Accessory Manufacturers followed the business meeting and also occurred last evening at Delmonico's. It was largely attended. Those at the guests' table included N. J. Bachelder, Master of the National Grange; Charles Clifton, president A. L. A. M.; Benj. Briscoe, president A. M. C. M. A.; W. H. Hotchkiss, president A. A. A.; H. S. White, president M. A. M.; H. Raymond, first vice-president M. A. M., and A. G. Batchelder, representing the trade press, all of whom spoke. Job E. Hedges acted as toastmaster, and had all the fun that usually goes with that office.

N. A. A. M. Holds Annual Election.

At the annual meeting of the National Association of Automobile Manufacturers, held in New York on Wednesday, the 20th inst., the election of officers was the chief feature of the program. The result of the election was as follows: President, S. D. Waldon, Packard; first vice-president, William E. Metzger, E-M-F.; second vice-president, L. H. Kittridge, Peerless; third vice-president, C. C. Hildebrand, Stevens-Duryea; secretary, Benjamin Briscoe, Maxwell-Briscoe; and treasurer, William R. Innis, Studebaker. The retiring president, Thomas Henderson, of the Winton Motor Carriage Co., was again chosen for a place on the executive committee. The effect of the election was to move all the officers, except Henderson, up one peg.

The board of directors is the same as before, by the re-election of the retiring members, and consists of S. T. Davis, Jr., Locomobile; Charles Clifton, Pierce-Arrow; Thomas Henderson, Winton; William E. Metzger, E-M-F.; S. D. Waldon, Packard; H. O. Smith, Premier; Benjamin Briscoe, Maxwell-Briscoe; L. H. Kittridge, Peerless; William Mitchell Lewis, Mitchell; C. G. Stoddard, Stoddard-Dayton; A. L. Pope, Pope; R. D. Chapin, Chalmers-Detroit; Winsor T. White, White; William R. Innis, Studebaker; and C. C. Hildebrand, Stevens-Duryea. The last five were those whose terms had expired. A balance of about $40.000 was reported in the treasury.

Knight to Serve One Year.

Pleading guilty to receiving stolen automobile tires, Charles H. Knight, the well-to-do president of the Chicago Rubber Tire Co., was sentenced in Chicago, last week, to one year's imprisonment. Two of his youthful thieves were let of lightly.

The Week's Incorporations.

Detroit, Mich.—Great-Iswell Auto Co., under Michigan laws, with $10,500 capital.

Elyria, O.—Elyria Garage Co., The, under Ohio laws, with $15,000 capital. Corporators—Willard Beal, et al.

Camden, N. J.—Woodland Garage, under New Jersey laws, with $50,000 capital. Corporators—Charles C. Henderson, Jr., Howard H. Lukens, Garfield Pancoast.

Kansas City, Mo.—Taxicab and Automobile Co. of Kansas City, under Missouri laws, with $10,000 capital. Corporators—Charles H. Brown, H. M. Hoorheimer, E. F. Weil.

Boston, Mass.—Jackson Automobile Co., of Boston, under Massachusetts laws, with $5,000 capital; general automobile business. Corporators—H. S. Merry, president and treasurer, et al.

New York City, N. Y.—Siemen's Magneto Co., under New York laws, with $50,000 capital; to manufacture electrical machinery, etc. Corporators—F. Nebel, J. Butner, S. S. Meyers, New York City, N. Y.

Jersey City, N. J.—Maxwell-Briscoe Syracuse Co., under New Jersey laws, with $2,000 capital; to manufacture automobiles and other vehicles. Corporators—S. A. Anderson, John R. Turner, H. O. Coughlan.

Newark, N. J.—Adolf Karl Co., The, under New Jersey laws, with $50,000 capital; to manufacture a patented tire powder named "Permanit." Corporators—A. Karl, C. J. Schultz, Newark, N. J.; F. Ardrey, South Orange, N. J.

Hoboken, N. J.—Munsing Motor Car Co., under New Jersey laws, with $1,000,000 capital; to manufacture automobiles, motor and other cars, engines, trucks, etc. Corporators—W. H. Buresmith, J. P. Franklin, C. H. Bellows, Jr., New York City, N. Y.

New York City, N. Y.—Benz Auto Import Co., under New York laws, with $30,000 capital; importing and dealing in automobiles and accessories, etc. Corporators—D. Weingarten, O. Weingarten, New York City, N. Y.; L. Weingarter, Newark, N. J.

Perth Amboy, N. J.—Motor Appliance Co. of America, under New Jersey laws, with $25,000 capital; to manufacture machinery, mechanical devices and engineering appliances, etc. Corporators—J. P. Hall, New York City, N. Y.; A. S. De Veau, Brooklyn, N. Y.; C. C. Sibley, Perth Amboy, N. J.

In the Retail World.

Sam and Walter Ziegler have embarked in the garage business at Junction City, Kan. With the Muenzenmayer Hardware Company they will jointly handle the agency of the Cadillac line.

Having remodelled the building at 917 Hennepin avenue, Minneapolis, Minn., the Mich Automobile Company has removed its headquarters to that place. The move was made on the first of the year.

One of the 1909 improvements in the city of Macon, Ga., was the converting of the old telegraph office on Second street into a garage. G. W. Ellis recently moved in and when the cement floor is completed he will be ready for business.

The Kearney Automobile Company, of Kearney, Neb., has been sold to Lon Franks and Frank Mott of that city. The latter is a local automobile man and Franks was formerly manager of the Kearney gas works. Dan Atchison, the old proprietor of the concern, is retiring from active business.

With the reorganization of the Banker Bros.' Company in Pittsburg, R. P. McCurdy, former sales manager of the company, has been elected vice-president and general manager, succeeding Arthur Banker who retired a short time ago. The other officers of the company are: President, C. M. Miller, and secretary and treasurer, I. G. Davis.

Boston's Big Automobile Fire.

What safely may be described as the biggest fire which at any time has visited an automobile center occurred in Boston just before dawn on Sunday, 17th inst. Within half an hour after the first flames shot up from the rear of the big garage building near Park square, about 400 automobiles, valued between $700,000 and $900,000 were reduced to shapeless masses of junk. The heaviest losses so far as can be ascertained are as follows: Park Square Auto Station, 150 cars, valued at $350,000; Concord Motor Co., 54 cars, valued at $150,000; Thomas B. Jeffery & Co., 44 cars, valued at $125,000; Boston Auto Exchange, 30 cars, valued at $100,000; Mills Transportation Co., 8 cars, valued at $25,000. A number of sightseeing cars and commercial vehicles, owned by various companies and individuals were among the vehicles destroyed, as well as many cars owned by private individuals.

The building first attacked by the fire and in which about a dozen firms were located, was a brick structure, about 600 feet long, 70 feet wide, and one story high, with a slanting roof. There was an entrance to it from Columbus avenue near the old Providence railroad station, and it ran parallel with the old trainshed to Berkeley street.

Rival Shows in Rochester.

Rochester, N. Y., is to have two rival automobile shows. The Automobile and Motor Trades Association of Rochester has been formed to hold an exhibition in Convention hall one week earlier that that given by the Automobile Dealers Association of Rochester, the older organization. Sidney B. Robey and John A. Breyfogle are treasurer and secretacy, respectively.

Comes Across from Coventry.

A. S. Hill, manager of the Coventry Chain Co., Coventry, England, has arrived for a brief American stay. He was a visitor at the Garden show early in the week.

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COMMERCIAL ACETYLENE WINS SUIT

Court Decides Avery Portable Lighting Co.'s System Infringes—Claude and Hess Patent Held Valid.

Suit against the Avery Portable Lighting Co., of Milwaukee, Wis., for alleged infringement of its patents, which was brought by the Commercial Acetylene Co., of New York, in the United States Circuit Court for the Eastern District of Wisconsin, was decided in favor of the New York concern in a verdict filed by the court at Milwaukee on the 13th inst. The action was based on an alleged infringement of claims 1, 2 and 6 of what is known as the Claude and Hess Patent No. 664,383, which was issued to Claude and Hess, December 25, 1900.

The patent in question covers the storage of compressed acetylene dissolved in acetone in a tank provided with a suitable valve, and applies to the system in constant use by the owners of the patent for lighting automobile headlights and applied to the Prest-O-Lite tanks which are made and sold under license from the Commercial Acetylene Co. By the court's decision it was held that the three claims in issue were valid and that they had been infringed.

Parker and Hartford Rubber Compromise.

Lewis D. Parker, former president of the Hartford Rubber Works Co., of Hartford, Conn., effected a compromise with that company, last Friday, in his $150,000 damage suit against it. Parker had a five years' contract as manager, a place which carried with it the office of president. After his retirement about four years ago, he sued on the ground of breach of contract, as the contract at that time still had three and a half years to run. The exact terms of the settlement have not been given out, but it is understood that Parker has received about half the amount he would have received in salary for the unexpired period of the contract.

Hart Fails to Acquire the Corbin.

Negotiations for the sale of the Corbin Motor Vehicle Corporation, New Britain, Conn., to its former president, Howard S. Hart, have been declared off, the special committee of the American Hardware Corporation having decided that the latter company had best retain its ownership of the Corbin automobile business. The committee, consisting of Charles Glover, C. H. Parsons and C. H. Baldwin, is of the opinion that under the direction of President Glover the Corbin company will meet with great success, and an aggressive manufacturing and selling policy will be maintained.

Reeves and Chalfant on A. A. A. Board.

Two more tradesmen were placed on the board of directors of the American Automobile Association at the meeting on Wednesday, the 20th inst., Al Reeves, general manager of the American Motor Car Manufacturers' Association, and Edward P. Chalfant, general manager of the Association of Licensed Automobile Manufacturers, being chosen. This makes seven trade members on the board and gives the manufacturing side of the industry large representation.

Remy, Closed by Fire, Quickly Resumes.

Fire completely destroyed the magnet making department and the power plant of the Remy Electric Co., Anderson, Ind., on the 13th inst., the whole factory having to shut down as a consequence. The necessity for prompt resumption of work, however, lead to very quick rebuilding, and by the second day after the conflagration new buildings were complete and under roof. The entire establishment is again running as usual and the delivery of its product has not been delayed.

National in New Hands in New York.

To distribute National cars in New York City and vicinity, the National Motor Vehicle Co., of Indianapolis, Ind., has appointed the Poertner Motor Car Co., 1876 Broadway, as its Metropolitan representative. The National line has for some time past been handled by the Homan & Schulz Co. The new management provides for the carrying of all National models in stock, as well as a complete stock of National parts.

White Again Declares Allegiance to Steam.

Rumors that the White Company, of Cleveland, O., is to abandon steam for gasolene propulsion in its product reached such strength during the early part of the week, that the company again found it necessary to make its annual showtime denial. Windsor T. White, the president, therefore makes the unequivocal statement that the White output will be more aggressively "steam" than ever before.

Wetzel Convalescent, Visits the Show.

Thomas J. Wetzel, who has for some time been convalescing from typhoid fever, was a visitor at the Garden show during the week. His many friends in the trade were gratified to find him almost completely recovered from his illness.

Pope Entertains Pope-Hartford Agents.

A dinner to Pope-Hartford agents visiting the Garden show was given by President A. L. Pope, of the Pope Mfg. Co., Hartford, Conn., on Monday, the 18th inst. The affair was held at the Engineers' club, New York.

Drake Joins the Continental Staff.

R. R. Drake, formerly of the Diamond Rubber Co., has joined the forces of the Continental Caoutchouc Co. He will assume charge of the adjustments and will have his headquarters in New York City.

HOLDS APPERSON CLAIM IN DOUBT

Patent on Dual Ignition System Questioned by a Manufacturer—Patentee Says the Courts will Decide.

Following the issuance to Elmer Apperson of his recent patent on the use of dual ignition in automobile engines, manufacturers of motor cars employing two spark plugs for each cylinder have been advised as to the patent situation in this respect and have been invited to enter suitable arrangements for license; but the invitation has in some quarters precipitated considerable heat and an open contention that the patent is not valid, because of alleged anticipation of its claims.

Among the first of such skirmishes, J. B. Bartholomew, president of the Bartholomew Co., Peoria, Ill., has replied to overtures for a license arrangement by denying the validity of the Apperson patent and taking the position that the Canda patent of earlier date, which Apperson purchased preliminary to taking out his own, does not cover the use of separate battery and magneto systems with independent plugs. Bartholomew declares that while the Apperson patent was filed in July, 1906, cars were made at the Bartholomew factory three years before, containing two spark plugs for each cylinder and other elements mentioned in the patent. As to the Canda patent, filed August 26, 1897 and issued January 17, 1899, he maintains that its claims do not relate to the modern system of two complete and independent ignition systems.

When asked by the Motor World concerning Bartholomew's attitude, Apperson, the veteran Kokomo automobile manufacturer, smiled pleasantly and indicated that a prompt and universal acknowledgement of his patent rights could hardly be expected at once, but that where mild measures were unavailing the courts could ultimately decide the conflict. In fact, he suggested, he preferred to do whatever arguing was necessary in the courts rather than elsewhere.

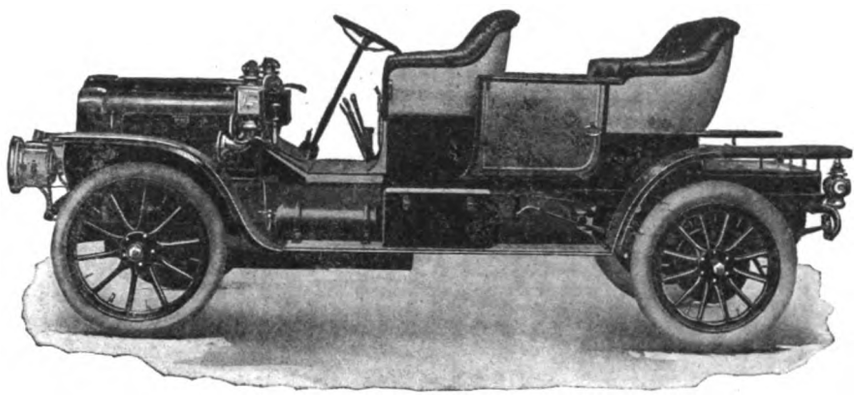
"Before I could get my own patent," he said, "I had to buy the Canda patent. This may show how strong I believe it to be. Nor did I make the purchase without a pretty thorough knowledge of what I was doing. If I am mistaken as to its broadness and strength, I shall learn it from the courts and not elsewhere."

Mezger and National Sales Part Company.

The National Sales Corporation and C. A. Mezger, Inc., of New York City, have terminated the sales arrangement by which the former company handled the latter's products. Differences of opinion as to selling policy and trade relations are assigned as the cause.

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Write for the New White Catalog



We have recently issued our complete 1909 catalog. In it are shown the full line of the new Model "M" and Model "O" cars—touring cars, runabouts, town cars, limousines and landaulets.

We have given considerable space to an explanation of the advantages of the White Steamer, as compared with cars of other types, and we believe that this section will prove especially interesting and valuable to those who are contemplating the purchase of any other make of automobile.

The catalog includes a full illustrated description of the construction of the White, with especial attention given to the engine—the simplest used in any automobile, and to the generator—the White steam-making device which is as different from the ordinary boiler as day is from night. You should read this section carefully if for no other reason than that you may be well informed regarding the construction of "The only car of distinctively American design."

A postal to us will bring a copy.

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Development of the Ignition System.

What advances have been wrought out in the field of gas engine ignition during the past two or three years is absolutely beyond the comprehension of the non-technical man, and hardly to be appreciated to its full worth by any except those who are fully cognizant of all that is going on in the hard-fought field of ignition appliance production. Indeed the average motorist now looks back with feelings of mingled self-pity and amusement upon the days when he was forced to spend a good portion of his time tinkering, very much in the dark, upon the sparking system of his engine. That his present freedom from difficulties of the sort is due much more to the excellence of the systems now in use than to his own experience and the skill he has acquired in caring for the machine, is not likely to occur to him.

Perhaps the rapid rate at which progress has been made recently as compared with the earlier days of the automobile is due in large measure to the development of the ignition specialist who is a highly theoretical electrician, dwelling deep in realms of megohms and farads. A less obvious and more plausible explanation, however, perhaps may be found in the rivalry which has sprung up between the older favorite in the dry battery and vibrator coil, and the high tension magneto in its many different forms.

With the development of the really successful magneto, great stimulus was given to the improvement of all ignition systems, and in particular to the dry battery and coil aggregation, which it is believed in some quarters it threatens to extirpate. In consequence wonderful strides have been made in coil improvement. In particular the design of vibrators and the relative proportions of condensers to windings has been improved, formulas for the windings have been revised and in consequence the spark coil of the day is a vastly better device than its predecessor of a year or two ago.

In particular, advances have been made in the way of provision for economy of current—a thing which a few years ago would have appeared simply absurd. Now, however, the relative economy of two different coils may prove the deciding factor in a manufacturer's choice of the standard equipment for his season's output, and the coil makers, keenly alive to the fact, are shouldering each other bravely about with the slogan of added battery economy always in the air.

Incidentally this movement has resulted in a pretty general adoption of the idea that a single hot spark is a better and more effective source of ignition than the stream of rapidly succeeding sparks which used to be considered the measure of coil efficacy. In the magneto of the high tension type, the single spark is proving ample for the purpose, and makers of plain coils are not slow to see that with its added benefit of saving the vitality of the batteries, it is a feature well worth developing.

Body Design and Human Anatomy.

With the return of the tide of body design to the styles which have so long been in use among carriage builders, a question very naturally arises as to why the low-backed, diminutive body and seating effects which just now are so much in evidence have attained the degree of popularity which undoubtedly they have. It requires no sort of demonstration to show that the King of Belgium type of body, or the Tulip pattern which succeeded it and immediately preceded the straight line type, are more comfortable and restful to sit in than the smaller accommodations now provided. Whether in the form of the miniature tonneau, the light roadster or the rumble affair—now frequently appearing with the old-fashioned lazyback of the carriage trade—the passenger who essays his first ride after experiencing the luxury of a big tonneau must have certain misgivings as to his bodily welfare during the trip. Oddly enough, however, the result is not usually as bone-wearying as it had been imagined would be the case. All of which points to the suggestive truth that comparatively few people know how to sit down properly when motoring, odd though it may appear.

Long experience in railroad traveling teaches that the highest degree of comfort is to be obtained not when lolling back against the cushions, but when sitting bolt upright, or even leaning a trifle forward. Motorists of long standing have learned to save themselves no small fatigue by the simple expedient of sitting up straight or nearly so, particularly when the car is running at speed or is coursing rough ground. The relief to be obtained in this way is based upon the physiological truth that the nerves which centre about the base of the human spinal column become mortally offended if jarred and pounded as must be the case when the victim leans back far enough to be robbed of the benefit of nature's provision against such a contingency. Indeed long periods of vibratory treatment of this sort sometimes occasion very serious results. Much back-weariness and general debility may be prevented merely by leaning forward.

The advantage of the small tonneau or surrey in this connection is that it offers no sort of temptation to lean back, especially when anything like high speed is being maintained. Indeed to do so, at times involves so sharp a punishment in the shape of a blow from the hard back of the seat, that one such experience is apt to be sufficient. The consequence is that the occupants of the popular machines of the day are learning to assume an alert posture of full muscular control, which not only tends to remove the irritation from the ever watchful nerves, but also enables them the better to protect themselves against sudden jolts and pitchings of the machine. The

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alluring depths of the more luxurious cars, however comfortable they may be to sit in, do not always prove as comfortable to ride in as the less attractive, straight-backed, thinly padded seat of the roadster models. Their virtue lies not so much in the form of the vehicle, however, as in its service in teaching the passenger how to ride. Once the trick has been learned, it may be that less will be thought of "toy tonneaus" for touring purposes than is now the case, and more of the more luxurious vehicles.

Journalistic Feats of "Ledgerdemain."

In the very nature of things, amazing doings are to be expected on the part of Siamese twins, but that was an uncommonly marvelous brother act, or double sleight of hand performance, that those siamese twins of journalism, The Automobile and The Motor Age, played in their "Special A. L. A. M. Show Issues."It is true that once more the twins both more than doubled their prices, and while it is as true that, as was the case with the Palace show, the function in the Garden was "written up" before the doors were opened, the trifling fact that reporting an event occurring on the 16th in issues bearing date of the 14th entailed an entertaining mixture of present and future tenses, the pretty vari-colored ink used possibly may disguise such phenomenal forehandedness.

But for "twin brothers" to be able to toss into the air the same Raineslaw sort of sandwich and perform such magic as to make it appear two different sandwiches is no ordinary feat, even when performed by siamese twins. On the occasion of their Palace show issues, it seemed fitting to remark the 'twins' sleight of hand performance of slipping here and there a page of reading between twenty or thirty pages of advertising, and thus making a journalistic "sandwich" such as never had been seen before; but we were wholly unprepared for the discovery of the very same "cheese"—the identical reading pages—doing duty in the "special A. L. A. M. show issues" of each of the "twins."

It was a great bit of ledgerdemain (this word is not misspelled) and though overworked sandwiches may not promote digestion, the "twins" have cause to be proud of their double or rather quadruple shuffle, in which pride their half-brothers, the Blue Book and the Directory, surely must share. It is not every year that such an achievement is "pulled off."

MUST PAY FULL IMPORT DUTY

Important Decision Affecting Re-entry of Cars Repaired Abroad—Their Status as Household Effects Denied.

Much interest in the status of American owned foreign automobiles, used abroad by their owners and subjected to foreign repairs prior to reimportation, has been aroused by a decision of the United States Circuit Court of Appeals, handed down January 15, which reverses the judgment of the lower courts and the action of the general appraisers in the case involving the reimportation by W. R. Grace & Co., New York City, of an automobile which had been repaired abroad.

In the case in question it appeared that a foreign automobile had been used abroad for more than one year, but immediately prior to the exportation of the same to this country a new body was placed thereon, and it was maintained by Messrs. Brooks & Brooks, of 12 Broadway, attorneys for the importers, that so much of the automobile as had been used abroad for not less that one year was exempt from duty, and only the limousine body which had been added just prior to the shipment of the car was liable to duty. This contention was sustained by the Board of General Appraisers and by the United States Circuit Court, and when the case came up for argument in the Circuit Court of Appeals last month, the Assistant United States Attorney, D. Frank Lloyd, argued that an automobile cannot be considered within the provisions of the free list relied upon by the importers.

Under the tariff act of 1883 the Supreme Court of the United States held that a carriage was within the corresponding provision allowing free entry as a household effect, but in view of the fact that the paragraph in the act of 1883 referred to did not contain the word "similar," the United States Attorney argued that the provision in the act of 1897 should be limited to household effects of a similar nature to "books, libraries, usual and reasonable furniture."

The decision of the Circuit Court of Appeals says upon this point:

"The insertion of the word 'similar' indicated that Congress intended to do away with the exemption of household effects generally and to restrict it to such as should be like books, libraries or household furniture. We think that automobiles cannot be said to be similar to books, libraries or to usual and reasonable household furniture or either of them."

That the question at issue is to be threshed out further is indicated in a statement made by Frederick W. Brooks, Jr., of counsel for W. R. Grace & Co., who says: "It is our purpose to apply to the Supreme Court of the United States for a writ of certiorari to review the decision of the Circuit Court of Appeals in this case, and if this application is denied we shall bring a new case before the Board of General Appraisers."

COMING EVENTS

January 16-23, New York City—Association of Licensed Automobile Manufacturers' annual show, Madison Square Garden.

January 21-23, Los Angeles, Cal.—Automobile Dealers Association's show.

January 25-30, Cincinnati, O.—Automobile Dealers Association's show.

January 27-February 3, Philadelphia, Pa.—Automobile Trade Association's eighth annual show, Second Regiment armory.

February 6-13, Chicago, Ill.—National Association of Automobile Manufacturers' show, Coliseum and First Regiment Armory.

February 15, Detroit, Mich.—Detroit Automobile Dealers Association's show, Wayne Pavilion.

February 15-20, St. Louis, Mo.—Automobile Manufacturers and Dealers Association's annual show.

February 16-18, Denver, Co.—Denver Motor Club's first annual show, Auditorium.

February 20, 21, 22, New Orleans, La.—New Orleans Automobile Club's Mardi Gras carnival 3 days race meet.

February 20-27, Newark, N. J.—New Jersey Automobile Trade Association's show.

February 22, Cleveland, O.—Cleveland Automobile Dealers Company's show, Central Armory.

February 27-March 3, Hartford, Conn.—Automobile Dealers Association's show.

March 1-6, Buffalo, N. Y.—Buffalo Automobile Club's 7th annual show, Convention Hall.

March 1-6, Omaha, Neb.—Omaha and Council Bluffs dealers' show, Auditorium.

March 6-13, Boston, Mass.—Boston Automobile Dealers Association (Inc.) seventh annual show, Mechanics Building.

March 8-15, Kansas City, Mo.—Kansas City Dealers Association's show, Convention Hall.

March 10-13, Memphis, Tenn.—Automobile show, Auditorium building.

March 13-20, Minneapolis, Minn.—Minneapolis Automobile Show Association's show, National Guard Armory.

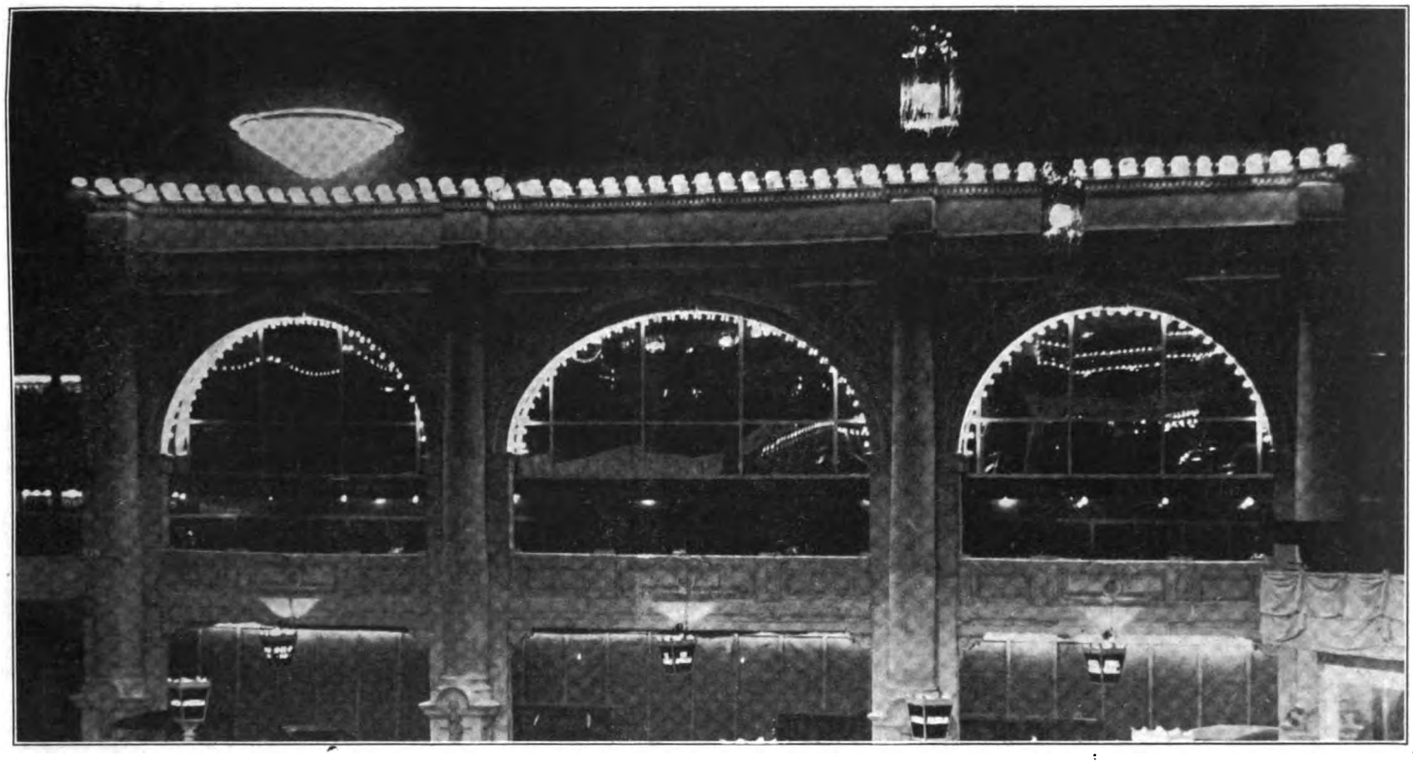
March 15-20, Rochester, N. Y.—Rochester Automobile Dealers Association's show, Convention Hall.

March 22-25, Ormond-Daytona Beach, Fla.—Daytona Automobile Club's four days speed carnival.

March 27-April 3, Pittsburg, Pa.—Automobile Dealers Association's show, Duquesne Garden.

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The Garden Show an Active Exposition



TRIUMPHAL ARCH AT THE GARDEN SHOW

Opinions differ as to the supreme beauty of the Garden show. Difference of opinion "is what makes the horse races", and by the same token it is what brings out new decorative effects. Those who are enthusiastic over this year's offering urge that it is beautiful in its simplicity, while others find the simplicity rather severe. Whatever its decorative merits as compared with former shows at the Garden—a comparison which all the veteran show visitors are bound to make—it is, when considered by itself, a spectacle that as a whole is in every way worthy of the industry it represents, the cars themselves presenting an appearance excelling the disclosures of any previous year.

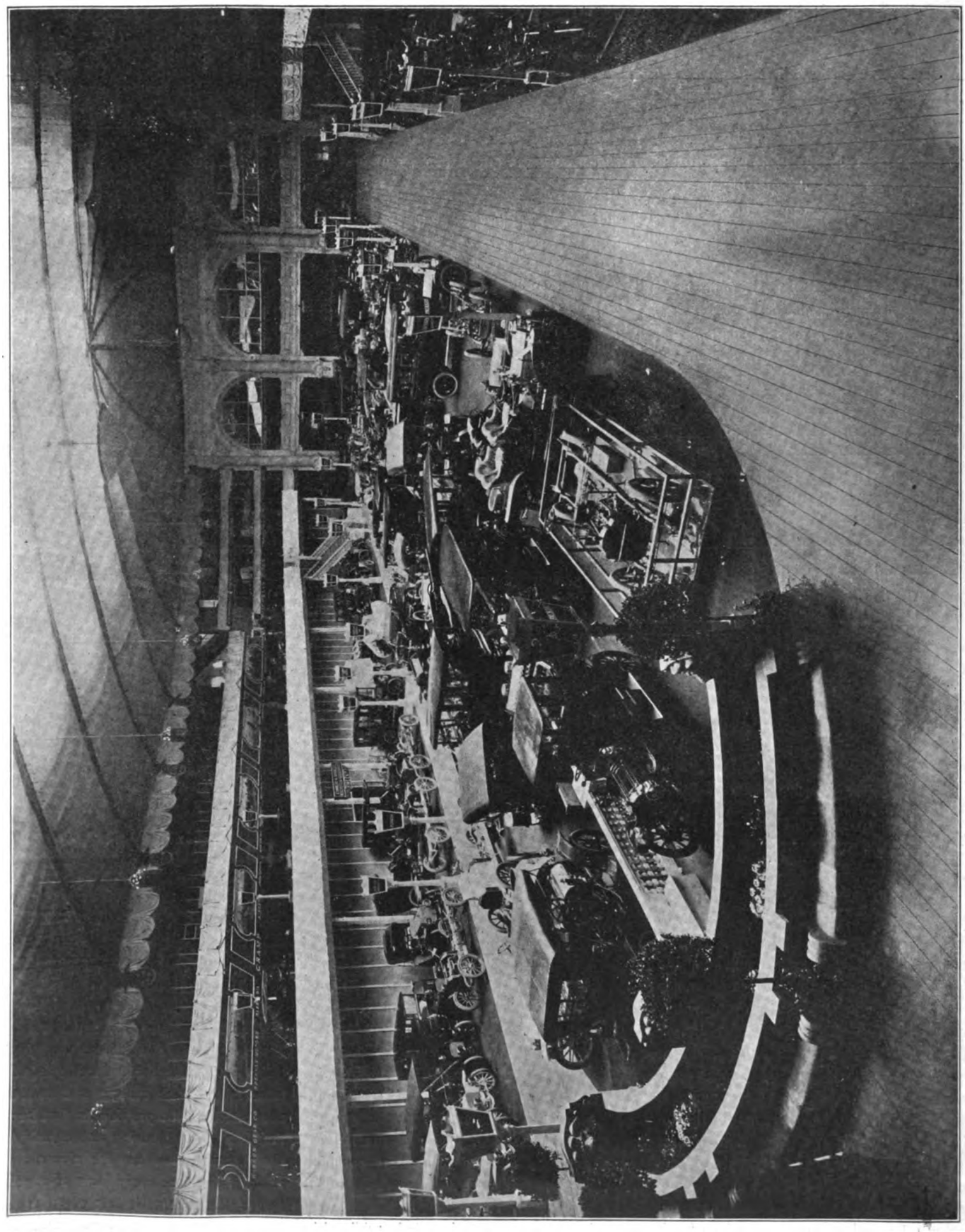
Trees laden with ice crystals, flurrying snow and a wind that makes fur coats seem like mousseline de soie provide a contrast in the transition from outdoors to the interior of the Madison Square Garden that makes the brilliancy and warmth of the show doubly impressive, with its fleet, summer-y runabouts in light colors and the luxurious limousines, and crowds of affluent appearing investigators parading the aisles or chatting amiably in groups, while the music of the band provides an agreeable overtone for the conversational hum. Theatrical looking street lamps at the outer boundaries of the various spaces, bearing in illuminated letters the names of the respective exhibitors lend a very "street-scene-in-Verona" effect which at times gives the visitor the apprehensive feeling of an amateur actor on whom the curtain may go up unexpectedly.

Spaciousness and a freedom from encumbering gew-gaws are apparent when one has passed to the right or left of the electric garden fountain which confronts the entrance. The main floor show spaces have back walls of brown burlaps panelled with white wood strips, and except for the corner lamps and green carpeting are devoid of decoration. No palms, rubber plants, arches or other similar obstructions interrupt the view, so that the cars themselves have every chance to shine out conspicuously in whatever glory of color and finish they may boast.

An immense white "triumphal arch", with the arch intervals bearing three great mirrors, is placed at the far end of the building, the mirror reflections giving an enhanced distance and size effect. The elevated platforms at either side of the concourse or "Circus Maximus", as it has been called, are clear of decorative frippery and so are the upper galleries. In fact about the only effort at ornamentation that has been attempted on the long sides of the main part of the Garden is a series of panels hung from the under part of the second gallery and depicting methods of transportation in different parts of the world, such as the elephants of India, the Eskimo dogs of the Arctic region, and the sea-going hacks of Red Bank, N. J.

Everybody agrees that the concert hall has never before looked as well as it does this year. A huge white trellis is introduced beneath the high ceiling, and concealed incandescent bulbs provide an "indirect" light that is at once pleasing and mystifying. In the restaurant, where the electric pleasure vehicles displace everything of a restaurant nature, the scheme is that of an Italian garden, with mural landscapes, and an overshading pergola. The basement spaces are

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GENERAL VIEW OF THE "CIRCUS MAXIMUS" AT THE GARDEN SHOW

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GARDEN SHOW AS SEEN UNDER THE ELECTRIC ILLUMINATION

less ornate, brick wall being only partially concealed by bunting, but the rathskellar is surrounded by a fake stone wall that is very realistic and in its old wine cellar interior the deception is extended to casks, groined arches and Middle Age settings which remove the guest from all thoughts of nearby Broadway.

From the basement clear up to not only the second balcony, but to the little third tier boxes at the ends, where a few accessory exhibitors find perches, there never was a livelier show. If the attendants appear keen for business it is because they are getting business, the number of "live ones" in the ranks, both retail purchasers and dealers, being gratifyingly large.

Movement, revolution, dazzling sparks, thump, clank and buzz are the incidentals to the endeavor of both car and accessory exhibitors to demonstrate convincingly the mechanical points involved in their products. The visitor can change gears and manipulate pedals to his heart's content at practically all of the car exhibits, nearly every one having a show chassis to reveal the mechanical features of the models. A crankshaft mounting fan blades is disclosed at one space, the breeze from an electric fan being sufficient to turn it, while other makers have their chassis connected with electric motors so that the mechanism is given the semblance of real action. Makers of the electric vehicles are fortunate in being able to show their chassis or control arrangements running with power current just as they are used on the cars themselves. The accessory people are the most generous users of noise and motion, however, and a complete trip past their spaces has all the surprises and excitement that ingenuity of display and presentation can invent. Then there is the motorcycle section, where the machines of this class hold forth in numbers that prove astounding to those who have not followed the development of the motorcycle movement.

Except for the one make of steam car and the electric vehicles, all of the cars shown are made by members of the Association of Licensed Automobile Manufacturers. Most people even casually interested in motoring have come to know that the members of the Licensed Association operate under the Selden patent, claimed to cover the elements of all gasolene cars. Since 1906, when the Association took control of the Madison Square Garden so far as automobile shows are concerned, only "licensed" gasolene cars have been exhibited at the Garden affairs, but it was as far back as 1900 that the building held the first of its annual automobile exhibitions so that the present one is described as "The Ninth National Automobile Show." The heavy burden of making the arrangements for and conducting the show rests on the show committee of the Association, consisting of Colonel George Pope, the chairman, Charles Clifton, president of the Association; Edward P. Chalfant, general manager of the Association, and the committee's secretary, Merle L. Downs. The results of months of their work is crowded within the narrow limits from Saturday, the 16th inst., when the show opened, to Saturday, the 23d inst., when it closes.

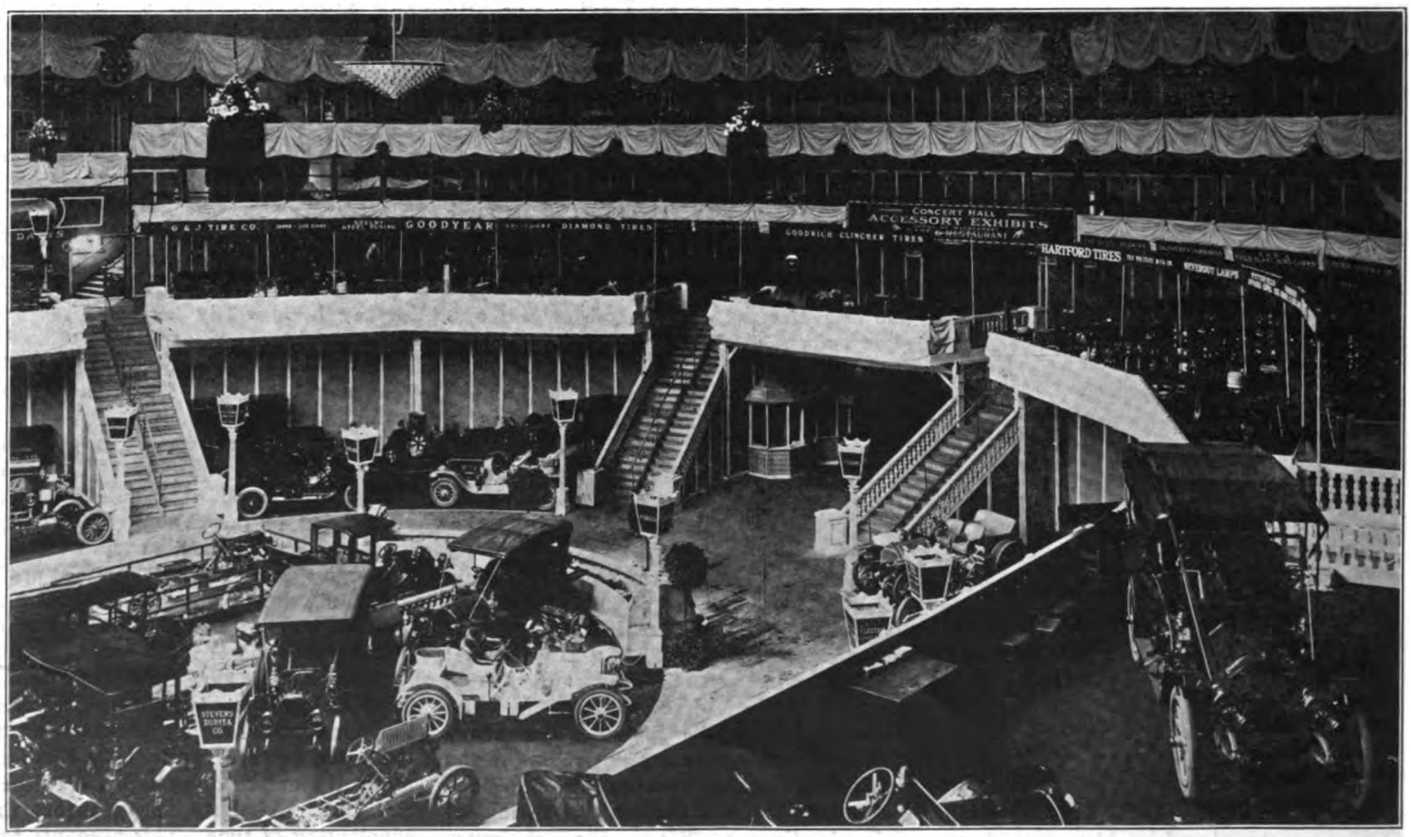
It is by no means a sensational show, in respect to suddenly revealed surprises in either design or price, such as have been "sprung" at show time by manufacturers in the past. Marvelous as are some of the new offerings in both these features, they have already been widely heralded, so that the public has been prepared for them in advance and finds the show an opportunity to confirm the truth of the earlier announcements.

Great range and variety is presented in styles and prices, and probably never before have the "licensed" makers had such a representation in the field of "popular price" machines and medium powered cars, although the extremely low priced products, in an absolute sense without relation to quality, are not many. The development of the new models in the medium powers, by makers who have heretofore been identified chiefly with high powered machines has not resulted in any lessened loyalty to the latter, however, so that the smaller cars are in the nature of an addition to the general character of the output rather than a supplanting of type. This accounts for the fact that in the higher prices the offerings

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VIEW SHOWING ELECTRIC FOUNTAIN AND PANEL FEATURES IN DECORATIVE SCHEME



VIEW SHOWING ENTRANCE TO "CIRCUS MAXIMUS" AND APPROACH TO CONCERT HALL

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are as numerous as in the past and that some of them embody a degree of luxury and expensive detail that puts them among the most altitudinously listed motor vehicles ever placed on the American market for regular sale.

Trade observers looking for any possible change in the public attitude toward the shows have for the second time this season been disappointed, as the attendance of the public is just as enthusiastic and general as at previous events of the same kind. Increase of dealers' attendance is apparent, moreover, indicating that at the present time the big automobile shows enjoy a blending of public and trade patronage that is highly advantageous.

From the West, including points all along the Pacific Coast, a remarkably strong delegation of tradesmen have arrived on the scene, while dealers from Canada, Mexico, and Cuba appear in numbers that suggest how important the trade lying the other side of the northern and southern boundaries of the United States is becoming. Such visitors mean much to both car and accessories exhibitors.

While on serious business bent, the trade visitors are quite as much delighted and entertained by the lighter phases of the show as anyone else. They like to look at the many beautiful prize cups that are this year displayed by the manufacturers whose cars captured them. The Vanderbilt cup, famous the world over as a racing trophy, is exhibited by the Locomobile Co. of America, a special officer standing guard over it all the time in the space where its winner, the Locomobile, and the "New York-to-Paris" Thomas car are on view. As a gentle bit of "crowing," the Locomobile cars in the company's nearby space, all have a miniature Vanderbilt cup affixed to the top of the radiator cap, and so firmly fixed that souvenir hunters cannot pull them off.

Bathed at times in the purple, green or deep blue beams of the playful electric searchlights that point downward from the topmast galleries, the evening crowds are in themselves a colorful exhibit by reason of the presence of so many women, whose spangled and elaborate gowns give a generous chromatic contribution to the scene. Furthermore, the wearers know more about cars than do the salesmen in some instances, and he who would seek to obtain the order for the town car or limousine which they purpose buying must needs be well equipped with both technical knowledge and selling ability.

NOVELTY IN NEW DESIGNS.

Next to the impression of the show as a whole and with the beginning of the ab sorption of its minor details, the visitor comes to a realization that whatever may be the structural tendencies in the power plants of the vehicles, body design and in particular body coloring has taken on most alluring shapes and tints for the purposes of the show. Indeed, the setting of the Garden this year permits the color effects on the various bodies to be appreciated as never before, while the effect also is considerably enhanced by the fact that a number of the makers have chosen the most daring and brilliant shades for their exhibition vehicles, in some cases very evidently choosing the color schemes of the machines on view with the distinct purpose of bringing about effects which are either bold or harmonious according to their individual fancy. Thus certain displays stand out in bold relief by the very glitter of their elements, thereby concentrating the attention at once upon the cars instead of upon the show as a whole, as sometimes is the case where the decorations are selected with an eye to dazzling the visitor upon entering the show and permitting him no opportunity for recovery while within its precincts.

The tendency—if tendency there be in the general run of body design just now—is toward the development of the miniature tonneau effects, with their complementary shapes in the double rumble roadsters. These and the touring cars, which naturally remain the principal stock in trade of the makers, reveal ample evidences of improvement in detailed construction and finish, but seldom any of the drift toward undue lavishness in equipment which used to be manifest. Even the limousine bodies are frequently found to have taken on a soberer tone within the year, though noteworthy exceptions are to be found in one or two instances of vehicles which are distinctly showy in their nature and which are rendered all the more conspicuous by that very fact.

Of these, perhaps the most striking is the suburban body which is displayed on the Pierce stand and which is finished most daintily in Louis Seize style, with narrow gilded mouldings and fittings, the delicate pink and white effect of the upholstery in clean contrast to the green body color, which is set off by the brass work. Even this is of special art design, the side lamps, for example, instead of being in the ordinary lantern form, being shaped as candelabra with filaments concealed inside the glass flames of the torches.

More striking exteriors are those displayed by such cars as the little Palmer & Singer town car landaulet with its deep orange tone, its neighboring Skimabout in green, the Franklin "six" in automobile red of characteristic hue set off by broad vertical black stripings, the Studebaker Suburban with its natural wood box and gear and basket seats, or the Winton display with its cerise body trimmed in aluminum colored leather and its sister car in bright green tint. These are rather the exceptions than the rule, however, the majority of the cars being dressed in colors which though striking enough in any other connection are relatively modest in a show of automobiles.

But for the wise visitors, who, having regard of the adage about the depth of penetration of the layer of beauty, the show is a place full of wonders in mechanism refined and standardized to a degree which it never would have been thought could become so general, especially when, only a year or two ago, the vestiges of the old regime yet re-

CENSUS OF THE SHOW.

Total Exhibitors		**298**
Cars		**40**
Motorcycles		**19**
Accessories		**239**

PLEASURE CARS.

Gasolene:		
One cylinder	1	
Two cylinder	3	
Three cylinder	3	
Four cylinder	90	
Six cylinder	18	
Total Gasolene Pleasure		**115**
Steam cars		**6**
Electric cars		**34**
Total pleasure		**155**
Touring Cars	43	
Enclosed Cars	50	
Runabouts	30	
Roadsters	11	
Close-coupled or miniature tonneaus	18	
Racing type	3	

CHASSIS.

Gasolene:		
Two cylinder	1	
Four cylinder	20	
Six cylinder	6	
Steam	1	
Electric	4	
Total Chassis		**32**
Total Pleasure Cars and Chassis		**187**
Air-cooled		**6**
Water-cooled		**109**
Two-cycle		**4**

COMMERCIAL CARS.

Gasolene:		
Two cylinder	2	
Four cylinder	9	
Total Gasolene		**11**
Electric		**12**
Total Commercial		**23**
Commercial Chassis	3	

MOTORCYCLES.

One cylinder	53	
Two cylinder	24	
Three cylinder	1	
Four cylinder	4	
Total Motorcycles		**82**
Total Gasolene Vehicles		**208**
Total Steam Vehicles		**6**
Total Electric Vehicles		**46**
Total all Vehicles		**260**

At the last A. L. A. M. show in Madison Square Garden, November 2, 1907, a total of 241 vehicles was exhibited, of which 124 were gasolene pleasure cars, 4 steam cars, 38 pleasure electrics, 53 motorcycles, 10 gasolene commercial and 12 electric commercial. In addition to these there were 30 pleasure chassis and 2 commercial chassis.

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mained, when every builder followed a path different from that of any other.

There is, for example, the growing agreement in the use of the high tension magneto, the interesting variation in practice between the use of the complete dual system with two sets of plugs, and the single system with optional sources of current, in magneto and battery, together with the methods of wiring, the mounting of the ignition apparatus and the varied individual devices for improving its convenience or action; there are the variations in the method of cylinder casting yet apparent in single, double, triple and quadruple units, the various arrangements of the engine auxiliaries as well as the valves, ports piping and gears; and last, but not least, there are the variations in the arrangement of the transmission, disc, cone and plate clutches, sliding and progressive gearsets as well as planetary, unit power plant mountings, and the increasingly popular axle units.

Despite the onward march of standardization, each manufacturer has managed to retain a certain distinctiveness for his product. Outwardly this is manifest first in the characteristics which are significant to the mechanically inclined who are thoroughly familiar with the earmarks of the industry. Also it is increasingly manifest to all in sundry special marks which are being adopted as brands upon the different makes of machine. Usually either on the radiator front or the hub cap some special design or emblem is found which serves to distinguish the car from all others, and the showgoer who is inclined to a display of wisdom at a later period in the year, usually takes this occasion of familiarizing himself with such hall marks.

It is no use looking for the sort of radical departures which a year or two ago furnished the spice of show visiting. They are no longer to be found. Instead the well-informed investigator is content to look for less conspicuous though none the less important alterations in the methods of accomplishing certain ends which are common to nearly all machines, as in the arrangement of the mechanism of control, the arrangement of the timing and auxiliary driving gears of the motor, the arrangements for relieving the driving stresses in axles and transmission shafts and even in the placing of the attachments which formerly ornamented the dash board but which, by every possible artifice are now concealed or entirely effaced.

Except in the lines thus vaguely indicated, the discovery of mechanical landslides in any particular direction is practically impossible. It is only by a direct examination of the individual exhibits that the visitor is enabled to arrive at any conclusions as to the wealth of novelty which the show actually possesses, and only by a tour of the show from exhibit to exhibit is the chronicler able to convey even a passing hint of the possibilities for study and appreciation which it presents to the visitor.

Changes in factory organization or business organization in several instances have given rise to rather important alterations in the product. An instance of this is to be found in the case of the Walter cars—the Roebling-Planche product as it is to be known henceforth—in which the Walter models of last year have undergone a number of alterations, notably in the redesign of the springs and rear axles; while added refinements have appeared in a neat trunnion mounting for the radiator, the use of a carburetter fitted with automatic ball valves for controlling the auxiliary air supply, and the details of the single piece crank case casting with its three-point suspension. Touring car and taximeter cab forms are shown, the latter distinguishable by its unusually low hood, while the most conspicuous feature of the display is the brand new racing model of 100 horsepower rated output, which is of entirely different design from the touring cars, built exclusively for speed purposes, and carries a number of features which are particularly appropriate to its class.



DISTINGUISHING CHARACTERISTICS OF VARIOUS MAKES

The Chalmers-Detroit, which has not been exhibited at the Garden before and is still in the first blush of its youth on the market, appears in a form which attracts considerable attention both from the fact of its structural features and because it is shown in sectional chassis, with electric motor drive. The motor is provided with unusually large inlet valves mounted in the heads and actuated by rocker arm offset exhausts, and a particularly neat arrangement of the piping. The combined housing and support for the multiple disc clutch and selective change gear is supported from the engine casing, and also absorbs the full torque load, the torsion stresses being taken up by the familiar tubular housing which is supported by the casing through a ball joint. An original feature of the assemblage is the provision of a yoke depending from the cross frame member just back of the gear case, which is calculated to keep the torque tube and shaft from dropping or thrashing about in the remote event of a failure of the joint.

Another of the absolute newcomers at

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the show is the E-M-F "30", which is a wonderfully trim little offering at a little price, but full of big possibilities. From the standpoint of design it is no less to be wondered at than in point of its market possibilities. It possesses the axle-mounted type of change gear which is counted so high by many designers, expanding ring clutch, and a torque provision which is unique in that the resisting lever is stamped from sheet steel—like the ends of the axle casing. The motor has several peculiarities, among them the use of 2⅛-inch valves for a 4-inch bore, offset crank shaft, thermo-syphon cooling and splash lubrication automatically fed from a large reservoir cast integrally with the crank case. Very unusual is the construction of the steering knuckles which are offset back of the pivot points to secure the so-called castor-effect, or trailing action thought to be useful in steadying the action of the wheels and rendering guidance easier than with the ordinary central pivot system.

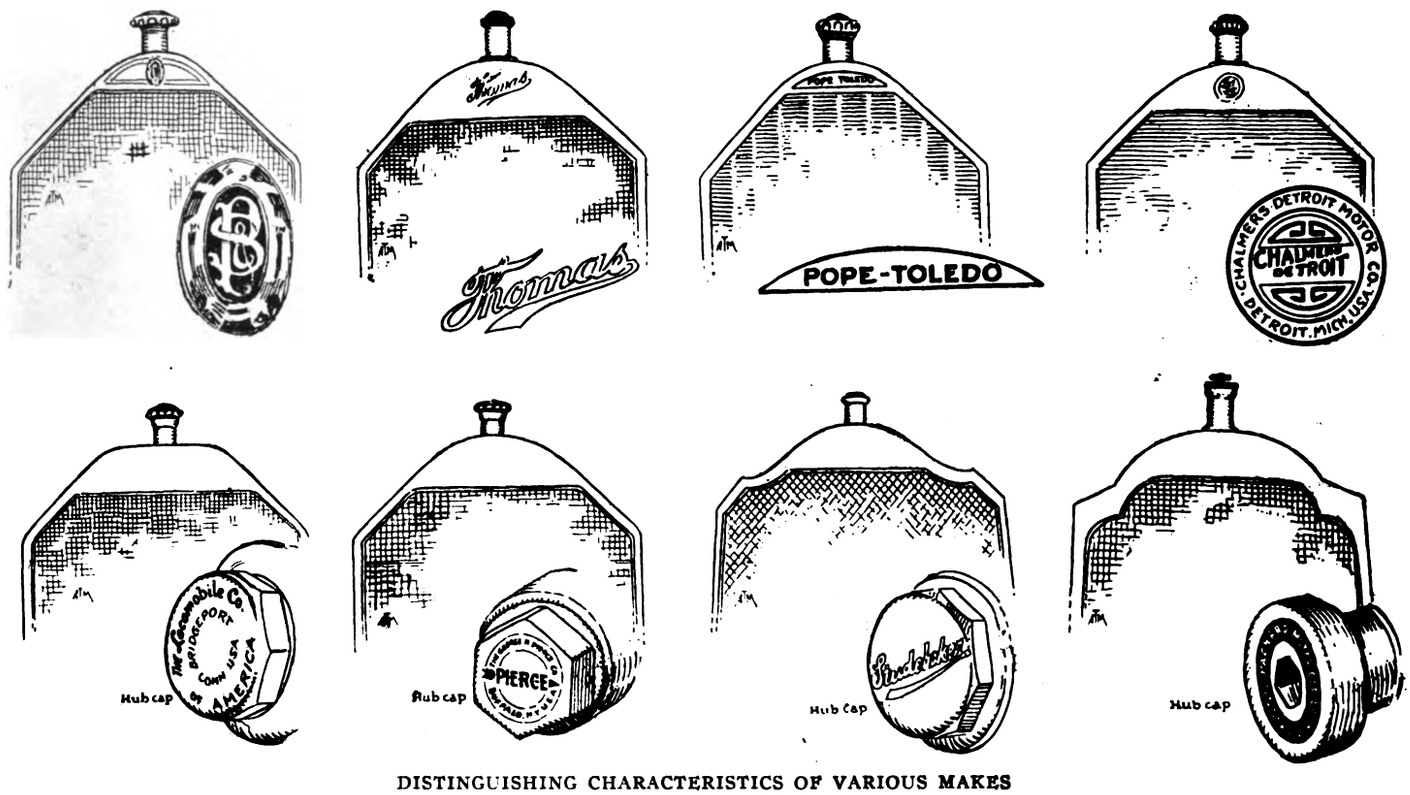
The Studebaker line, which is associated with the last named car on the market, is this year distinguished by the use of the new Bosch magnetic plugs with low tension magneto. The arrangement permits the effect of the ordinary make and break spark without the mechanical complications which the mechanical make and break carries with it, and also with all the certainty and positiveness of the electrical device. In other respects the car remains practically as it stood a year ago, except that the steering post has been reinforced, a new type of automatic air valve has been added to the carburetter and one or two other minor alterations have been made which are not of material significance. The chassis is of particularly impressive design by reason of its evident thoroughness of detail, and the body mountings which it carries on the stand are built along thoroughly rational lines, particularly the suburban type, which has the box body of the despised farmers' democrat wagon, with adjustable rear seat which may be removed to make way for such luggage or other material as the suburban dweller may have occasion to transport.

A number of the better known makers have brought out new models this year which are here shown for the first time, among such cars being the Lozier, which is shown in a new light six cylinder type, which has its motor valves mounted entirely on the left side, instead of on both sides, as in the older and larger models, and a massive torque tube leading from a brass ball and slip joint supported just back of the gearset to the floating type rear axle. The Winton six-cylinder type also is seen in new form in a 48 horsepower machine, which on the stand is distinguishable by a marvelous arrangement of intake piping made necessary by the location of the carburetter on the opposite side of the motor from the intake ports and also by the arrangement of the exhaust manifold. Self-starting by means of compressed air run through a special distributing valve is an original feature of this particular line, which is carried over into its second year with great pride.

The Packard line is this year distinguished by the first deviation from the policy of one-design, one-car construction which has been retained for several years. In addition to the redoubtable "30" type there now is a so-called "18", designed primarily for twin car work, but following closely the lines of its larger sister car. Knox cars, formerly distinguished among the limited number of exponents of air-cooling, are now shown for the first time in all-water-cooled form, the motor of last year with its removable cylinder heads, being supplemented by a newer form of smaller size and of more conventional design, though still embodied in the characteristic unit power plant. Another line displaying new developments is the Autocar, which in addition to the new commercial chassis, shown in the arena by virtue of its adaptability to town car and pleasure bus service, is supplemented by a four-cylinder model, in which a peculiar feature is the method of housing the rocker arms which actuate the inlet valves in the cylinder heads—the arrangement being suggestive of that employed in certain types of make-and-break ignition.

The Elmore cars—staunch and tried exponents of the two-cycle principle—are featured at present with sundry minor improvements and one or two of general interest to the casual visitor, as in the case of the enclosed cone clutch, which now has the actuating spring mounted directly behind the cone. An offset crank shaft, newly designed steering column, lower front axle, and reinforcement of the brakes are other alterations which have been made to this single A. L. A. M. two-cycle product.

Among the new models by makers of long standing, which are cited as worthy



DISTINGUISHING CHARACTERISTICS OF VARIOUS MAKES

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examples of the movement for higher quality at lower price is the new Cadillac Thirty, which embodies a number of distinctly original features which are new in addition to several others which have been employed in other vehicles of the type. Among the latter group may be mentioned the use of individual copper water jackets, and the design of the carburetter. The rear axle assemblage is rather unusual in appearance due to the fact that the rocker shafts actuating the brakes are brought inward almost to the center of the chassis, affording means of securing an equalization of the pull by means of very short lever arms—an apparent improvement over the method of extending such members for the full width of the chassis. A newly designed universal joint which is completely enclosed in a metallic housing is another feature which is noteworthy. Also it should be mentioned that the little single cylinder machine which has done yeoman service for so long is still produced and in practically the same form as when first turned out.

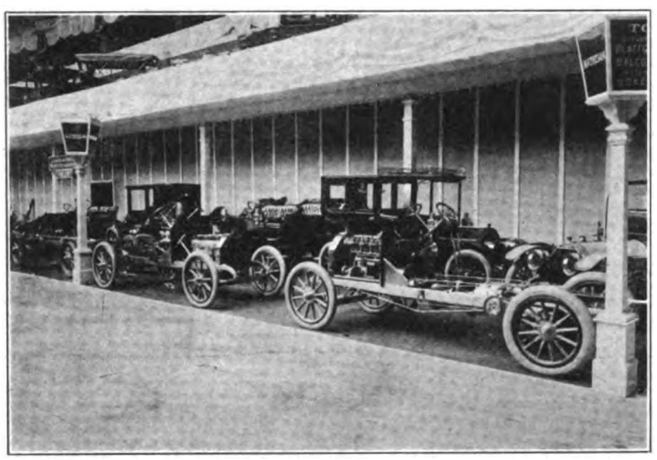
The Electric Vehicle Co., which through astute management has retained its position in the manufacturing field despite its heavy financial setback, is represented in several examples of the "Mark 48-3" car, which has been continued over through four seasons with only minor changes. A point which the critical observer is sure to note in its construction, is the arrangement for absorbing the torque of the axle and the driving strains in the rear assemblage. Instead of the usual torque system, the driving shaft with its two universal joints is left entirely clear and exposed, not even the double-cross joints being housed, while at either end of the axle two short arms are raised outside the frame sills, combined radius, torque and driving rods connecting their upper ends with the frame, at a point adjacent to the front anchorage of the rear springs. Sundry alterations in the arrangement of parts, such as the use of wider faced gears in the two-to-one group, annular ball bearings supporting the pump, magneto and cam shafts at their forward ends, have been made, and the frame size has been standardized so that the same construction now is used regardless of body mounting, the idea of interchangeability thus being promoted.

One of the newcomers at the show and also a car shown in New York for the first time on any such occasion, though produced within the city limits, a number of interesting points are displayed in the construction of the Palmer-Singer cars, which are shown under the license of the Hewitt Motor Co., by whom they are produced. Palmer-Singer, as distributors for the Simplex cars, also have an interest in the adjoining booth. On the Skimabout, the smaller of the Palmer-Singer models shown, the use of the double drop frame, permits a very low entrance to the town car, and an exceptionally low-hung and handy type of vehicle for city use is thereby developed. In runabout form, the chassis is hardly less pleasing, as the design employed is one of particularly graceful dimensions.

Aside from its more recent distinction as the family from which sprung the winner of the 1908 Vanderbilt cup contest, interest in the Locomobile exhibit is keen from the fact that in the new 30 horsepower type displayed, is shown the first attempt of the Locomobile designing department to produce a shaft driven car. The use of high grade metals in this machine has made possible the employment of a particularly light and pleasing axle formation, with its torque rod, spring supported at the forward end, and its enclosed cross form of universal joint. Special construction all the way through is claimed for the axle, and the details of its mounting are illustrated in a sectioned model displayed at the stand. Except for this feature, the machine follows many of the lines which have characterized its predecessors of the same name, among them being the use of low tension ignition with mechanical make and break igniters. In the axle assembly the use of radius rods is found which besides relieving the torque member and springs of any traction load, also serve as supports for the brake anchors, and being swivelled on the axle, any possible interchange of stresses between the springs and rods is avoided, and the function of each group is kept entirely independent.

The latest product of the Selden Motor Vehicle Co., is built with standard frame sizes for all types of body, including touring, roadster and limousine types, so that all three are interchangeable. In general arrangements of parts it is not out of the ordinary, but a number of original details are found in the method of working out some of the minor problems of its design, such, for instance, as the engine lubricating system. By the aid of a gear pump driven from the commutator shaft, a constant flow of oil is maintained, while the overflow from all the bearings, returning to the crank case is subsequently permitted to drain back into the pump well, which is in a separate compartment in the lower portion of the base, from which it is later drawn up for re-circulation.

In the 1909 Haynes cars, a novel feature is found in the manner of utilizing the space in the motor supporting arms, which ordinarily goes to waste, for the completion of the lubricating system. The forward arm on the right side of the machine, in fact, is really a multiple feed pressure actuated oiler, its location being such that not only is the containing chamber freed from danger of injury, but it is thoroughly accessible and handily located with regard to the possible requirement of making occasional alterations in its adjustment. Another feature of the latest model, is the provision for cooling the brake drums by partially filling them with water, which is retained by large flanges turned inward from the inner edge of the drums. The details of the roller pinion drive and the unique vertical torque bar which is confined to a vertical movement by sliding up and down in a yoke fixed to the chassis as the axle and springs alter their relative positions are noteworthy. This arrangement has displaced the former device which was similar in principle but necessitated the sliding of a much longer ver-



MATHESON EXHIBIT

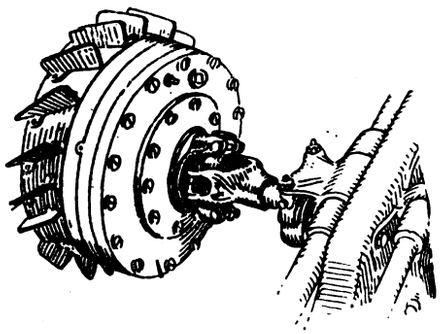


FRANKLIN EXHIBIT

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tical arm up into a recess in the lower side of the body. Numerous other original features are displayed in this machine, among them being the clutch construction, the use of a ratchet drive for the lay-shaft gear and the provision against the stripping of gear teeth thus brought about.

Franklin cars are shown in several different styles, but the unique features which they embody are illustrated in no better way than by the sectional motor mounted on the stand, which shows not simply the general arrangement of parts, but also the manner in which the independent cooling flanges are slipped over the cylinder castings, the arrangement of the concentric inlet and supplementary exhaust valves, and the location of the mechanically operated main exhausts at the sides of the cylinders, and just at the lower end of the working strokes of the pistons. A novel point in the 1909 models of the line is the exclusive employment of magneto ignition of the high tension variety without the use of batteries as a standby, and also with a fixed spark

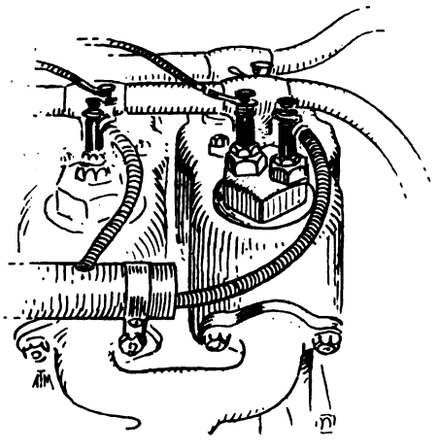


THOMAS CLUTCH

advance. The engine is now carried on angle steel cross rails instead of cast webs, the valve action has been improved by the use of a new system of cam generation and a new method of oil distribution in the cylinders by means of baffle plates has been adopted.

Another of the new sixes is the Thomas, which is remarkable in that the cylinder groups are cast in triple units instead of in pairs; as in several less conspicuous details. The general arrangement of the transmission mechanism on this vehicle is that of the Thomas car and taximeter cab chassis which has been so successful, though its dimensions and minor details are worked out on a different and appropriate scale. It differs from the little car, however, in point of clutch construction—the three plate type which has so long been a feature of the line being retained in place of the multiple disc used on the commercial type. It is this year completely enclosed. Its connection to the bevel pair on the axle is unique in that the shaft is equipped with two universal joints and is permitted to move independently of the tube which encloses it.

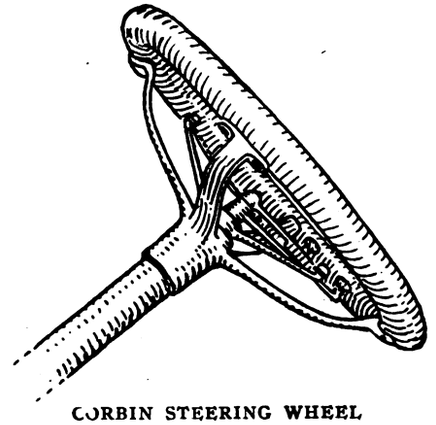
Apperson cars, which are produced in a variety of models, are shown to advantage in both four and six cylinder types—the latter being a newcomer, relatively speaking and embodying several minor departures from previous practice. In view of the recent announcement of the Apperson control of patents alleged to be basic as covering complete dual ignition systems, it is in-



APPERSON SPARK PLUG MOUNTING

teresting to note the way in which the principle is worked out on these machines. The observer will be interested to note the manner of mounting the high tension magnetos and the wiring arrangements, but also the way in which in order to secure an equally good firing position for both sets of plugs they are mounted in pairs in the valve caps. Somewhat the same arrangement, by the way, though differing in detail, is found on one other six cylinder car at the show.

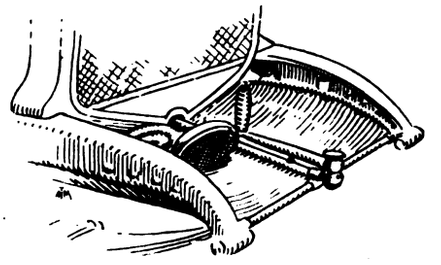
Along with the redesign of bodies, the adoption of a new type of steering wheel which is dished to prevent interference with the motor controlling levers when negotiating sharp corners, the improvements to the Corbin line include a rearangement of the engine lubricating system such that the cam shaft gears are better provided for while their housing also has been improved; a redesign of the clutch-operating mechan-



CORBIN STEERING WHEEL

ism such that the leverage over the clutch itself is greatly increased. A similar alteration in the connection for the foot brake pedal has resulted in giving it more retarding effect with less effort. Another point of deviation from former practice is in the construction of the propeller shaft which is of new design, with a special type of universal joint, fully enclosed.

In the Royal Model "M," which is practically a new car, produced by a new company, though carrying many of the original features of its immediate predecessor, are to be found a number of original points which are particularly novel. Among them is the forward extension of the frame sills for a considerable distance in front of the radiator, and the enclosure of the space thus formed by a protecting steel pan, which tends to exclude the road dust from the radiator. The presence of the pan also is utilized by the designer in affording position for the horn, the tube for which is led through the interior of the chassis and up the center of the steering column to the bulb, which is mounted above the hand wheel, while the motor starting crank instead of being left dangling or caught up with a strap, is hinged so as to fold back and lie in the pan when not in use. Another unique features is the method of connecting the ignition leads with the spark plugs by means of a large rectangular brass leader which encloses the wiring for both battery and magnetic circuits, the terminals



ROYAL DUST PAN

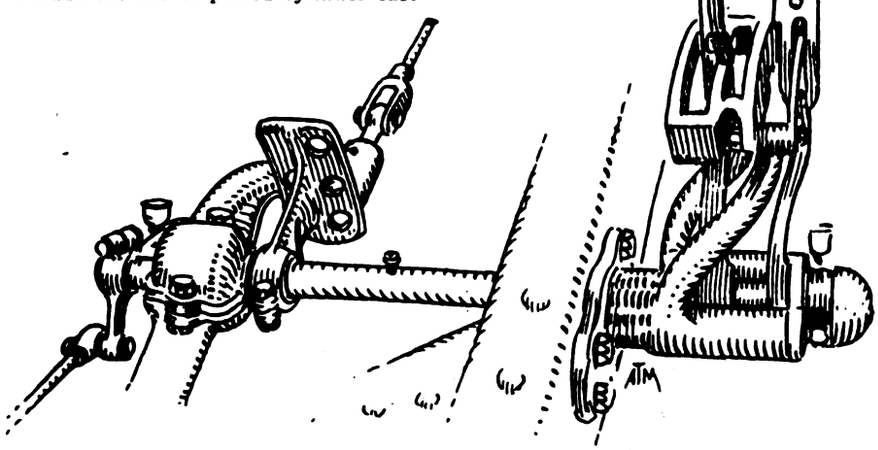
being connected with studs which project through to the outside. The conductor being capable of rotation, it follows that altering its position will serve to bring one or the other of the two sets of studs into contact with the special caps which top the spark plugs, thereby closing either secondary circuit as may be required. Leaving it in the neutral position, of course, cuts off all current. The car is fitted with a self-starting system in which air, compressed by a small pump located in the waist of the chassis and driven from the transmission shaft is used expansively in the cylinders, as selected by a special form of commutator or distributing valve mounted on a vertical shaft between the two pairs of cylinders.

As being the only steam car exhibited, as well as representing one of the very few exceptions at the show to membership in the A. L .A. M., the White is a particularly noteworthy display. This year for the first time, the new 20 horsepower model is on view, not simply in the form of the complete vehicle, but as a stripped chassis, whereby the passerby is given a unusual opportunity of studying the details of White construction to his heart's content, the particular show chassis on view being especially well suited to a demonstration of the wonderful developments which have

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taken place in this particular line since the early days of the teakettle boiler and the non-condensing engine. The generator, which resembles nothing quite so much as a twisted mass of useless tubing, together with its regulating devices for both fuel and water, is much the same is has been in use for several years, though it has been subject to the usual yearly improvement in small details. The engine on the other hand, is of new design, and embodies the Joy type of valve gear which is largely employed for locomotives in British railroad practice and possesses a number of advantages which the plain link motion never can hope to attain.

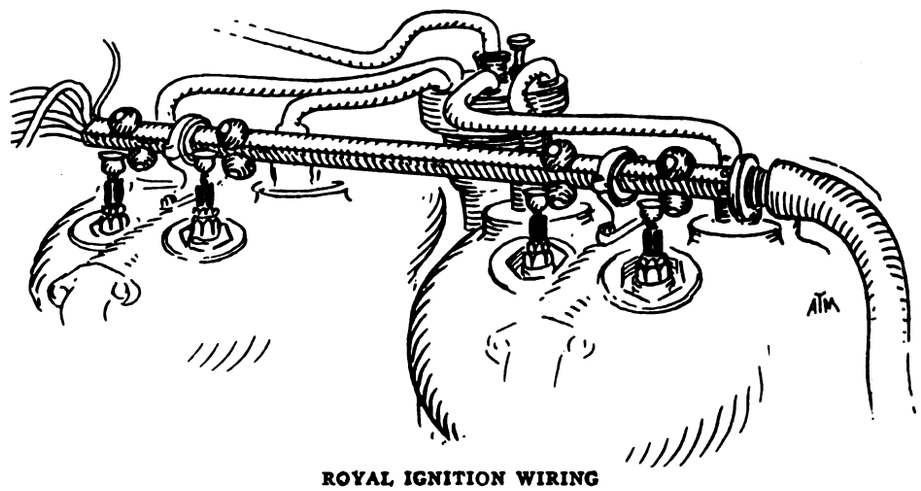
Quite the most significant alteration in the design of the Pierce line, and one which is conspicuous in these cars is the adoption of the side lever control for the change gear in place of the short lever mounted on the steering column, which was used for so long. The selective arrangement adopted is provided with a substantial inter-locking contrivance in the form of a perforated segment into which a finger actuated by the clutch mechanism is pushed when the clutch is seated, the holes drilled in the segment for the purpose being so arranged that one of them always will register with the finger regardless of the position of the gear lever. Two new models, one of four and the other of six cylinder construction comprise the complete vehicles which have been added to the line, though in many respects they represent no significant alteration over previous practice except as increasing the scope of the product. Alterations in engine design include the use of paired cylinder castings, rollers for the cam contacts, and a fibre end thrust bearing at the forward end of the crankshaft.



PIERCE CHANGE GEAR CONTROL

In the Stevens-Duryea cars, the construction of the unit power plant, which in itself is an original feature, is of considerable interest by way of comparison with other unit plants, in that a very long reach between supports is obtained, which in the case of the six cylinder models is readily remarked. The three-point suspension principle is here carried out logically, the forward bearings being on opposite sides of the frame, while at the rear the gear casing is carried on a single hinged joint. Perfect freedom of the plant from any distorsion of the frame is thus provided for, and the success of the system is attested by the fact that it has not been changed since first adopted as a pioneer invention in its class. Progressive gear shift, with a self-finding device to prevent over-running the notches are features common to all models, as is the use of a multiple disc clutch consisting of all steel members, one set of which are faced with asbestos fiber, and in which no oil is used. The new 24 horsepower four cylinder model, embodies practically all the standard features of the remaining older members of the line, both in the larger and smaller six cylinder models.

In sharp contrast to the theory of the triple point suspension as applied to the unit power plant, is the idea carried out in the design of the new Matheson cars—the latest model of which appears at the show practically unheralded—wherein the engine base is flanged outwardly to the sides of the frame and in the form of heavy webs which are intended not alone to support the motor, but also to stiffen the frame and absolutely to prevent weaving or vibration. Unlike the larger four cylinder model, the cam shaft is carried in the base, while the actuation of the overhead valves is accomplished by means of tappets and push rods.



ROYAL IGNITION WIRING

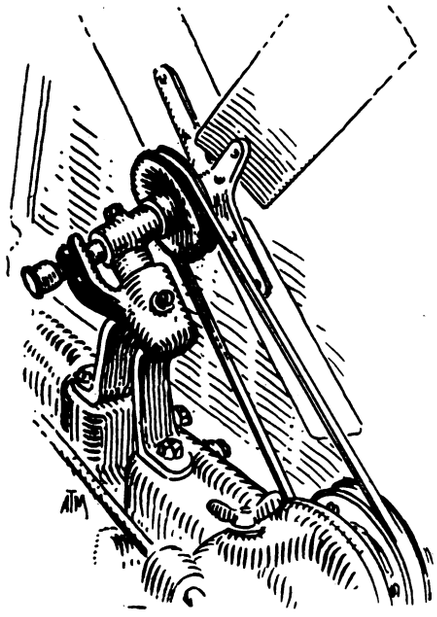
The clutch is of the multiple disc type, as in the larger car, but the transmission other than that is totally different, being of the popular axle-mounted type, but of original design, with a bronze housing for the differential and sliding gear groups. The torque tube is of heavy construction and is given a universal mounting well forward in the frame.

The Stearns line for 1909 is signalized by the adoption of both shaft and chain drive for the larger model which has been the standard up to this time, the two arrangements being optional with the vehicle unchanged in other respects. An even more significant innovation, however, is in the development of the new town car type, which has all the ear marks of its class, together with one or two entirely original and altogether promising features. Thus, the motor is of the block type, the heads and ends of the casting being liberally cored, while the cover plates applied to the heads and the front end are utilized for making the water connections. A unique feature of the unit is in the arrangement of the bed casting, which is cored to form the chamber for the centrifugal water pump, the intake for which, coming from beneath the radiator, is cored through the bed casting. The radiator saddle also forms the front cover for the two-to-one group, and the entire arrangement is at once compact and practical looking. In the rear axle, however, the most unusual feature of the vehicle is to be found. Here the differential housing and change gear casing is secured to a trapezoidal framework which forms the axle proper, the latter being extended at the ends into the regular tubular form, but at the center taking the form of an open frame

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of practically diamond shape, which is tremendously strong in appearance, considering the probable weight of the car. The traction and torsional stresses are absorbed through the medium of the usual tubular housing for the propeller shaft.

In the matter of torque resisting mechanisms, perhaps the most unusual arrangement to be seen is that of the Pope-Hartford Model "S," which has been thoroughly overhauled since last season, but still presents many of its former characteristics. In



POPE-HARTFORD BELT TENSION

this, the use of torque resisting tube and bar effects has been entirely eliminated, and in their place a single connecting push link has been substituted, which extends from the lower side of the differential housing on the rear axle to the lower side of the frame member which supports the gear box. By virtue of its offset with relation to the axle center, this bar acts in opposition to the torsion, while the same position also affords it ample advantage as a driving member for the traction resistance. The motor has been increased in power by a rearrangement of its auxiliaries and sundry minor changes in design, the clutch is of wider face and larger diameter and has been redesigned, the brakes have been enlarged, and the frame has been modified to some extent, gooseneck spring hangers with long rear extensions now being one of its features.

In the Pope-Toledo, now made by the Toledo Motor Co., a new organization which has recently taken over the business of the Pope Motor Car Co., is to be found what is practically a reproduction of the massive, luxurious car of last year, but with a few improvements which are calculated to increase its efficiency in certain respects. Thus, in the design of the crank case, alterations have been made so that the lubrication of the two-to-one gears is now accomplished by means of the regular oiling system, the supply being pumped directly to the gears and the shaft bearings, all overflow being returned to the pump well.

VARIETY IN ELECTRIC VEHICLES.

So quietly have the more recent improvements been brought about in electric vehicle construction that it is difficult to appreciate their real significance. Indeed, it is likely that the average show visitor labors under the impression that there is nothing new about the electric, and also that all electrics are pretty much alike, save in the carriage work. How falsely conceived this notion is, is revealed to the inquisitive passerby in the restaurant at the Garden, where on eight different stands, as many makers display vehicles which resemble one another in few points, except such as relate to the major specifications. In addition to the exhibits here shown, the list of adherents to the electric field is further extended by one maker who displays his cars—the Woods—on the elevated platform in the main arena, while the commercial vehicle section in the basement also boasts several electrics of the heavier type.

In proof of the assertion that novelty does exist in the electric field, despite impressions to the contrary, it is only necessary to study the construction of the Bailey victorias, shown for the first time in New York City, and mounting original features from the wheels, in which the spokes are affixed directly to the rims without the use of a wood felloe, to the steering gear, which though it may be of the common, wheel controlled pattern, is preferred by its makers when revealing an inclined steering post which is used as a tiller, while its upper end is surmounted by a segment of a wheel finished like an ordinary steering wheel, and mounting a short lever by which the motor is controlled just in the same way as the throttle of a gasolene motor is handled.

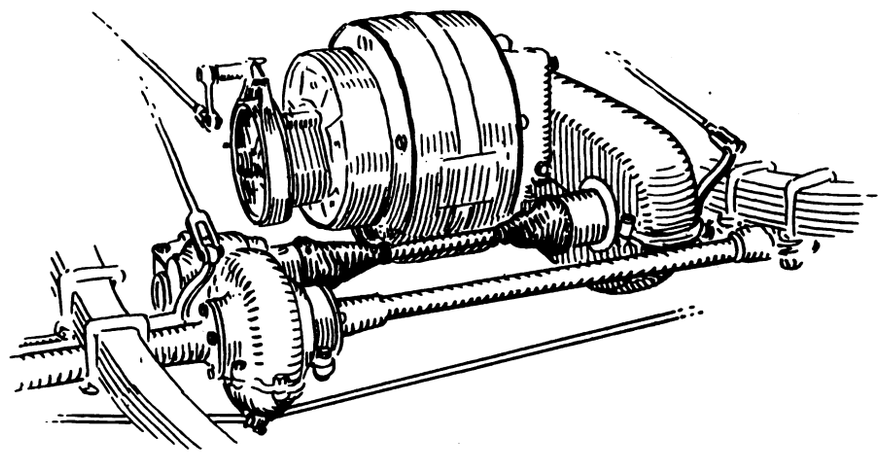
A type of vehicle which reveals less that is out of the ordinary run of electric construction, but which nevertheless is considerably improved over its predecessors, is the Waverley, in which the new Waverley Co. has embodied a large number of the traditions of the old Pope-Waverley design, together with one or two significant additions. Most noteworthy of these is the new arrangement of the power plant and its control system.

The controller, which is of the drum type, now is provided with an automatic interlocking device to safeguard the reverse against accidental operation. Only when the controller lever has been returned to its neutral position can the reverse switch be actuated, when the controller lever itself must be again brought into action to secure a flow of current. The provision of an extra notch for the lever back of the neutral position permits the short-circuiting of the motor through resistance in such a way as to constitute a powerful electric brake, suitable for emergency purposes.

Tendencies to follow the lead of the makers of gasolene machines in the construction of vehicles of the runabout order are in sharp contrast with the more familiar and seemingly no less appropriate types of inside-driven coupe or cab, such as are shown in some form by practically every electric vehicle maker. The familiar electric cab is shown on but one stand—that of the Electric Vehicle Co., other makers, however, showing approaches to it under other names—while in the Studebaker exhibit is displayed in addition to the more stereotyped patterns, a three-seated brake, mounted on solid tires and folowing closely the lines of the horsed equipage which carries the same name.

NOVELTY IN COMMERCIAL CARS.

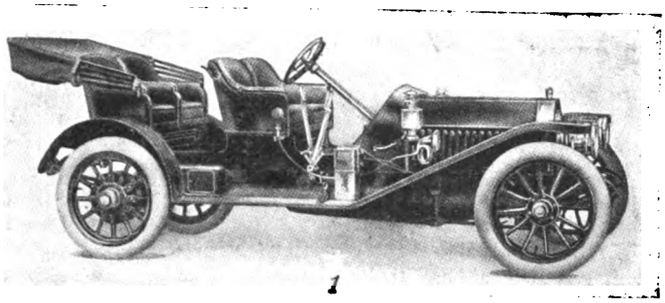
Commercial vehicles at the Garden, while not displayed in great numbers nor in a fashion to attract attention, furnish considerable basis for study and reveal a number of interesting and novel characteristics, to one who has the patience to follow around the outer circle of the basement and discover them all. In the gasolene field, the two exhibits of heavy vehicles are placed side by side. In the Alden Sampson 2nd, display is revealed a single 4-ton truck, which at present is occupying the attention of the builder in place of the gasolene-



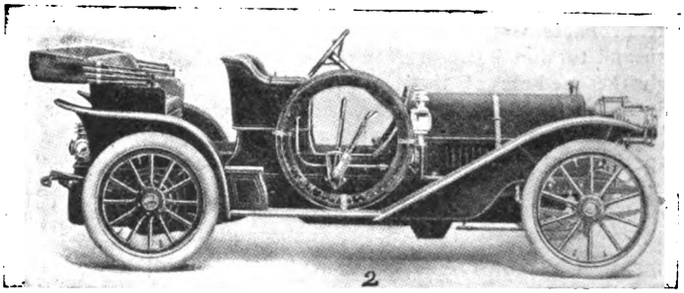
WAVERLEY SHAFT TRANSMISSION

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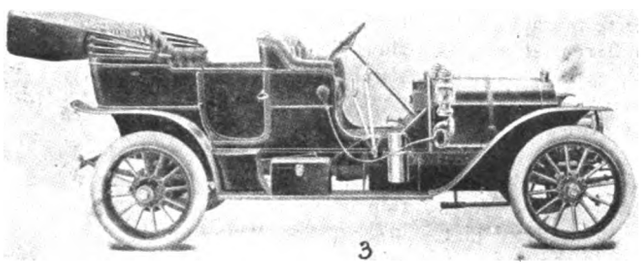
CHARACTERISTIC TYPES OF TONNEAU DESIGN



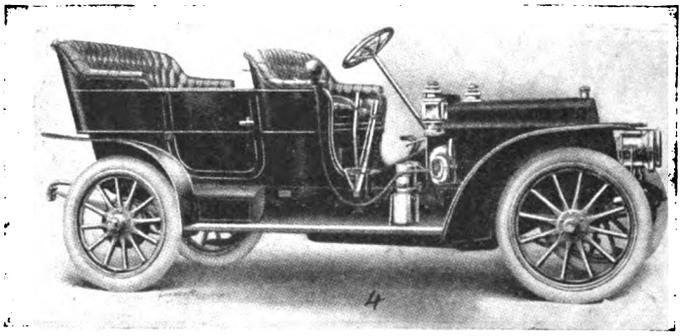
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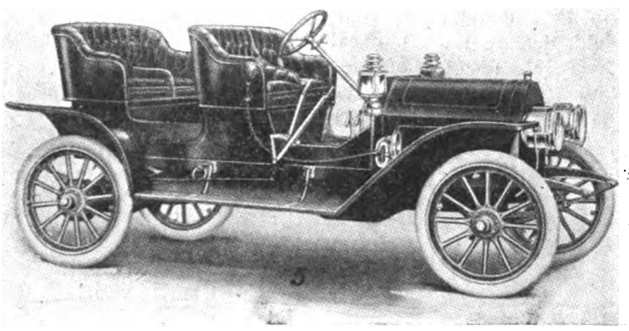
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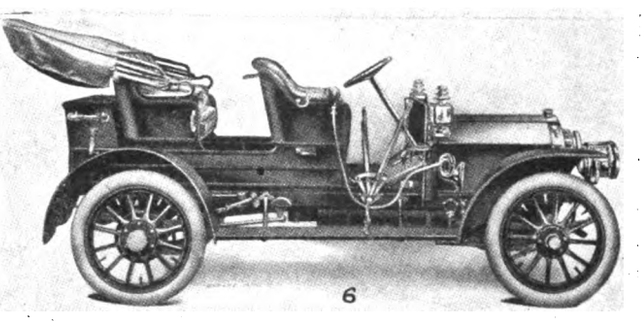
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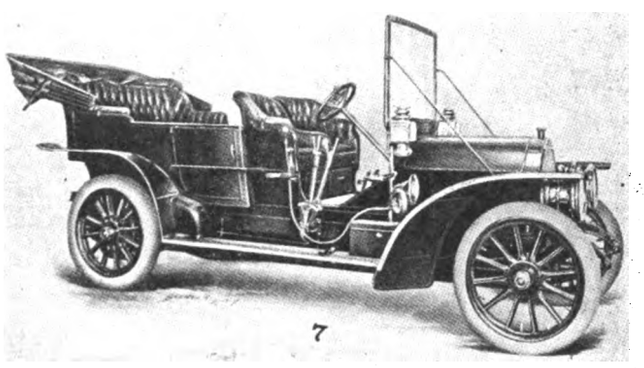
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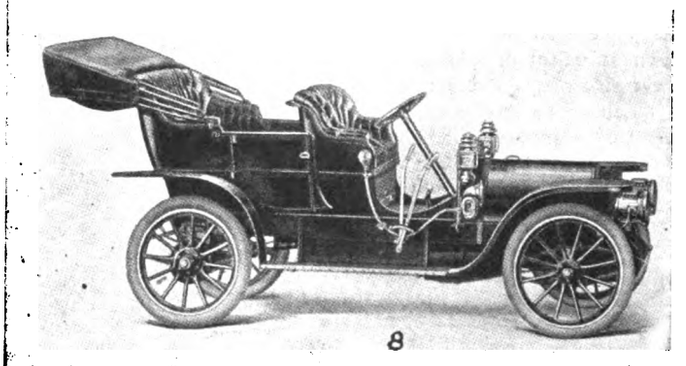
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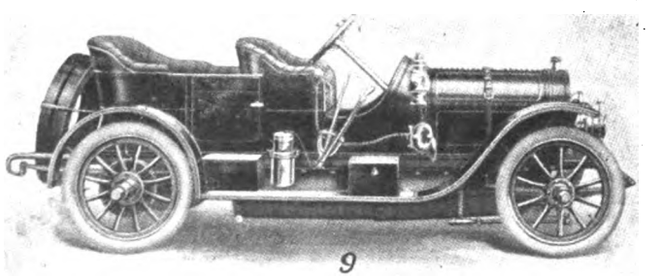
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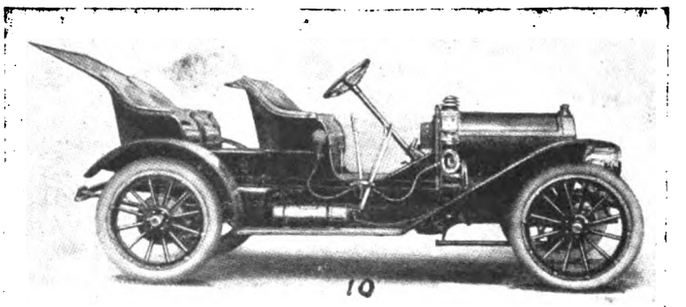
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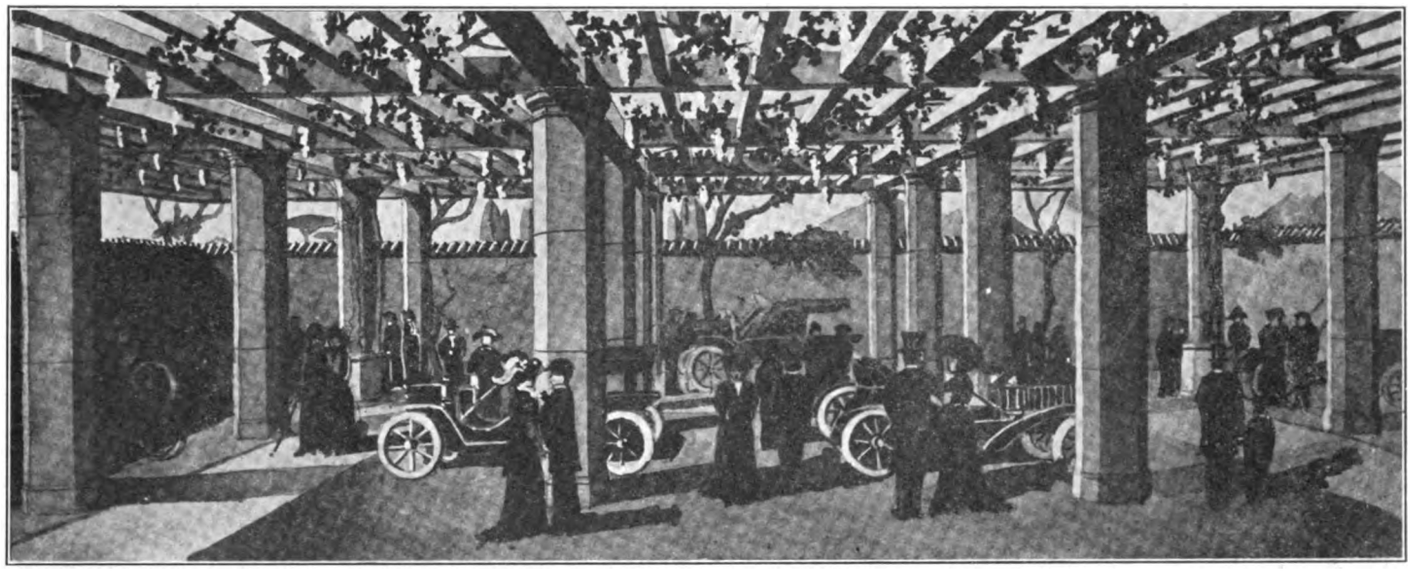


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1, LOCOMOBILE "30" RUNABOUT.
3, APPERSON "O" TOURING CAR.
5, E-M-F. "30" TOURABOUT.
7, MATHESON 40 H.P. TOURING CAR.
9, POPE-HARTFORD "S" SMALL TONNEAU.

2, POPE-TOLEDO XXI RUNABOUT.
4, COLUMBIA 29 H.P. TOURING CAR.
6, STUDEBAKER SUBURBAN ROADSTER.
8, FRANKLIN "D" TOURING CAR.
10, CORBIN "O2" RUNABOUT.

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ELECTRIC VEHICLES STAGED WITH ITALIAN SETTING

electric road train which was shown for the first time a year ago. Original details in its construction are found in the use of a locking device whereby one of the two driving members of the spur type differential gear may be made to slide over into engagement with the pinions which mesh with the other driving member, thereby locking the countershaft ends, and so compelling the rear wheels to rotate together. The arrangement is useful in getting out of mud holes, or for running home "on one side" when a broken chain interferes with the regular operation of the drive. The double side chain drive is entirely enclosed the oil and dust proof housings being made of heavy gauge sheet steel and serving the purpose of distance rods. The chains, it should be remarked, are of the silent type.

In the Hewitt display are shown two vehicles, one of two and one of five tons capacity, the former being an entirely new design. Both are alike in having the pedal controlled, planetary change gear, double side chain drive and other original features. The smaller vehicle has a new, double-opposed motor, so arranged that all its moving parts may be removed from above. It also is noteworthy in that provision is made for heating the mixture on its way to the cylinders and after it leaves the carburetter.

Other gasolene vehicles are the Thomas taximeter cab, which was shown for the first time a year ago; the Franklin, showing in both truck and cab forms—the former having the worm drive feature, and a number of other interesting peculiarities; the Knox, which in addition to a two-cylinder truck, is shown in a high-pressure hose wagon and a chemical fire truck. The Autocar in chassis and delivery form also is in evidence, this being a new development not shown before, and comprising a double-opposed motor, unit power plant mounting, shaft drive and special form of reduction gearing at the rear axle.

In electric commercial vehicles, heavy trucks are shown at the Studebaker and General Vehicle stands, as also are several styles of delivery wagon. The latter display also includes a peculiarly light and trim little package car, rated for a 350-pound load, and the former an ambulance. The Champion Wagon Co. shows a delivery wagon which has as new features a geared reduction and silent chain drive.

Summary of Automobile Exhibits, Including New and Exclusive Features.

Gasolene Cars.

Apperson Bros. Automobile Co., Kokomo, Ind.
Apperson Gasolene Cars.

One 40 horsepower 6-cylinder baby tonneau, one 50-55 horsepower 4-cylinder touring car, one 35-40 horsepower 4-cylinder roadster, one 30-35 horsepower 4-cylinder touring car. Six-cylinder model new this year.

New features: Gear-driven oiler under hood, new valve cap.

Autocar Co., Ardmore, Pa.
Autocar Gasolene Cars.

One 26 horsepower 4-cylinder baby tonneau, one 18 horsepower 2-cylinder town car, one 18 horsepower 2-cylinder victoria, one 18 horsepower 2-cylinder 'bus, one 18 horsepower 2-cylinder chassis.

All models new design this year. Exclusive feature: Floating ring clutch design.

Cadillac Motor Car Co., Detroit, Mich.
Cadillac Gasolene Cars.

Two 30 horsepower 4-cylinder touring cars, one 30 horsepower 4-cylinder roadster, one 10 horsepower 1-cylinder runabout, one 30 horsepower 4-cylinder chassis.

Four-cylinder models entirely new this year. Exclusive features: Individual copper water jackets; special spring suspension construction; universal joint design.

Chalmers-Detroit Motor Co., Detroit, Mich.
Chalmers-Detroit Gasolene Cars.

One 40 horsepower 4-cylinder touring car, one 40 horsepower 4-cylinder runabout, one 30 horsepower 4-cylinder runabout, one 30 horsepower 4-cylinder touring car, one 40 horsepower 4-cylinder chassis, one 30 horsepower 4-cylinder chassis.

Thirty horsepower models shown for first time. Exclusive features: Spring design, motor and change gear details.

Corbin Motor Vehicle Corporation, New Britain, Conn.
Corbin Gasolene Cars.

One touring car, one limousine, one runabout, one baby tonneau, one landaulet, one chassis—all 30 horsepower 4-cylinder.

New features: Front axle construction, foot brakes external contracting, new multiplied leverage in clutch pedal, steering wheel.

Everitt-Metzger-Flanders Co., Detroit, Mich.
E-M-F. Gasolene Cars.

One touring car, one runabout, one baby tonneau, one chassis—all 30 horsepower. First time shown.

Exclusive features: Details of motor and transmission axle.

Electric Vehicle Co., Hartford, Conn.
Columbia Gasolene Cars.

One touring car, one touring runabout, one limousine, one chassis—all 30 horsepower 4-cylinder. Motor new design.

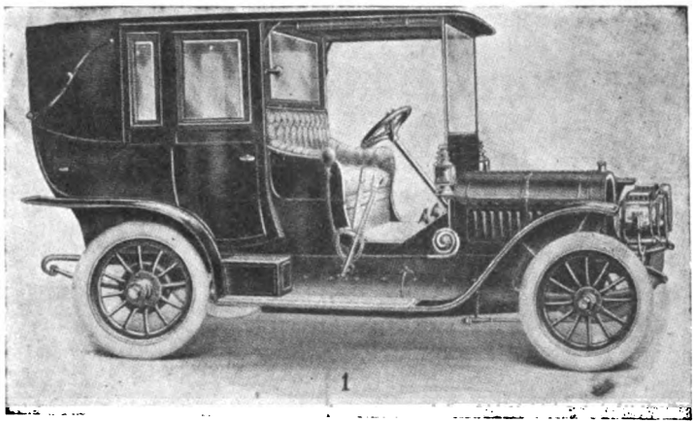
Elmore Mfg. Co., Clyde, O.
Elmore Two-Cycle Gasolene Cars.

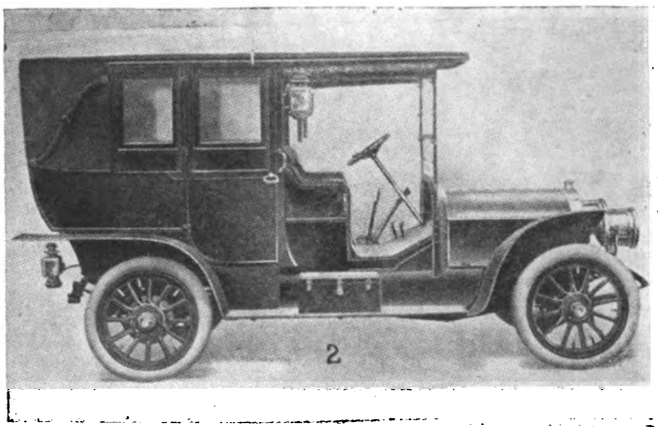
One 35 horsepower 4-cylinder touring car, one 24 horsepower 3-cylinder touring car, one 24 horsepower 3-cylinder limousine, one 24 horsepower 3-cylinder roadster, one 35 horsepower 4-cylinder chassis.

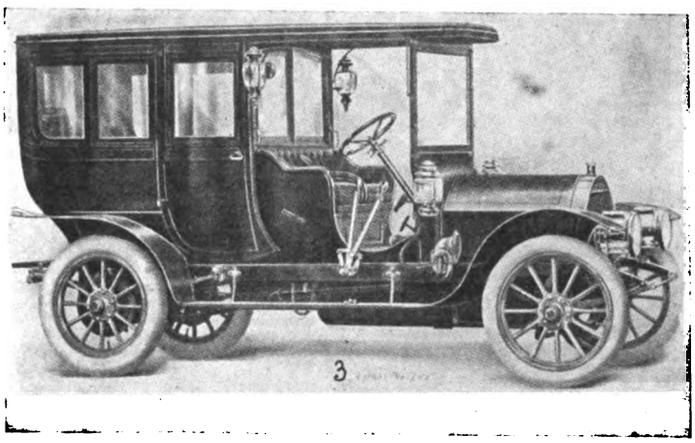
Exclusive features: Only 2-cycle motor shown at Garden,

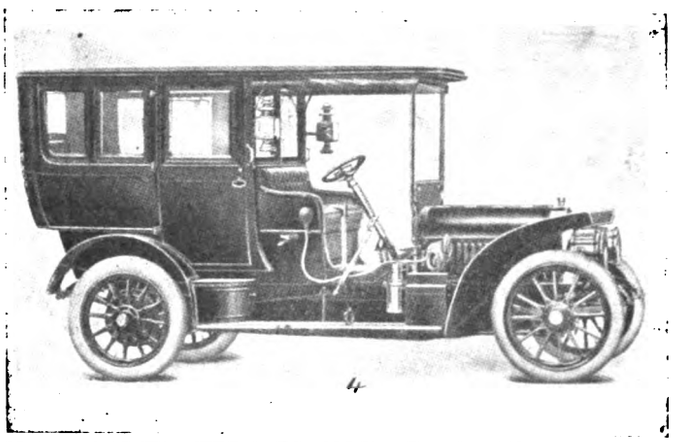
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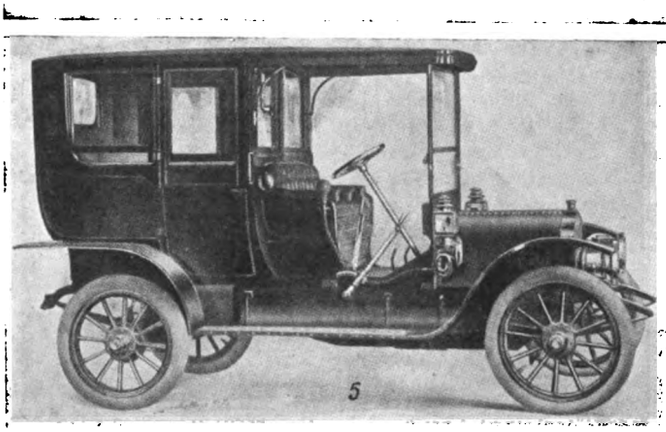
PROMINENT EXAMPLES OF THE LIMOUSINE TYPE

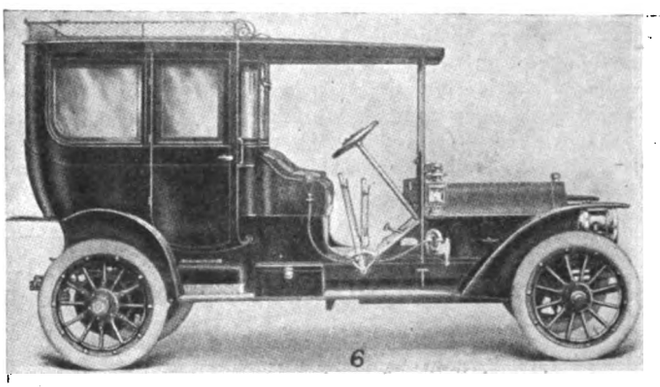


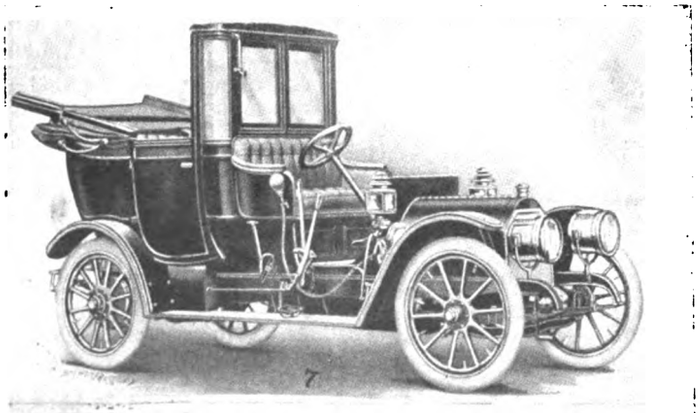


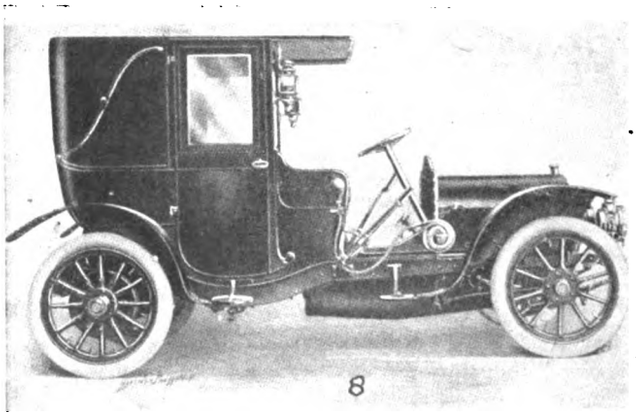












1, POPE-HARTFORD "S" LANDAULET.
3, PIERCE ARROW 40 H.P. SUBURBAN.
5, SELDEN "29" LIMOUSINE.
7, STEARNS 15-30 H.P. LANDAULET.

2, STUDEBAKER "B" LANDAULET.
4, LOCOMOBILE "40" LIMOUSINE.
6, STEVENS-DURYEA "X" LIMOUSINE.
8, PALMER-SINGER XXXII TOWN CAR.

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Franklin Mfg. Co., H. H., Syracuse, N. Y.
Franklin Air-Cooled Gasolene Cars.

One 42 horsepower 6-cylinder touring car, one 28 horsepower 4-cylinder touring car, one 28 horsepower 4-cylinder roadster, one 18 horsepower 4-cylinder town car, one 18 horsepower 4-cylinder touring car, one 18 horsepower 4-cylinder runabout.

New feature: On 1909 models Bosch high-tension ignition only. Exclusive features: Concentric valves, auxiliary exhausts, set spark ignition, wood frame, light construction.

Haynes Automobile Co., Kokomo, Ind.
Haynes Gasolene Cars.

One touring car, one baby tonneau, one runabout, one chassis—all 40 horsepower 4-cylinder.

Exclusive features: Double-banded, water-cooled, original design.

Hewitt Motor Co., New York City.
Palmer & Singer Gasolene Cars.

One 60 horsepower 6-cylinder baby tonneau car, one 30 horsepower 4-cylinder Skimabout, one 30 horsepower 4-cylinder landaulet town car, one 60 horsepower 6-cylinder chassis. First time shown.

Exclusive features: Double drop frame on town car chassis, universal mounting for the radiator, selective gearset design.

Knox Automobile Co., Springfield, Mass.
Knox Gasolene Cars.

Two limousines, one touring car, one close-coupled body touring car, one roadster, one raceabout—all 32-38 horsepower 4-cylinder.

Locomobile Co. of America, Bridgeport, Conn.
Locomobile Gasolene Cars.

One 40 horsepower 4-cylinder touring car, one 40 horsepower 4-cylinder runabout, one 30 horsepower 4-cylinder touring car, one 30 horsepower 4-cylinder limousine, one 30 horsepower 4-cylinder baby tonneau, one 30 horsepower 4-cylinder chassis, and Vanderbilt Cup winner.

New feature: Shaft drive on 30 horsepower models.

Lozier Motor Co., New York City.
Lozier Gasolene Cars.

One 50 horsepower 6-cylinder touring car, one 45 horsepower 4-cylinder limousine, one 45 horsepower 4-cylinder Briarcliff toy tonneau, one 45 horsepower 4-cylinder chassis, one 35 horsepower 6-cylinder chassis.

New features: Oiler, manifold, aluminum steering gear housing, foot accelerator. "Light Six" model entirely new design.

Matheson Motor Car Co., Wilkes-Barre, Pa.
Matheson Gasolene Cars.

One 50 horsepower 6-cylinder touring car, one 45-50 horsepower 4-cylinder touring car, one 45-50 horsepower 4-cylinder limousine, one 50 horsepower 6-cylinder chassis, one 45-50 horsepower 4-cylinder chassis—6 cylinder model new.

New feature: Jump-spark ignition on 6-cylinder model.

Packard Motor Car Co., Detroit, Mich.
Packard Gasolene Cars.

One 30 horsepower 4-cylinder limousine, one 30 horsepower 4-cylinder close-coupled body touring car, one 18 horsepower 4-cylinder landaulet, one 30 horsepower 4-cylinder chassis—18 horsepower model new this year.

Peerless Motor Car Co., Cleveland, O.
Peerless Gasolene Cars.

One touring car, one close-coupled touring car, one limousine, one runabout, one chassis—all 30 horsepower 4-cylinder.

Pierce Co., The George N., Buffalo, N. Y.
Pierce-Arrow Gasolene Cars.

One 60 horsepower 6-cylinder limousine, one 48 horsepower 6-cylinder limousine, one 36 horsepower 6-cylinder brougham, one 36 horsepower 6-cylinder runabout, one 48 horsepower 6-cylinder chassis—48 horsepower model new.

New features: Gear-shift control changed from post to side levers, twin cylinder castings, redesign of valve mechanism and piping.

Pope Manufacturing Co., Hartford, Conn.
Pope-Hartford Gasolene Cars.

Two touring cars, one "pony tonneau," one roadster, one limousine—all 40 horsepower 4-cylinder.

New features: Clutch, brakes and torsion group; engine redesigned.

Pope Motor Car Co., Toledo, O.
Pope-Toledo Gasolene Cars.

One touring car, one folding brougham, one close-coupled body touring car, one roadster—all 50 horsepower 4-cylinder.

New features: Oiling system improved, minor changes in chassis.

Royal Motor Car Co., Cleveland, O.
Royal Tourist Gasolene Cars.

Two touring cars, one limousine, one chassis—all 48 horsepower 4-cylinder. New design this year.

New features: Self-starting device, ignition wiring, manifold, dust-pan in front of radiator.

Selden Motor Vehicle Co., Rochester, N. Y.
Selden Gasolene Cars.

One touring car, one close-coupled body, one limousine, one roadster, one chassis—all 29 horsepower 4-cylinder.

New features: Motor design new, model larger than last year.

Simplex Automobile Co., New York City,
Simplex Gasolene Cars.

One touring car, one baby tonneau, one chassis—all 50 horsepower 4-cylinder.

Stearns Company, F. B., Cleveland, O.
Stearns Gasolene Cars.

One 30-60 horsepower 4-cylinder roadster, one 30-60 horsepower 4-cylinder touring car, one 15-30 horsepower 4-cylinder touring car, one 15-30 horsepower 4-cylinder limousine, one 15-30 horsepower 4-cylinder chassis, one 30-60 horsepower 4-cylinder chassis. The 15-30 horsepower models are new design, shaft-drive; 30-60 horsepower cars shown in both shaft and chain-drive models.

Exclusive features: Block motor, transmission axle design.

Stevens-Duryea Co., Chicopee Falls, Mass.
Stevens-Duryea Gasolene Cars.

One 40 horsepower 6-cylinder touring car, one 35 horsepower 6-cylinder limousine, one 24 horsepower 4-cylinder touring car, one 24 horsepower 4-cylinder runabout, one 24 horsepower 4-cylinder limousine, one 40 horsepower 6-cylinder chassis. The 24 horsepower car new design.

Exclusive features: Three-point suspension system for power plant; carburetter design, self-finding progressive gear shift.

Studebaker Automobile Co., South Bend, Ind.
Studebaker Gasolene Cars.

One 40 horsepower 4-cylinder touring car, one 40 horsepower 4-cylinder limousine, one 40 horsepower 4-cylinder toy tonneau, one 30 horsepower 4-cylinder "Suburban," one 40 horsepower 4-cylinder chassis.

New features: Bosch magnetic spark plugs, original design wicker body on "Suburban" model, new automatic air valve, redesign of steering gear.

Thomas Motor Co., E. R., Buffalo, N. Y.
Thomas Gasolene Cars.

One 70 horsepower 6-cylinder toy tonneau, one 40 horsepower 6-cylinder touring car, one 60 horsepower 4-cylinder limousine, one 60 horsepower 4-cylinder touring car, one 40 horsepower 6-cylinder chassis, and New York-Paris race winner. Light 6-cylinder model new design.

New features: Clutch enclosed, 3-plate type; new model, triple cylinder engine units, axle-mounted change gear, double ignition with duplicate spark plugs.

Walter Motor Car Co., Trenton, N. J.
Walter and Roebling-Planche Gasolene Cars.

Walter cars: One 50 horsepower 4-cylinder touring car, one 20 horsepower 4-cylinder town car, one 50 horsepower 4-cylinder chassis, all new models.

One Roebling-Planche 100 horsepower 4-cylinder racer, new model.

New features: Radiator mounting, torque group redesigned, automatic ball valves in carburetter.

Winton Motor Car Co., Cleveland, O.
Winton Gasolene Cars.

One touring car, one landaulet, one toy tonneau, one roadster, one chassis—all 48 horsepower 6-cylinder, and one 60 horsepower 6-cylinder touring car. Light car new design.

Exclusive features: Carburetter design, self-starting gear.

White Company, The, Cleveland, O.
White Steam Cars.

Two 40 horsepower touring cars, one 40 horsepower limousine, one 40 horsepower runabout, one 20 horsepower touring car, one 20 horsepower landaulet, one 20 horsepower chassis. The 20 horsepower models and 40 horsepower runabout design new this year.

New feature: Pressed steel frame in 40 horsepower runabout.

Electric Pleasure Vehicles.

Anderson Carriage Co., Detroit, Mich.
Detroit Electric Cars.

One coupe, one victoria, one brougham and one chassis, 24 cells, and one runabout, 16 cells.

Babcock Electric Carriage Co., Buffalo, N. Y.
Babcock Electric Cars.

One town car, 42 cells; one coupe, 36 cells; one victoria, 36 cells; one runabout, 40 cells, one Stanhope, 36 cells, one runabout, 36 cells, one chassis, 36 cells. Town car, coupe and light runabout new models.

Bailey & Co., S. R. (Inc.), Amesbury, Mass.
Bailey Electric Cars.

Two victoria phaetons, 30 cells; one model with steering wheel and one with lever steer.

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Exclusive features: Lever steering construction; power control on segment of wheel, automatically shut off by foot brake; underslung battery with 3-point suspension.

Baker Motor Vehicle Co., Cleveland, O.
Baker Electric Cars.

One roadster, 40 cells; one runabout, 30 cells; one town car, 30 cells; one extension front coupe, 28 cells; one victoria, 24 cells; one runabout chassis, 30 cells. Victoria, coupe and roadster models are new design.

Exclusive feature: Non-sparking commutator; imported ball-bearings in motor.

Electric Vehicle Co., Hartford, Conn.
Columbia Electric Cars.

One brougham, 40 cells; one victoria, 20 cells. Victoria new design.

Exclusive features: Live rear axle design and enclosed transmission.

Rauch & Lang, Cleveland, O.
R. & L. Electric Cars.

Two Stanhopes, one extension coupe, one runabout, one chassis—all 24 cells and all new models.

Studebaker Automobile Co., South Bend, Ind.
Studebaker Electric Cars.

One high speed Stanhope, 36 cells; one victoria phaeton, 28 cells; one runabout, 24 cells; one Stanhope, 24 cells. Stanhope and victoria models new this year.

Exclusive features: Special safety switch, one-third of battery in front and two-thirds in rear, four speeds forward and four reverse.

Waverley Co., The, Indianapolis, Ind.
Waverley Electric Cars.

Two town cars, two runabouts, one Stanhope, all 30 cells. Town cars are new models.

Exclusive features: Automatic safety, control system silent chain and gear transmission.

Woods Electric Co., Chicago, Ill.
Woods Electric Cars.

Two inside operated broughams, 2 victorias—all 40 cells.

Exclusive features: Individual chain drive adjustment, completely housed; imported ball bearings throughout; unit assembly power plant, easily removable.

Commercial Vehicles.

Autocar Co., Ardmore, Pa.
Autocar Gasolene Cars.

One 18 horsepower 2-cylinder chassis, one 18 horsepower 2-cylinder delivery wagon. New design this year.

Exclusive features: Unit power plant and rear axle construction.

Baker Motor Vehicle Co., Cleveland, O.
Baker Electric Cars.

One 1-ton capacity, 42 cells, commercial truck chassis.

Exclusive features: Non-sparking commutator; imported ball bearing motor.

Champion Wagon Co., Oswego, N. Y.
Champion Electric Wagons.

One 1,000 lbs. capacity, 40 cells, delivery wagon, new design.

New features: Gear reduction with Morse silent chain; annular ball bearings.

Franklin Co., H. H., Syracuse, N. Y.
Franklin Air-cooled Gasolene Cars.

One 18 horsepower 4-cylinder, 1,000 lbs. capacity, delivery wagon; one 18 horsepower 4-cylinder, 2-ton stake truck; one 18 horsepower 4-cylinder taximeter cab—all air-cooled and all new designs this year.

Exclusive features: Worm gear drive in axle, wood sills, concentric valve, air-cooled motor with auxiliary exhaust.

General Vehicle Co., Long Island City, N. Y.
Electric Trucks.

One 3½-ton truck, one 2-ton truck, one 1-ton truck, one 1,000-lbs. delivery wagon, one 350-lbs. delivery wagon.

New features: Pressed steel frame, Morse chains, P. & S. battery.

Hewitt Motor Co., New York City.
Hewitt Gasolene Trucks.

One 25 horsepower 2-cylinder 2-ton chassis, one 28 horsepower 4-cylinder 5-ton truck. Two-cylinder model new design.

Exclusive features: Planetary transmission, removable cylinders; block tires.

Knox Automobile Co., Springfield, Mass.
Knox Gasolene Cars.

One 48 horsepower 4-cylinder high pressure hose wagon, one 36 horsepower 4-cylinder chemical combination wagon, one 20 horsepower 2-cylinder 3,000-lbs. truck. Four cylinder models new this year.

Sampson Mfg. Co., Alden, Pittsfield, Mass.
Alden Sampson Gasolene Trucks.

One 40 horsepower 4-cylinder 4-ton truck, new design.

Exclusive features: Differential lock, enclosed chains.

Studebaker Automobile Co., South Bend, Ind.
Studebaker Electric Trucks.

One 5-ton truck, one 2,500-lbs. express wagon, one 1,500-lbs. delivery wagon, one 850-lbs. delivery wagon, one 1,500-lbs. capacity station bus, one 800-lbs. ambulance.

Thomas Motor Co., E. R., Buffalo, N. Y.
Thomas Gasolene Taximeter Cabs.

Two 16-20 horsepower 4-cylinder taxicabs.

Exclusive features: Block type motor, multiple disc clutch.

MOTORCYCLES AND THEIR ACCESSORIES SEPARATELY ARRAYED.

American Motor Co., Brockton, Mass., M-M—Three 6 horsepower 2-cylinder, five 3½ horsepower single cylinder motorcycles; one 3½ horsepower single cylinder side car.

Aurora Automatic Machinery Co., Aurora, Ill., Thor—Two 3 horsepower single cylinder, one 2¼ horsepower single cylinder, one 3¼ horsepower single cylinder, two 6 horsepower 2-cylinder motorcycles.

Auto-Bi Co., The, Buffalo, N. Y., Greyhound—Two 3 horsepower single cylinder motorcycles.

Consolidated Mfg. Co., Toledo, O., Yale—Two 3½ horsepower single cylinder motorcycles.

Crouch Motor Co., Stoneham, Mass., Crouch—Two 3 horsepower single cylinder motorcycles.

Curtiss Mfg. Co., G. H., Hammondsport, N. Y., Curtiss—One 3 horsepower single, one 3½ horsepower single, one 6 horsepower 2-cylinder, one 7 horsepower 2-cylinder, one 10 horsepower 3-cylinder motorcycles.

Excelsior Supply Co., Chicago, Ill., Excelsior—Three 3½ horsepower single cylinder motorcycles.

Harley-Davidson Motor Co., Milwaukee, Wis., Harley-Davidson—Two 4 horsepower single, one 7 horsepower 2-cylinder motorcycles.

Hendee Mfg. Co., Springfield, Mass., Indian—Two 2¾ horsepower single, two 3½ horsepower single, four 5 horsepower 2-cylinder, one 7 horsepower 2-cylinder motorcycles.

Merkel-Light Motor Co., Pottstown, Pa., Merkel and Light motorcycles—Two 2¼ horsepower single cylinder Light motorcycles, one 3½ horsepower single cylinder Light, two 3½ horsepower single cylinder Merkel, one 7 horsepower 2-cylinder Merkel motorcycles.

N. S. U. Motor Co., New York City, N. S. U.—One 3 horsepower single, one 3 horsepower 2-cylinder, one 1½ horsepower single, one 3½ horsepower single, one 4 horsepower single, one 6 horsepower 2-cylinder motorcycles; one 6 horsepower 2-cylinder tri-car, one 6 horsepower 2-cylinder side car.

National Sales Corporation, New York City, Peugeot—One 5-7 horsepower 2-cylinder Simplex-Peugeot; one 5-7 horsepower 2-cylinder All-Right motorcycle.

New Era Gas Engine Co., Dayton, O., New Era—One 3½ horsepower single cylinder motorcycle.

Ovington Motor Co., New York City, F. N.—One 5 horsepower 4-cylinder, one 2¼ horsepower single cylinder motorcycles.

Pierce Cycle Co., Buffalo, N. Y., Pierce—Three 6-7 horsepower 4-cylinder motorcycles.

Reading Standard Co., Reading, Pa., R-S—Three 3½ horsepower single, one 4 horsepower single, one 6 horsepower 2-cylinder, one 7½ horsepower 2-cylinder motorcycles; one 6 horsepower 2-cylinder chair car, one 4 horsepower single cylinder non-convertible delivery car.

Reliance Motorcycle Co., Owego, N. Y., Reliance—One 2 horsepower single, one 3 horsepower single, one 3½ horsepower single, one 5 horsepower 2-cylinder, one 7 horsepower 2-cylinder motorcycles.

Royal Motor Co., Worcester Mass., Royal Pioneer—One 4-4½ horsepower single cylinder motorcycle.

Walton Motor Co., Inc., Lynbrook, L. I., Midget Bi-Car—Two 3½ horsepower single cylinder Bi-Cars.

Motorcycle Accessories.

Baker & Co., F. A., New York—Supplies.

Eclipse Machine Co., Elmira, N. Y.—Coaster brakes.

Mesinger Mfg. Co., H. & I., New York City—Saddles.

Motor Car Equipment Co., New York City—Spark plugs and supplies.

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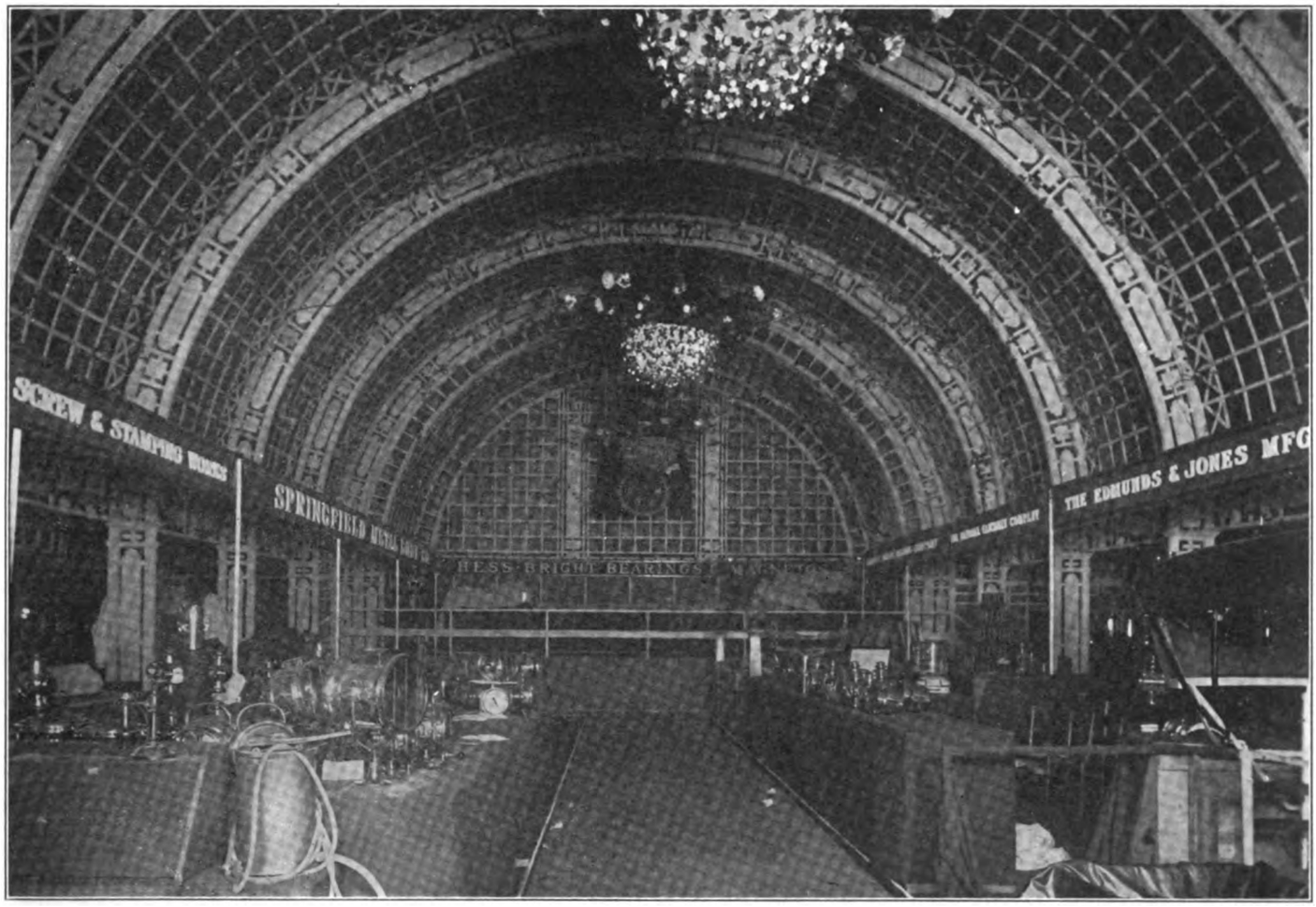
Where Progress in Tires, Parts and Accessories is Shown

When a big glass globe broke in the concert hall and let loose a heavy cascade of steel balls of all sizes, which tumbled to the floor with a noise like magnified musketry, a crowd gathered to see what would happen next. Only a few, observing the shattered remains of the globe, realized that the incident was accidental, the weight of the balls having proved too much for the containing glass. The others assumed that the racket and shower of bearings was but a preliminary to some demonstration stunt, and it required explanation on the part of the attendants at the Standard Roller Bearing Co.'s space to convince them that nothing more of a sensational character might be expected. All of which was very natural because of the very extraordinary things the exhibitors in the accessory section are doing to attract the visitors' attention and show off the products.

From frivolous fittings such as silver eagles for radiator caps, through the range of accessories to the vital and important things such as chains, the exhibit of Charles E. Miller, New York, in the second gallery, presents lines which represent the ripest experience in the selection of goods that will meet both popular demand and whatever technical requirements their nature imposes. The celebrated Brampton chains, for which Miller is the American distributor, are but one line of foreign novelties which are disclosed at the Miller space. A gasolene searchlight, of 15,000 candlepower, in which the fuel is utilized to heat an incandescent mantle, is a French importation which indicates the Miller proclivity for promptly bringing over the latest and best of Europe's accessory offerings. The general array of horns, lamps, plugs, tire supplies, clocks, jacks and fittings shown is the subject of interest and study by both dealers and retail purchasers.

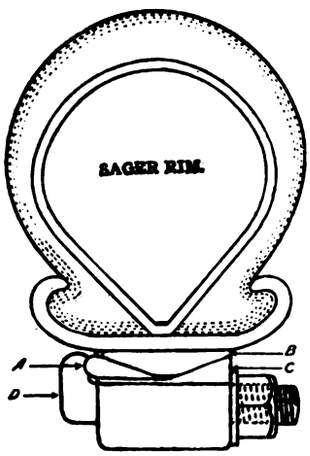
At the space of the Motor Car Equipment Co., of New York, which is located in the basement, imported specialties have a prominent place, the list of articles on view including Pirelli ignition cable, Peugeot chains, Blanchard horns, French plugs, English pumps, the latest foreign universal pump connections, and a host of minor novelties. The domestic goods predominate, however, and include, beside standard lines of well known accessories, a number of new things which have not been shown before.

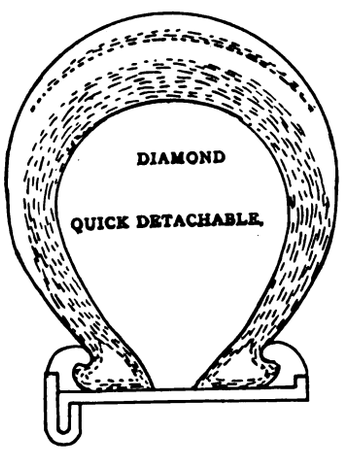
Rear signals for cars, to indicate to the traffic behind which way the driver intends to turn, are shown at two spaces, and represent the newest ideas in this direction. In the "Isti", shown by A. R. Mosler & Co., the device takes the form of a revolvable disc which is fitted over the rear lens of the tail lamp. The disc is perforated with the words "right", "left", and "stop" and by means of a flexible wire connection from the driver's seat the disc may be turned to bring the proper word into the horizontal position so that it may be read. To provide for daylight service, the disc is crossed with a broad arrow which points to the right or left and to the upward position for "stop". The Dimond electric traffic signal, staged by the Dimond Igniter Co., is a black box affixed to the rear of the vehicle. For the three signal positions three push buttons are arranged ready to the driver's hand. Semaphore arms swing up from the open sides of the box in accordance with which button is pressed, the blades bearing the signal of "right", "left", or "stop".

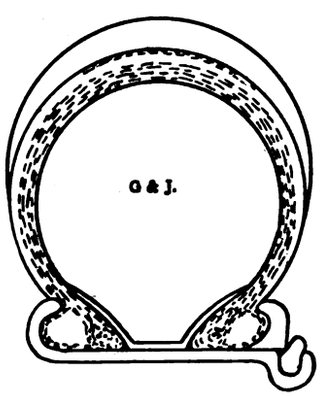


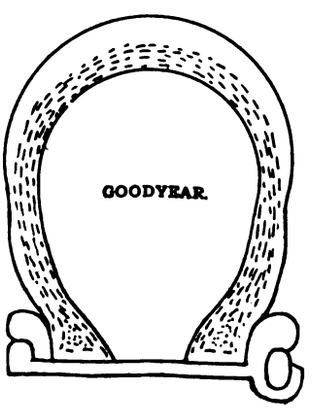
ACCESSORIES UNDER THE RED ROSE TRELLIS IN CONCERT HALL

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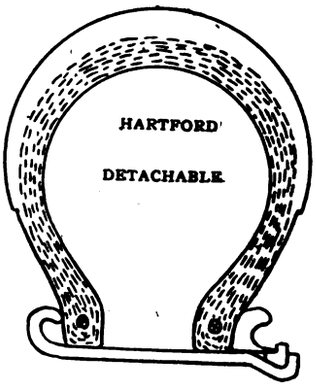
Except for the fact that on Wednesday the exhibit of the Michelin Tire Co., of Milltown, N. J., moved out bag and baggage from the show, because the space in which Michelin tires were obliged to appear was not worthy of the reputation of the product, the tire representation is very complete. The Diamond Rubber Co., of Akron, O., exhibits not only the various types of Diamond tires, including the new "Diamond grip" tread, but also stages the improved Diamond demountable rim. The Goodyear quick acting rim and the new air bottles form supplementary exhibits for the display of Goodyear tires at the space of the Goodyear Tire & Rubber Co., of Akron. The peculiar tread on the new Firestone non-skid tires, formed of raised rubber letters, marks them conspicuously not only in the booth of the Firestone Tire & Rubber Co., Akron, but also on the many show cars of which they are equipment. At the Firestone stand these are but a small part of the total showing, which comprises a full line of pneumatics and solids, not to mention the Firestone demountable rim.

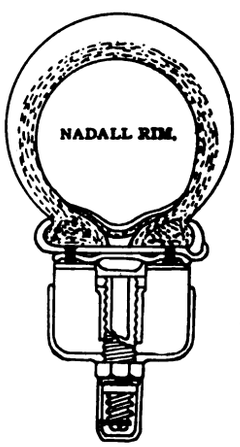
Continental tires of the several types are the base of the display of the Continental Caoutchouc Co., of New York, but the Continental demountable rim is featured, also. The new "universal, standard, quick detachable rim" is offered not only by the Hartford Rubber Works Co., of Hartford, Conn., but by Morgan & Wright, of Detroit, Mich., and the G & J Tire Co., of Indianapolis. Each of these exhibitors, however, has an individual and distinctive line of tires to offer. Quite a number of demountable rims of ingenious construction are presented by other than tire manufacturers, including the Sager, made by the J. H. Sager Co., of Rochester, N. Y., and the Nadall and Dow types In the tire accessories the Weed chains of the Weed Chain Tire Grip Co., New York, appear as proved successes, while A. C. Bricrson, of Brookings, S. D., is a newcomer, with a line of non-skid treads which may be used over the regular tires.

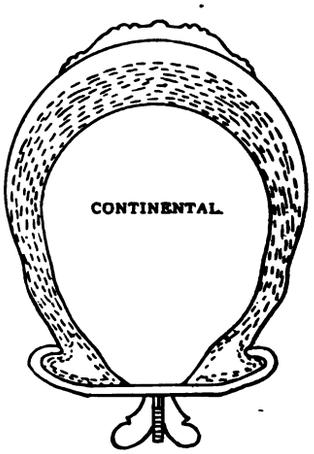
Radically different from all the other ignition systems revealed at the Garden is the Seeley system, mounted by the High Frequency Ignition Coil Co., of Los Angeles, Cal. Each cylinder of the motor, under the Seeley arrangement, is equipped with an individual coil supplying high tension current to the spark plug. The coils are small affairs, very short and only about three inches in diameter. They have no iron cores, but utilize simple solenoid windings. A distributer directs the primary current to each coil in turn. One of the features of the system, however, is the fact that the primary current has a coil and condenser of its own, which may be mounted on the dash or elsewhere. This coil has an iron core and also a condenser, the action of the latter providing a mysterious alternating effect which influences the unit secondary coils at the cylinders to give a very remarkable discharge. No vibrator is used, and it is claimed for the system that great simplification and current economy are secured.

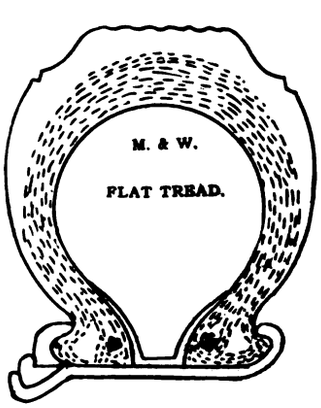
Magnetos are scattered all through the accessory division, the more famous ones including those of Bosch, Splitdorf, Remy, Heinze, Bretz's U. & H., and Witherbee's Volta, not to mention the recent productions of Wheeler and Pittsfield. A large space is taken by the Bosch Magneto Co., New York, to stage the Bosch line in both high and low tension magnetos. The Splitdorf Laboratory, New York, has coils, plugs and a demonstration outfit, supplementing its magneto, and the space of the Witherbee Igniter Co., New York, contains all manner of coils, timers, distributers, plugs, accumulators and handy lamps in addition to the Volta. Eight times as big as regular size, the huge ignition outfit put up by the Heinze Electric Co., of Lowell, Mass., attracts a generous share of attention, and serves to make plain the merits of the Heinze plugs, switches and coils. The neat little steering wheel switch, produced by the Connecticut Telephone & Electric Co., of Meriden, Conn., is attached to a real steering wheel so that its action may be apparent. It permits the ignition circuit to be controlled for either battery or magneto or both, without reaching down to the coil. The other "Connecticut" specialties, such as coils, kick switches, meters and terminals have advantageous settings.

For the Garden show a new display arrangement for Stewart speedometers and clocks has been prepared, presenting all the models in a row under powerful electric light. The Jones speedometers, clocks, annunciators and taximeters have the benefit of a conspicuous

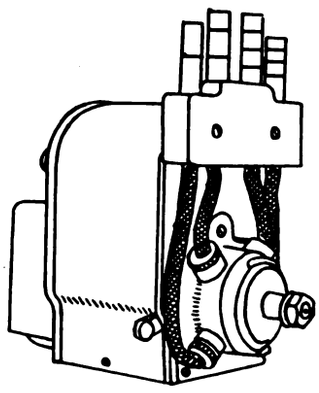




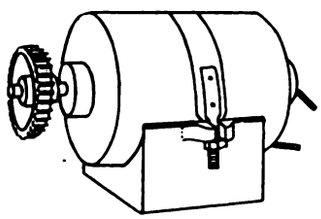




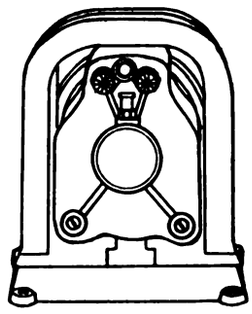
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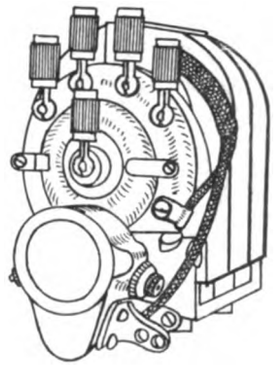
PITTSFIELD.



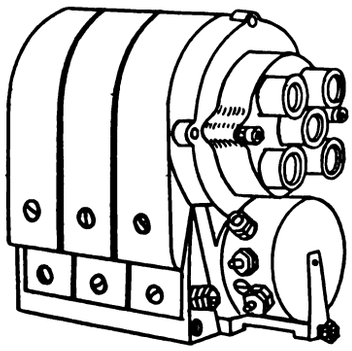
HEINZE.



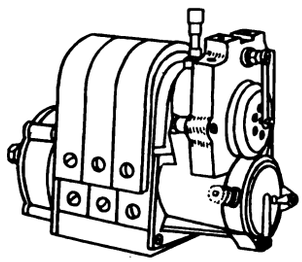
WHEELER.



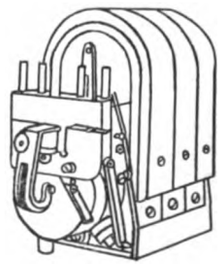
REMY.



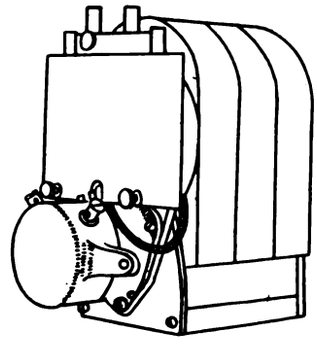
SPLITDORF.



U. & H.



BOSCH.



VOLTA.

VARIOUS IMPROVEMENTS IN MAGNETO DESIGN

location, while nearby the Warner autometers are disclosed in complete and instructive array.

In lamps the Badger Brass Mfg. Co., of Kenosha, Wis., and New York City, are among the best known and prominent exhibitors, the Solar line having a variety of types extending from small oil and electric illuminators to the large searchlights equipped with the Solar eclipsing device. The Wridgway "no glare" shade for headlights is effectively demonstrated at the Gray & Davis space, in a lamp containing a brilliant electric bulb. The numerous styles of Gabried horn made by the Gabriel Horn Mfg. Co., of Cleveland, O., comprise the main feature of the company's appeal to the public and trade, but the Gabriel shock absorber is also represented, with 1909 improvements.

Parts are heavy factors at the show, the list including the axles and bearings of such concerns as the Timken Roller Bearing Axle Co., the Standard Roller Bearing Co., and the American Ball Bearing Co., while the J. S. Bretz Co., of New York, offers the imported F. & S. annular ball bearings. Castings of almost every conceivable type, so far as motor car construction is concerned, are to be found in aggregate of such exhibits as those of the William Cramp & Sons Ship & Engine Building Co., the Manufacturers' Foundry Co. and the large list of others with showings of casting work in special metals. Radiators have exemplification in the Briscoe, domestic chains in the Diamond, while the offerings of tools and specialties, such as Perfection wrenches, Columbia lock nuts, Chandler nameplates and the like, gives proof of the wide ramifications and detail amplification which is accompanying the industry.

Flashy medals, buttons, picture books, calendars and similar remembrances reward the souvenir hunters and advance the cause of the stand attendants with the ladies, while the small boys find great delight in the paper "snappers" which when swung quickly in the air give off a report like a fat firecracker and which are given with a free hand at one of the third tier box exhibits. To members of the trade several concerns are making distributions of valuable and characteristic tokens. In the comfortable enclosure of their own show spaces not a few of the accessory people, with their friends, try at times to steal a concealed smoke, but the severe discipline in this respect that is apparent at the front entrance, where all lighted cigars and cigarettes must be thrown away, extends to the farthest recesses of the galleries, and sly smoking attempts are promptly stopped.

The complete list of accessory exhibitors is as follows:

ACCESSORY EXHIBITS.

A-Z Co., The, New York City—Hoods, radiators and tanks.

Ajax-Grieb Rubber Co., New York City—Ajax tires.

Allen Auto Specialty Co., New York City—Tire jackets and specialties.

Allers Co., H. A., New York City—Solarine Metal Polish.

American Ball Bearing Co., Cleveland, O.—Ball bearings and axles.

American Electrical Novelty & Mfg. Co., New York City—Ever Ready Batteries, lamps and tire specialties.

American Electric Fuse Co., New York City—Igniter and magnet wire.

American Thermos Bottle Co., New York City—Thermos bottles.

American Thermo-Ware Co., New York City—Goggles, hydrometers.

American & British Mfg. Co., Bridgeport, Conn.—Motors and parts.

Anderson Forge Machine Co., Detroit, Mich.—Crankshafts, gears.

Apple Electric Co., Dayton, O.—Ignition systems.

Atlas Rubber Co., Buffalo, N. Y.—Non-puncturable inner cases.

Atwater-Kent Mfg. Works, Philadelphia, Pa.—Igniters and timers.

Atwood-Castle Co., Amesbury, Mass.—Lamps.

Austro-American Separator Co., Cleveland, O.—Gasolene funnels.

Autocoil Co., Jersey City, N. J.—Spark coils.

Auto Improvement Co., New York City—Self starting devices and motor specialties.

Auto Pump Co., Springville, N. Y.—Pumps.

Auto Supply Mfg. Co., Brooklyn, N. Y.—Horns, tubing and brass specialties.

Auto Tire Inflating Co., Brooklyn, N. Y.—Wyman tire tanks.

Avery Portable Lighting Co., Milwaukee, Wis.—Gas tanks.

Badger Brass Mfg. Co., New York City and Kenosha, Wis.—Solar lamps and acetylene generators.

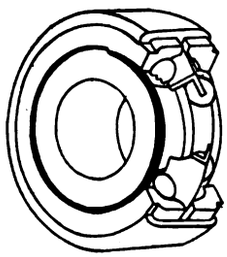
Baker Mfg. Co., New Haven, Conn.—Spark plugs.

Baldwin Chain and Mfg. Co., Worcester, Mass.—Baldwin chains and recoil check.

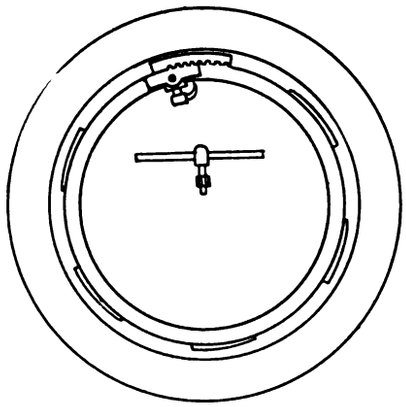
Balzer, Gus, New York City—Bouquet holders, connecters, generators and supplies.

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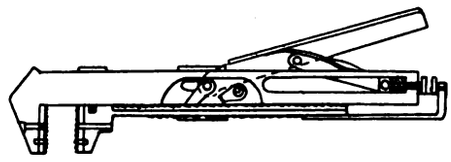
SOME OF THE REFINEMENTS IN ACCESSORIES



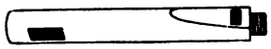
TWO-IN-ONE BEARING.



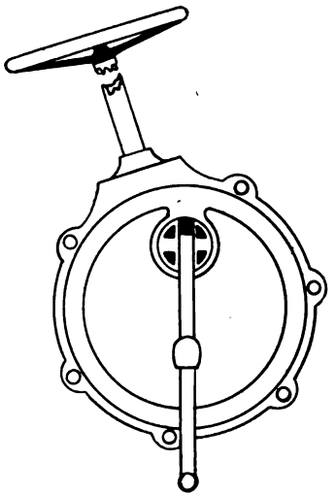
DOW DEMOUNTABLE RIM.



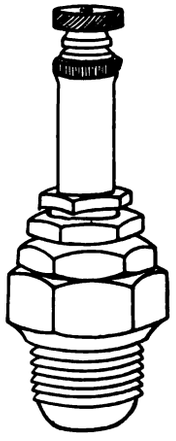
PERFECTION WRENCH.



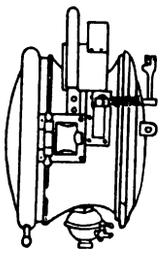
GABRIEL WHISTLE.



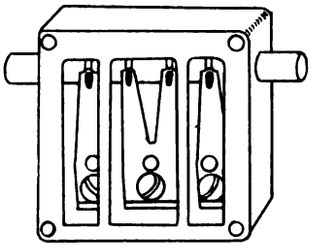
BALDWIN STEERING GEAR.



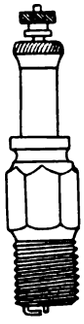
WICO.



SOLARCLIPSE.



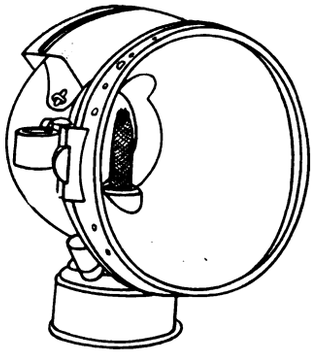
MOTSINGER PLUG SWITCH.



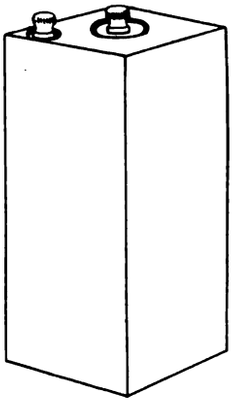
STA-RITE.



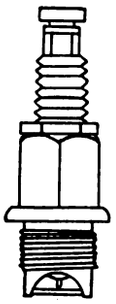
BILLINGS & SPENCER.



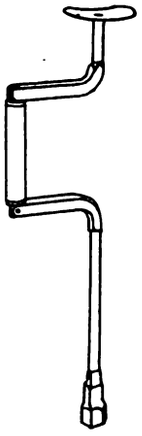
MILLER'S GASOLENE LAMP.



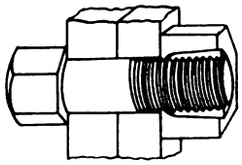
BUNNELL DRY BATTERY.



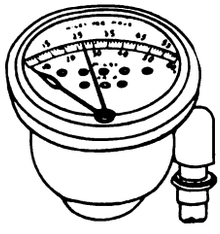
HEINZE.



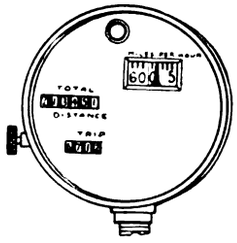
TITUS CLE.



COLUMBIA LOCK NUT



STEWART



WARNER.



JONES.



FLOWER HOLDER.

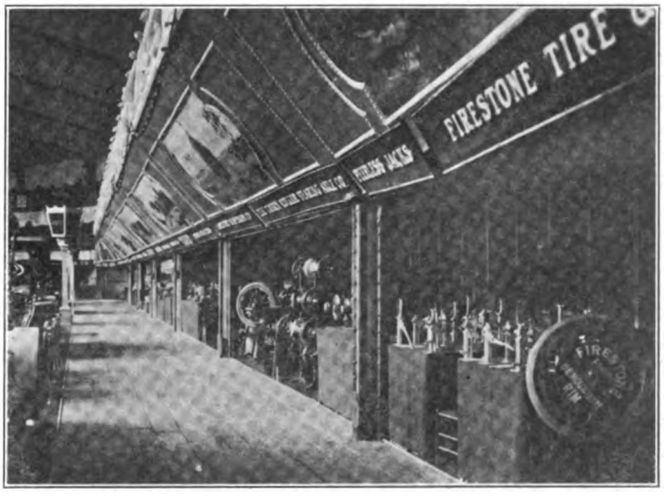


PITTSFIELD.

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Batavia Rubber Co., Batavia, N. Y.—Tires.
Benford, E. M., Mt. Vernon, N. Y.—Spark plugs and timers.
Blue Ribbon Auto & Carriage Co., Bridgeport, Conn.—Bodies.
Bosch Magneto Co., Robt., New York City—Ignition systems.
Bowser & Co., S. F., Ft. Wayne, Ind.—Tanks, measuring pumps and gasolene storage systems.
Brennan Mfg. Co., Syracuse, N. Y.—Motors.
Bretz Co., J. S., New York City—Imported ball bearings and high tension magnetos.
Brictson, A. O., Brookings, S. D.—Studded tire protector treads.
Briscoe Mfg. Co., Detroit, Mich.—Radiators.
Continental Caoutchouc Co., New York City—Continental tires and demountable rims.
Cooks Sons, Adam, New York City—Lubricants.
Cooks Standard Tool Co., Kalamazoo, Mich.—Standard jacks.
Cormack & Co., M. H.—Supplies.
Cowles & Co., C., New Haven, Conn.—Lamps, monograms and bouquet holders.
Cramp & Sons Ship & Engine Co., Wm., Philadelphia, Pa.—Bronze castings and automobile parts.
Davis-Bournonville Co., New York City—Casting and autogenus welding.
Dayton Airless Tire Co., Dayton, O.—Tires.
Diamond Chain and Mfg. Co., Indianapolis, Ind.—Axles, chains, transmissions, sprockets.
Fisk Rubber Co., Chicopee Falls, Mass.—Fisk tires.
Flentje, Ernest, Cambridge, Mass.—Shock preventers.
Franklin Co., H. H., Syracuse, N. Y.—Die castings.
G. L. Economizer Co., New York City—Fuel economizers.
G & J Tire Co., Indianapolis, Ind.—G & J tires.
Gabriel Horn Mfg. Co., Cleveland, O.—Gabriel exhaust horns.
Garvin Machine Co., New York City—Pumps and machinery.
Geiszler Bros., New York City—Batteries.
Gemmer Mfg. Co., Detroit, Mich.—Steering gear and parts.
Gilbert Mfg. Co., New Haven, Conn.—Tires, jackets, lamps, covers and rubber cloth specialties.





ACCESSORIES EXHIBITS ON ELEVATED PLATFORM AROUND THE ARENA

Brown-Lipe Gear Co., Syracuse, N. Y.—Transmission, differential and steering gears.
Buda Foundry & Mfg. Co., Chicago, Ill.—Jacks.
Burnett Compound Spring, Incorporated, Newark, N. J.—Suspension springs.
Burrowes Co., E. T., Portland, Me.—Spare wheels and wind shields.
Byrne, Kingston & Co., Kokomo, Ind.—Kingston carburetters.
Caloris Mfg. Co., Philadelphia, Pa.—Caloris bottles.
Champion Co., Albert, Boston, Mass.—Ignition specialties.
Champion Ignition Co., Flint, Mich.—Ignition systems.
Chandler Co., Inc., The, Springfield, Mass.—Name plates and monograms.
Chase & Co., L. C., Boston, Mass.—Top cover leathers and plush robes.
Chicago Coil Co., Chicago, Ill.—Cartridge coils.
Chicago Windshield Co., Chicago, Ill.—Windshields.
Coes Wrench Co., Worcester, Mass.—Wrenches.
Columbia Lubricants Co. of New York, New York City—Lubricants.
Columbia Nut and Bolt Co., Bridgeport, Conn.—Lock nuts.
Commercial Acetylene Co., New York City—Oxy-acetylene welding.
Connecticut Telephone and Electric Co., Meriden, Conn.—Spark coils, switches and ignition specialties.
Consolidated Rubber Tire Co., New York City—Kelly-Springfield tires.
Diamond Rubber Co., Akron, O.—Diamond tires.
R. E. Dietz Co., New York City—Lamps.
Dimond Igniter Co., New York City—Storage batteries, rectifiers, traffic signals and hand soap.
Dixon Crucible Co., Joseph, Jersey City, N. J.—Graphite and lubricants.
Dow Tire Co., New York City—Dow tires.
Downing, C. J., New York City—Lamps, horns and accessories.
Duff Mfg. Co., Pittsburg, Pa.—Barrett jacks.
Duffy Grease Co., New York City—Lubricants.
Eastern Carbon Works, Jersey City, N. J.—Dry batteries.
Edison Auto Accessories Co., New York City—Edison spark plugs.
Edmunds & Jones Mfg. Co., Detroit, Mich.—Lamps.
Edwards Co., O. M., Syracuse, N. Y.—Windshields.
Electric Storage Battery Co., Philadelphia, Pa.—Accumulators.
Elite Mfg. Co., Ashland, O.—Jacks and pumps.
Empire Automobile Tire Co., Trenton, N. J.—Empire tires.
English & Mersick Co., New Haven, Conn.—Automobile hardware, lamps and windshields.
Erie Foundry Co., Erie, Pa.—castings.
Faultless Auto Tube Co., New York City—Multiple inner tubes.
Firestone Tire & Rubber Co., Akron, O.—Firestone tires.
Globe Machine & Stamping Co., Cleveland O.—Metal stamping specialties.
Goodrich Co., B. F., Akron, O.—Goodrich clincher tires.
Goodyear Tire & Rubber Co., Akron, O.—Goodyear tires and tire inflaters.
Gray & Davis, Amesbury, Mass.—Lamps.
Ham Mfg. Co., C. T., Rochester, N. Y.—Lamps.
Hardy Co., R. E., The, New York City—Spark plugs.
Harris Oil Co., A. W., Providence, R. I.—Lubricants.
Hartford Rubber Works Co., Hartford, Conn.—Hartford tires.
Hartford Suspension Co., Jersey City, N. J.—Truffault-Hartford shock absorbers.
Havoline Oil Co., New York City—Lubricants.
Haws, Geo. A., New York City—"Panhard oil."
Healy Leather Tire Co., New York City—Tires and rims.
Hill Dryer Co., New York City—Funnels.
Heinze Electric Co., Lowell, Mass.—Coils and ignition equipment.
Herz & Co., New York City—Timers, plugs and ignition specialties.
Hess-Bright Mfg. Co., Philadelphia, Pa.—Bearings and magnetos.
High Frequency Ignition Coil Co., Los Angeles, Cal.—Ignition systems.
Hoffecker Co., The, Boston, Mass.—Speed indicators.
Hopewell Bros., Cambridge, Mass.—Tire cases, covers, robes.
Hyatt Roller Bearing Co., Harrison, N. J.—Roller bearings.

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Hydraulic Oil Storage & Distributing Co., Detroit, Mich.—Tanks, "Snells" storage systems.

Janney-Steinmetz & Co., Philadelphia, Pa.—Spark plugs, tanks, wrenches.

Janus Bottle Mfg. Co., New York City—Vacuum bottles.

Jarman & Baker, New York City—Drip pans, racks, horns and accessories.

Jeffrey-Dewitt Co., Newark, N. J.—Reliance spark plugs.

Johnson & Co., Isaac G., Spuyten Duvil, N. Y.—Forgings and castings.

Jones & Co., Phineas, Newark, N. J.—Rims, wood wheels.

Jones Speedometer, New York City—Speedometers, annunciators, odometers and specialties.

K. W. Ignition Co., Cleveland, O.—Magnetos, spark plugs.

Keystone Lubricating Co., Philadelphia, Pa.—Lubricants.

King Optical Co., Julius, New York City—Goggles and clocks.

Kitsee Storage Battery Co., Scranton, Pa.—Storage batteries.

Lavalette & Co., New York City—Magnetos and ignition specialties.

Livingston Radiator Co., New York City—Radiators.

Leather Tire Goods Co., Newton Upper Falls, Mass.—Non-skid covers.

Lebanon Steel Casting Co., Lebanon, Pa.—Steel castings.

Light Mfg. & Foundry Co., Pottstown, Pa.—Aluminum parts and castings.

Lucas & Co., John, New York City—Paints.

Lunkenheimer Co., The, Cincinnati, O.—Lubricators, grease cups, pet-cocks.

"Lux" Auto Lamp Mfg. Co., New York City—Lamps.

McCord Mfg. Co., Chicago, Ill.—Radiators and oilers.

Manhattan Screw & Stamping Works, New York City—Horns, lamps.

Mann Co., Leon, New York City—Raincoats.

Manufacturers Foundry Co., Waterbury, Conn.—Castings.

Marko Storage Battery Co., Brooklyn, N. Y.—Batteries.

Merchant & Evans Co., Philadelphia, Pa.—Multiple disc clutches, automobile fittings and Hele-Shaw clutches.

Metal Stamping Co., New York City—Radiators, rails, windshields and ball-bearings.

Mezger, C. A., Inc., New York City—"Soot-proof" spark plugs and windshields.

Mica Core Mfg. Co., New York City—Insulation and plugs.

Michelin Tire Co., Milltown, N. J.—Michelin tires.

Miller, Charles E., New York City—Brampton chains, supplies and accessories.

Miller & Sons, Wm. P., Long Island City, N. Y.—Lubricants.

Morgan & Wright, Detroit. Mich.—Morgan & Wright tires.

Morrison-Ricker Mfg. Co., Grinnell, Ia.—Gloves and gauntlets.

Mosler & Co., A. R., New York City—Spark plugs, "Isti" rear signal devices and "Umph" Timers.

Mossberg Co., Frank, Attleboro, Mass.—Auto Cle wrenches.

Motsinger Device Mfg. Co., Pendleton, Ind.—Ignition systems.

Motor Car Equipment Co., New York City—Blanchard horns, Pirelli tires and supplies.

Motz Clincher Tire & Rubber Co., New York City—Tires.

Mutty Co., L. J., Boston, Mass.—Rubber cloth and imitation leathers.

Nadall Mfg. Co., Chicago, Ill.—Nadall Demountable rims.

Nathan Novelty Mfg. Co., New York City—Tire covers and cases.

National Battery Co., New York City—Storage batteries.

National Carbon Co., New York City—Dry batteries.

Never Miss Spark Plug Co., Lansing, Mich.—Plugs, ammeters, battery connections, chain tools.

New Departure Mfg. Co., Bristol, Conn.—Annular ball bearings.

New York Coil Co., New York City—Spark coils.

New York Leather Belting Co., New York City—Belting and brake lining.

N. Y. & N. J. Lubricant Co., New York City—Lubricants.

N. Y. Sporting Goods Co., New York City—Accessories.

Nightingale Whistle Co., New York City—Exhaust whistles.

Noera Mfg. Co., Waterbury, Conn.—Oilers.

Noonan Tool & Machine Works, Rome, N. Y.—Tools.

Oliver Mfg. Co., Chicago, Ill.—Jacks.

Pantasote Co., The, New York City—Top and upholstery imitation leather.

Parker Mfg. Co., Boston, Mass.—Standard speedometers.

Patterson, Gottfried & Hunter, New York City—Tool outfits.

Pennsylvania Rubber Co., Jeannette, Pa.—Pennsylvania tires.

Perfection Spring Co., Cleveland O.—Springs.

Perfection Wrench Co., Port Chester, N. Y.—Wrenches and tools.

Philadelphia Storage Battery Co., Philadelphia, Pa.—Storage batteries.

Philadelphia Timer & Machine Co., Philadelphia, Pa.—Timers.

Pierson Motor Supply Co., Brooklyn, N. Y.—Supplies.

Pittsfield Spark Coil Co., Dalton, Mass.—Ignition systems.

Post & Lester Co., The, Hartford, Conn.—Supplies and specialties.

Pratt & Whitney Co., Hartford, Conn.—Machinery.

Prosser & Son, Thomas, New York City—Krupp steel, gears and parts.

Quincy-Manchester-Sargent Co., Plainfield, N. J.—Auto Wrenches and steel castings.

Rands Mfg. Co., Detroit, Mich.—Tops and windshields.

Randall-Faichney Co., The, Boston, Mass.—Oil guns.

Reeves & Son, Paul, Philadelphia, Pa.—Bearings, castings.

Reilly & Son, Philadelphia, Pa.—Lap robes.

Remy Electric Co., Anderson, Ind.—Magnetos.

Republic Rubber Co., Youngstown, O.—Tires.

R. I. V., Inc., New York City—Annular ball bearings.

Robinson & Sons Co., Wm. C., Brooklyn, N. Y.—Lubricants.

Rose Mfg. Co., Philadelphia, Pa.—Lamps.

Rubly Mfg. Co., Tuckahoe, N. Y.—Tuckahoe grease guns.

Rushmore Dynamo Works, Plainfield, N. J.—Acetylene lamps and generators.

Sager Co., J. H., Rochester, N. Y.—Supplementary springs.

Samson Leather Tire Co., New York City—Tires.

Schobel, J. Francis, New York City—Silicia storage batteries.

Seamless Rubber Co., New Haven, Conn.—Rubber goods, inner tires and tubing.

Shaler Co., C. A., Waupum, Wis.—Electric vulcanizers.

Shelby Steel Tube Co., Pittsburg, Pa.—Cold drawn steel tubing.

Sireno Co. New York City—Electric horns.

Smith Co., A. O., Milwaukee, Wis.—Gears and parts.

Spicer Universal Joint Mfg. Co., Plainfield, N. J.—Universal joints.

Splitdorf, C. F., New York City—Timers, distributers, coils and ignition specialties.

Sprague Umbrella Co., Norwalk, O.—Tops and windshields.

Springfield Metal Body Co., Springfield, Mass.—Bodies and tops.

Standard Leather Washer Mfg. Co., Newark, N. J.—Leather washers and lugs.

Standard Roller Bearing Co., Philadelphia, Pa.—Ball bearings and parts.

Standard Welding Co., Cleveland, O.—Tubing, electrically welded parts and rims.

Stanley & Patterson, New York City—Battery holders, tools and supplies.

Stengel, Geo., Newark, N. J.—Upholstery leather.

Stepney Spare Wheel Co., Chicago, Ill.—Spare wheels.

Stewart & Clark Mfg. Co., Philadelphia, Pa.—Speed indicators.

Stromberg Motor Devices Co., Chicago, Ill.—Carburetters.

Swinehart Clincher Tire & Rubber Co., Akron, O.—Swinehart solid tires.

Timken Roller Bearing Axle Co., Canton, O.—Roller bearings and axles.

Traver Blow-Out Patch Co., New York City—Tire repair outfits.

Trenton Rubber Mfg. Co., Trenton, N. J.—Inner tubes, "Thermoid" brake lining.

Troy Carriage & Sunshade Co., Troy, O.—Tops.

U. S. McAdamite Metal Co., Brooklyn, N. Y.—Aluminum alloy castings.

U. S. Spare Wheel Co., Detroit, Mich.—Spare wheels.

Union Battery Co., Belleville, N. J.—Batteries.

Vacuum Oil Co., Rochester, N. Y.—Lubricants.

Valentine & Co., New York City—Varnishes.

Van Guard Mfg. Co., Joliet, Ill.—Windshields.

Veeder Mfg. Co., Hartford, Conn.—Tachometers and tachodometers.

Vehicle Apron & Hood Co., Columbus, O.—Aprons, hoods, collapsible buckets.

Vesta Auccumulator Co., Chicago, Ill.—Accumulators, electric lamps, spark plugs.

Voorhees Rubber Mfg. Co., Jersey City, N. J.—Rubber hose and packing.

W. D. Spring Tire Co., New York City—Spring cushion tires.

Warner Gear Co., Muncie, Ind.—Gears and parts.

Warner Instrument Co., Beloit, Wis.—Warner Auto-meters.

Weed Chain Tire Grip Co., New York City—Non-skid tire chains.

Westchester Appliance Co., Yonkers, N. Y.—Batteries.

Wheeler, F. H., Indianapolis, Ind.—Schebler carburetters.

Whitney Mfg. Co., Hartford, Conn.—Whitney chains and keying systems.

Witherbee Igniter Co., New York City—Witherbee storage batteries and Wico ignition specialties.

White & Bagley Co., The, Worcester, Mass.—Lubricants, soap.

Winn, Wm. R., New York City—Lubricants.

Wood Machine Co., L. C., New York City—Air compressors.

Young, O. W., Newark, N. J.—Cement, lubricants, soaps.

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STUDEBAKER ARMY DESPATCH CAR, which made wonderful record from New York to Fort Leavenworth, Kansas, last winter, leaving New York six days after the "New York to Paris" racers and BEATING THEM ALL into Chicago.

THE STUDEBAKER "thirty" was selected for this "War Test Endurance Grind," because of its known reliability.

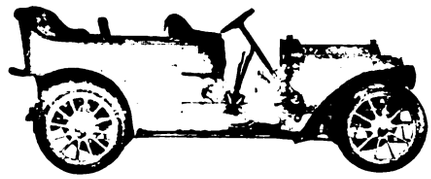
¶ The conditions were the most severe ever encountered in any automobile endurance test, and, notwithstanding the horrible abuse the car received in this record-breaking run, it was re-entered in the recent Glidden Tour and made a perfect score.

¶ This was an ordinary stock chassis of the same type as is used for the popular STUDEBAKER Town Cars and Suburbans, and such a car, backed by such a concern as the Studebaker Company, is a sane and dependable business proposition for any prospective automobile buyer.

Studebaker

South Bend, Indiana

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Touring Car



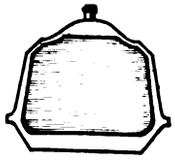
Gentlemen's Speed Car

Studebaker

NEW YORK:
Broadway
at 48th Street

BOSTON:
1020 Boylston Street

PHILADELPHIA:
330 North Broad Street



THERE is nothing which should be more thoroughly investigated before purchasing than an automobile.

The crowded conditions of automobile shows make a thorough investigation, to say the least, tiresome.

In view of this fact, the Studebaker Company, in addition to its exhibit at the Madison Square Garden, will devote its entire ground floor of the Studebaker Building, at Broadway and Forty-eighth Street, to the LARGEST and MOST EXTENSIVE DISPLAY of motor vehicles of one make EVER HELD IN THIS COUNTRY.

Although the Studebaker Company is the largest single exhibitor at the Madison Square Garden Show, this special display at the Studebaker Building has been arranged to allow a more leisurely and thorough investigation of the Studebaker line.

This special exhibit will be open from January 2d to 23d inclusive, and every interested person is cordially invited to call at either or both exhibitions. The company would like to extend a special invitation to out-of-town automobilists, but everyone will be so cordially welcomed that a "preferential bid" is hardly possible.

A Studebaker enclosed electric omnibus will run on regular schedule between the Studebaker Building and the Automobile Show.

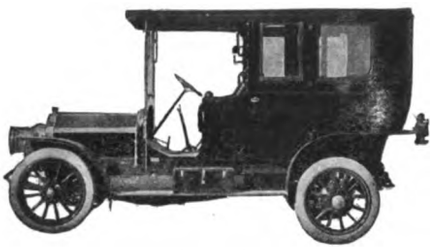


Electric Delivery Wagon

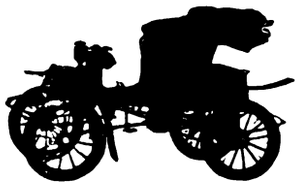


Gasolene Ambulance

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Limousine.



Electric Runabout

STUDEBAKER Automobiles are designed for service—constantly and under all sorts of conditions.

A Studebaker chassis, with a closed body, can be used all winter, and affords the maximum of elegance and convenience.

Replace the closed with an open body and it can be used all summer, and you get the maximum of reliability and comfort.

In other words, the Studebaker chassis is designed for service—there's not too much of it for a town car nor too little of it for a touring car. It's built to do the work and it does it, and it is backed by the most liberal guarantee ever written.

If you are an automobile engineer an inspection of the Studebaker car will prove a mechanical treat—its design and construction speak for themselves.

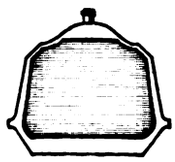
If you are not versed in engineering principles it's all the more reason why you should buy a Studebaker, as all the experience and facilities of this great organization are behind it.

Studebaker

NEW YORK:
Broadway
at 48th Street

WASHINGTON:
1313 New York Ave.

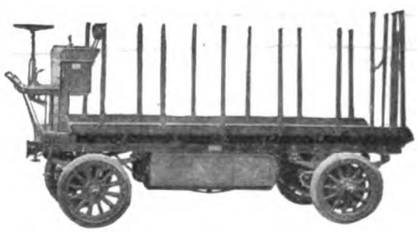
PAWTUCKET, R. I.:
144 East Avenue



30 H.P.—GASOLINE CARS—40 H.P.
Touring and Closed Cars. Runabouts, Speed Cars and Suburbans.
ELECTRIC PLEASURE VEHICLES
Runabouts, Stanhopes, Interior-Driven Coupes, Landaulets.
ELECTRIC COMMERCIAL VEHICLES
Delivery Wagons and Trucks.



Interior-Driven Coupe



10,000-Pound Electric Truck

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A Studebaker Electric is better than a pony cart for the children. It costs half as much to maintain, goes twice as far, and cannot run away.

STUDEBAKER Electrics are the quick, willing servants of the entire family. Luxurious, immaculately clean and noiseless. Require no chauffeur, can be charged on your own premises automatically and are absolutely safe. For the business man a STUDEBAKER Electric is a time saver and a money saver. It connects him in a moment with his office, his attorney, his club or his home. For woman's use it is the ideal means of conveyance. Its daintiness and luxuriousness of appointments instantly appeal to her refined taste. For shopping, for social calls and the like it is indispensable.

¶ The STUDEBAKER show rooms contain the largest line of automobiles ever displayed on Broadway.

Studebaker

South Bend, Indiana

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DEAD HEATS IN A LIVELY MEET

De Hymel Captures Honors in San Antonio Hill Climb—His Sensational Encounter with Rails of Steel.

Three dead heats in as many events, did not mean a dead meet by any means, when the San Antonio (Tex.) Automobile Club ran its oft-postponed hill-climb on Sunday, 10th inst., on the Wetmore slope in that city. Although the entry list was not large, a good-sized crowd of spectators turned out, expecting to see all sorts of thrills, as is often the wont of crowds. They had at least one opportunity to witness a sensation. This was when Tobin De Hymel, a driver who stacks up as something of a driver in those parts, shot a Stoddard-Dayton roadster up the incline with some spectacular trimmings attached to the performance. He proceeded to take the numerous curves in the course with apparent daredevil sang froid, until he struck a line of car tracks at one of the turns and caught his rear tires in them. The encounter with the steel rails served to swing his car towards its starting point and a turtling seemed inevitable, when De Hymel suddenly gained control and brought his mount to a standstill. Then heading its radiator in the right direction, he continued the climb in most reckless fashion.

The crowd liked it and hoped there would be more pyrotechnics, but no more thrills were granted them. The only other excitement of the afternoon, was when V. P. Kenny, in a Packard, tied in three different trial heats with a Stoddard-Dayton touring car. In one heat the half mile was covered in 45 seconds and the other two in 0:45⅗. It was agreed to have these cars enter the free-for-all, in an effort to evolve a winner, that event to decide the contest between the two.

When the contenders went at it, De Hymel, in the Stoddard-Dayton, slammed up the hill after the fashion of a young meteor, to the tune of 0:42⅖, winning the chief honors of the day. The Stoddard-Dayton touring car entry nosed out its rival, the Packard, driven by Kenny, for second place and Dusenberry's Mason car was fourth.

The latter entry proved a surprise earlier in the day, when Dusenberry sent it up the grade in 46⅕ seconds in a touring car event, and outclassed the rest of his field.

K. G. Wickwire took a flyer up the course on a motorcycle and succeeded in bouncing over the finish line at 50 seconds flat.

Winton Suggests New Plan for Contests.

That endurance contests have failed in their purpose is the expressed opinion of Alexander Winton, president of the Winton Motor Carriage Co., and he has formulated plans for a contest which he believes will be more enlightening in its results. They provide for a pool to be made up by the payment of $2,000 by each manufacturer, as an entrance fee, securing him the right to have any or all of his cars of current model entered, providing the owners of such cars desire to compete. The manufacturers themselves are not eligible as competitors, as is made evident in the proposed rules, which follow:

1—Individual entries must be made two months before the start of the contest.

2—No car shall be eligible to start except it be driven by its owner or his employed chauffeur. In case the chauffeur drives, it must be shown that he has been continuously in the employ of this particular owner at least three months before the start of the contest, and that he has not within six months of the date of the start, been in the employ of the manufacturer of the car or of any agent selling that particular make.

3—No car shall be eligible to start unless its maker shall have paid the $2,000 entrance fee.

4—No car shall be eligible to start unless it shall be shown that it has been in the possession of its present owner three months prior to the start of the contest, or shall have made a mileage of 3,000 miles in the service of its present owner, and that it has not been overhauled within or since the three months or 3,000-mile period.

5—No car shall be eligible to start unless the owner at the time of making entry pays a fee of $200, which fee shall be used by the managing association toward the expenses of the contest.

The pooled entrance fees paid in by the manufacturers are to be disposed of in accordance with a scheme dividing the money into three classes of prizes, to be given to the winners in cash or plate, as the winner in each case may elect. The classes suggested are: First, cars costing $4,000 or more; second, cars costing between $2,500 and $3,999; and third, cars costing less than $2,500; with first, second and third prizes for each class.

In accordance with the general plan the manufacturer's entrance fee is to be paid at least six months before the start of the contest, and where he gets his "look in" is the opportunity afforded to advertise that his cars are eligible to compete.

Old Lakebed for a Motordrome.

Tex Rickard and other wealthy mining men of Goldfield, Nev., are pushing their plans, already announced in the Motor World, to make their city a center of automobile sport. With a view to holding a grand series of races they have secured a large tract out on the desert, about 12 miles from Goldfield, where a circular track 15 miles in circumference has been defined and successfully tried out. The locality is a dry lakebed of great extent, level as a floor and hardened by centuries of baking under the sun. Spectators will be able to see races from start to finish.

EVERY WOMAN WINS AN HONOR

Trophies for Six Contestants in the New York-Philadelphia-New York Run—Certificates for Others.

After puzzling his head and biting his pencil for three consecutive days, the Woman's Motoring Club of New York made final decision of the winning contestants in the New York-Philadelphia-New York endurance run, on Friday last. The net statistical outcome of the event, which took place on Monday and Tuesday, 11th and 12th inst., is this: Ten lady drivers started and finished the contest; six of them received trophies—all the trophies there were—and the remaining four received honorable mention, some of which also was distributed among the plate-winners. The actual distribution of honors in the event as announced by the man management of the contest was as follows, though the business of presentation is yet to be accomplished:

The Benjamin Briscoe bronze trophy, offered for the driver making the best showing in a Maxwell car, was given to Mrs. John R. Ramsey, of Newark, N. J. The Fosdick, a trophy for the best score, barring the Lancia entry of the donor, went to Mrs. A. W. Seaman of Brooklyn, who piloted a Franklin. W. J. Morgan's bronze placque was won by Mrs. Evelyn M. Buckman, who handled a Renault. Had she not been foolish enough to carry a man in her party, her score, in the estimation of the committee, would have been higher. Mrs. Cuneo was the recipient of the trophy offered by Hugh Chalmers. At the wheel of the Lancia "Lampo," the Savannah light car race winner, Mrs. Cuneo was the first to arrive at Philadelphia and also the first home on the return to New York. Miss Alice D. Hayes, of Brielle, N. J., secured the cup donated by the club itself. Her 30 horsepower Cadillac carried the greatest number of passengers on each trip—five altogether. The Schwalbach trophy went to none other than Mrs. Anna Back, who drove a Maxwell runabout with her husband, Peter Back, to Philadelphia—and back.

This allotment having used up all of the metal prizes the committee had to present, the remaining four contestants are to receive certificates of honorable mention—every one of them. They are: Mrs. Lillian Gillespie, Mrs. J. C. Kirkman, Miss Bertha Rittweger and Mrs. E. F. Gresh.

Associated Clubs of New Jersey Election.

At the annual meeting of the Associated Automobile Clubs of New Jersey, the following officers were elected: President, W. C. Crosby; first vice-president, Walter Edge; second vice-president, Edward H. Radel; secretary and treasurer, H. A. Bonnell. Eight of the associated clubs were represented at the meeting.

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REVISED RULES FOR GLIDDEN TOUR

One-Man Control Abolished—Committee to Manage Contest—New Trophy for an Added Class of Contestants.

Chairman Hower is not to enjoy the complete autocracy in the control of the sixth annual reliability touring contest of the American Automobile Association which he has had in the past, it would appear from the preliminary announcement of the rules for the 1909 contest, just announced. Instead of the chairman absolute, there will be a committee absolute, delegated by the new contest board of the association, and the powers of the committee will be practically the same as those which formerly devolved upon the chairman. The dates for the run and the course, remain to be selected.

In addition to the Glidden and Hower trophies and the award of certificates to the entrants of all contesting cars completing the tour, there will be a fourth award in the shape of a trophy for the new class of miniature tonneau and double rumble cars. Competing vehicles will be divided into five groups designated alphabetically, according to price classification. Scoring will be done on a point penalty basis, much as hitherto; repairs, late arrivals at controls and deterioration, as shown by a final examination subsequent to the contest, constituting the basis for demerits. All cars will start with perfect scores, and those finishing with the lowest scores in their classes will receive the awards. The more novel and important provisions of the rules are given in the following summary:

"Each entrant shall be a member of a club affiliated with the American Automobile Association.

"Any stock car consisting of a combination of the manufacturers standard touring car chassis, touring body and standard equipment, with seats for four people or more, and carrying four or more persons or ballast at the rate of 125 pounds per person, may compete for the Glidden trophy.

"Any regular stock chassis with body equipped for two persons on the front seat and with standard equipment, and carrying not less than two persons, may compete for the Hower trophy. The car may have a rumble seat for one or two persons and additional passengers may be carried.

"Any stock car, consisting of a combination of a miniature tonneau with doors, mounted upon the chassis regularly furnished with the same standard equipment, carrying four persons or ballast at the rate of 125 pounds per person, may compete for the.....trophy.

"Cars shall at all times during the tour carry mufflers and mud-guards, and be fully equipped as per manufacturer's catalogue specifications, except that tops and wind shields need not be carried.

"Shock absorbers and spring wrappings may be added before the start as equipment, though not regularly furnished.

"Each entrant shall name an official representative for each of his entries, on or before July 1, 1909, failing which the driver of the car shall be considered the official representative. . . .

"The time for receiving entries shall expire on June 16, 1909, at 12 o'clock, noon, at the office of Frank B. Hower, chairman contest board, at 760 Main street, Buffalo, N. Y. Each entry must be accompanied by the entrance fee. For entries received prior to May 15th the fee shall be $200; after May 15 and utnil 12 o'clock, noon, on June 16th the entrance fee shall be $300. . . .

"Each day's tour shall be preceded by a pacemaker's car; and any entrant or representative thereof who passes the pacemaker shall be disqualified. If the pacemaker's car breaks down or is compelled to travel at a rate so slow as to impede the progress of the tour, his flag shall be transferred to the first car overtaking him, which car shall thereafter become pacemaker's car subject to the same conditions. . . .

"Competing cars shall be divided into classes as follows: Class A—Cars listed at $3,751 and upwards; Class B—Cars listed at $2,451 to $3,750 inclusive; Class C—Cars listed at $1,751 up to $2,450 inclusive; Class D—Cars listed at $1,000 to $1,750 inclusive, and Class E—Cars listed at $999 and under.

"The Class A running time for each day shall be posted on the bulletin board at headquarters the previous evening. Each driver, using this as a basis, shall figure his own running time and when due at controls.

"When the daily running time shall be 9 hours or more, the running time of:

Class B will exceed that of Class A 20 minutes;
Class C will exceed that of Class A 40 minutes;
Class D will exceed that of Class A 60 minutes;
Class E will exceed that of Class A 80 minutes;

"When the daily running time shall be greater than 7½ hours and less than 9 hours the running time of:

Class B will exceed that of Class A 15 minutes;
Class C will exceed that of Class A 30 minutes;
Class D will exceed that of Class A 45 minutes;
Class E will exceed that of Class A 60 minutes;

"When the daily running time shall be 7½ hours or less the running time of:

Class B will exceed that of Class A 10 minutes;
Class C will exceed that of Class A 20 minutes;
Class D will exceed that of Class A 30 minutes;
Class E will exceed that of Class A 40 minutes."

Provision for controls with arrangements for guarding cars at night will be carried out much as in former tours. The morning checking-out time will be 7 o'clock, and the committee may establish such checking points as it may deem proper. A car ahead of time at night controls may immediately check in. As for the provision for the observers, which are to be furnished by the entrants, if the entrant is an automobile manufacturer or dealer, or in any way connected with the manufacture or sale of automobiles, each observer furnished by him shall be:

"A person who has been regularly and exclusively employed by the entrant by whom he is nominated for a period of not less than three months prior to the contest, or the entrant himself or an officer or director of his business, or a dealer in the car made by the entrant; an owner of a car made by the entrant. If the entrant is not an automobile manufacturer or dealer the observer furnished by him shall be satisfactory to the committee. Each observer may be assigned to a different car each day."

The penalty provisions are as follows:

"After an allowance of two minutes, each late arrival will be penalized one point for each minute or part thereof.

"Parts, labor and use of tools shall be penalized as follows:

"Inventoried parts and material carried from the start: One-tenth of a point for each ten cents (10c) or fraction thereof.

"Time consumed by driver and mechanician in work in connection with such parts. One-tenth of a point for each man working for each minute or fraction thereof.

"Outside labor: Two-tenths of a point for each man working for each minute or fraction thereof.

"Parts and material not inventoried and carried from the start: Two-tenths of a point for each ten cents (10c) or fraction thereof.

Time consumed in connection with such uninventoried parts: Two-tenths of a point for each minute or fraction thereof for each person.

For the use by driver or mechanician of tools not listed: Two-tenths of a point for each man for each minute or fraction thereof that such tools are in use. . . .

"Any car which may, for any reason, discontinue as a contestant, shall be penalized 1,000 points in addition to all previous penalizations."

After providing for the possible disqualifications of an owner or driver arrested for speeding. the rules further state that:

"When road conditions are so bad that a car cannot get sufficient traction to move, or is ditched, and reasonable effort has been made to extricate it, towing or other external means may be used to relieve the immediate distress only, but under no circumstances shall a car enter a night or any other control, except under its own power. When towing, or assistance from any external source shall have been received by a car, its observer shall make a full and complete report, giving time, place, conditions, distance of tow, and any other details."

The authority of the committee is constituted thus:

"The committee of the contest board shall manage the tour, with full power to enforce the rules, render decisions and do anything else that would be within the province of the contest board of the American Automobile Association.

"The committee of the contest board reserves the right to alter, amend or suspend these rules from time to time, up to and including the end of the tour and final award, as may be deemed expedient.

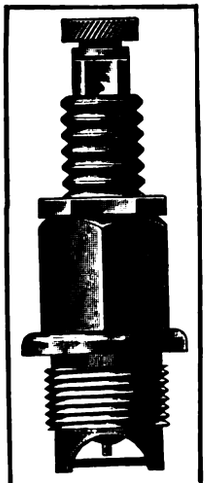
"The committee or its representatives shall have power at all times to make such examinations of the cars and their contents as may be deemed advisable.

"The committee shall have power to disqualify any car for traveling at any speed which it may consider excessive under the conditions existing at the time, and without reference to these rules."

Hotel accommodations, as in former years, will be taken care of by an advance tourist agent. But the "baggage train" has been eliminated.

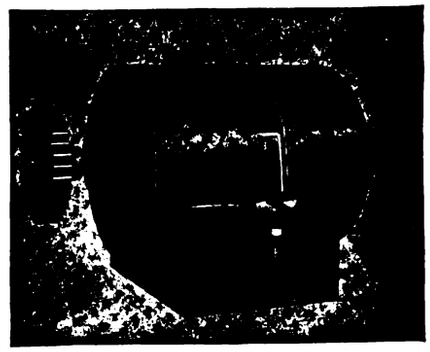
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HEINZE IGNITION APPARATUS



Standard ALAM 7/8"-18 thread

HEINZE IMPROVED MICA SPARK PLUGS

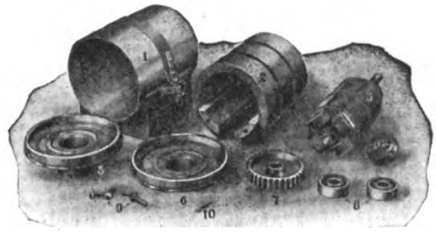


Heinze Low Tension Magneto operating through vibrating coil to spark plug.

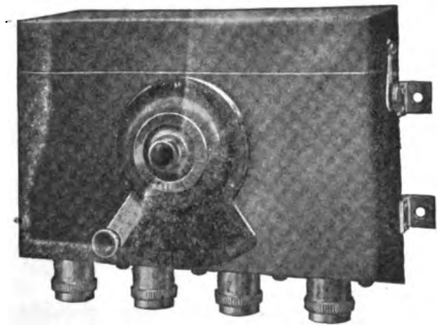
HEINZE IMPROVED MICA SPARK PLUGS



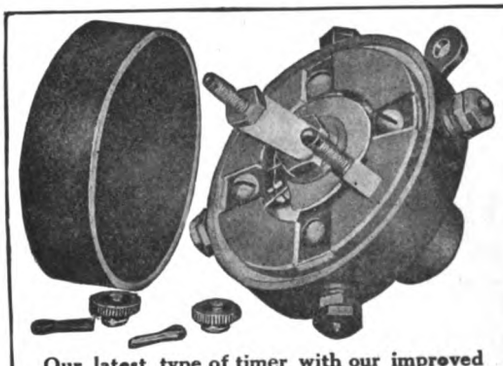
Regular 1/2"-14 Pipe Thread



Showing Magneto disassembled.



Our latest type coil supplied with kick switch for operating either on Magneto or Battery.



Our latest type of timer with our improved wipe contact, acknowledged by all leading Motor Car Makers to be the most superior type of construction.

HEINZE ELECTRIC COMPANY

Send for our latest catalogue.

Factory and main office, LOWELL, MASS

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The Week's Patents.

900,792. Transmission Gear. Ernst M. Sternberg, Milwaukee, Wis. Filed Nov. 29, 1907. Serial No. 404.315.

1. In a transmission gear, a power shaft, axially aligned transverse counter shafts disposed on opposite sides of the power shaft, a gear wheel in connection with each counter shaft, a driving gear wheel carried by the power shaft for engagement with the counter shaft gear wheels, an arbor revolubly mounted about one of said counter shafts, a gear wheel secured thereto, and an idle gear wheel engaging the arbor gear wheel and gear wheel of the aforesaid counter shaft about which sair arbor is mounted.

900,798. Sparking Device for Gas Engines and the Like. Fredus A. Thurston, Chicago, Ill. Filed June 15, 1904. Serial No. 212,647.

1. An appartus of the class specified, comprising a ring or annulus made of insulating material, and having a series of contacts on the inner side of its periphery, a rotary member having a spring-actuated contact adapted to travel on the inner surface of said ring, and make connection with said contacts thereon, said rotary member being also provided with a second contact member adapted to make connection with said ring contacts after the making connection therewith, of said spring controlled member, and a connection on the ring extending to said contacts on said rotary member.

900,857. Gearing. Thomas B. Jeffery, Kenosha, Wis. Filed Feb. 23, 1904. Serial No. 194,761.

1. The combination with a pair of aligned shafts, of a rotary power transmission member having hubs surrounding the adjacent ends of the shafts, exteriorly screw-threaded sleeves keyed upon said hubs so as to be movable axially of the hubs and immovable angularly with respect to the hubs, collars having screw threads for engaging the screw threads upon the hubs, the ends of said collars abutting against the sides of said transmission member, circular supports surrounding said hubs, and anti-friction bearings interposed between the ends of said sleeves and said supports.

900,860. Anti-Friction Bearing. Ernest C. Ketchum, Boston, Mass. Filed Aug. 28, 1907. Serial No. 390,479.

1. In a roller bearing, the combination of two rings movable relatively to each other and provided on adjacent circumferential walls with paths for anti-friction members; a plurality of anti-friction members interposed between said rings and adapted to revolve in contact with said paths; a separator between each pair of anti-friction members; and a revoluble member contacting with and interposed between each separator and the outer roller path, the axes of each separator and its co-operating revoluble member being radial to the axis of said roller bearing.

901,006. Apparatus for Curing or Vulcanizing Rubber Goods. Ernest Hopkinson, East Orange, N. J., and Thomas Midgley, Hartford, Conn.; said Hopkinson assignor to the Hartford Rubber Works Company, Hartford, Conn., a Corporation of Connecticut. Filed Dec. 19, 1905. Serial No. 292,-443.

1. The combination in apparatus of the character specified, of a core adapted for

The Warner Auto-Meter



1909 Style

Guaranteed
Absolutely Accurate

is the only speed indicator made on the Magnetic Induction principle. Because of the principle it accurately indicates every range of speed from zero to the maximum.

All other instruments are made on the centrifugal principle. They fail to indicate any speed whatever under 5 to 10 miles per hour.

The Auto-Meter is so durably made that practical tests have shown that it will endure a **MILLION MILES** of riding without perceptible wear, or departing from absolute accuracy more than **10 feet to the mile.**

We invite comparative tests. Before you decide on any Speed Indicator, put the Auto-Meter on one side of your dash and any other indicator at any price on the other. Then use your watch over a measured course. Keep the instrument which **tells the truth.** We know which it will be.

The Warner Instrument Company

Factory and Main Offices—359 Wheeler Ave., BELOIT, WISCONSIN

BRANCH HOUSES—New York, 1902 Broadway; Boston, 925 Boylston St.; Philadelphia, Cor. Broad and Race; Pittsburg, 3432 Forbes St.; Cleveland, 2062 Euclid Ave.; Buffalo, 722 Main St.; Detroit, 239 Jefferson Ave.; Chicago, 1305 Michigan Ave.; Indianapolis, 330½ N. Illinois St.; St. Louis, 3923 Olive St.; San Francisco, 550 Golden Gate Ave.; Los Angeles, 1212 S. Main St.

"LONG-ARM" TRANSMISSIONS

THREE speeds and reverse, selective types. The best of material and workmanship. Our experience in gear cutting and manufacturing Automobile Parts enables us to equal the best transmissions built. Let us figure on your requirements.

We also build a complete line of
AXLES, CLUTCHES
STEERING REACHES
HAND LEVERS, ETC.

The "Long-Arm" System Co.,
CLEVELAND, O.

Sales Dept., THE AMERICAN DISTRIBUTING CO.,
American Trust Bldg., Cleveland, O.

Thermoid BRAKE LINING

Sold by Handlers of High Grade Goods Everywhere

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insertion within a tire shoe or casing, means for clamping the margins of the casing in proper relation to the core while leaving the tread of the shoe or casing exposed, and a wrapping or cover extending over the tire shoe or casing and the clamping devices.

901,007. Method of Curing or Vulcanizing the Outer Shoes or Casings of Pneumatic Tires. Ernest Hopkinson, East Orange, N. J., and Thomas Midgley, Hartford, Conn.; said Hopkinson assignor to The Hartford Rubber Works Company, Hartford, Conn., a Corporation of Connecticut. Filed Dec. 19, 1905. Serial No. 292,444.

1. The method of vulcanizing or curing outside shoes or casings for pneumatic tires for vehicles which consists in supporting the shoe or casing upon a core, placing an abutment member between the margins of the shoe or casing, clamping the shoe or casing firmly upon the core and against the abutment member, but leaving the tread portion of the shoe or casing exposed, placing a covering of textile fabric over the exposed tread portion of the shoe or casing and in contact therewith, and in subjecting the shoe or casing so supported and covered to the action of vulcanizing heat.

901,055. Motor Vehicle. John D. Allen and John A. Conly, Philadelphia, Pa. Filed April 26, 1906. Serial No. 313,776.

1. In a motor vehicle, the combination with the frame thereof and the rear wheels journaled on said frame, of a divided driving shaft for said wheels, comprising a hollow central section having two gears loose thereon, a clutch movable to connect either gear thereto, and clutch members slidably mounted at either end thereof; and two end sections, the reduced inner ends of which are journaled in the ends of said hollow central section, each end section carrying a fixed clutch member co-operating with the corresponding slidable clutch member on the adjacent end of said central section, and means to actuate said slidable clutch members.

901,345. Carburetter. Thomson Howell, Newark, N. J. Filed March 5, 1908. Serial No. 419,318.

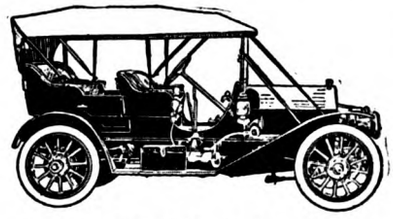
1. A carburetter for explosive gas engines comprising a main tubular body provided with an air-intake, and an outlet, a pair of arms extending diametrically across the interior of said main body, one of the said sets of arms being provided with an internally screw-threaded hub, and the other set of said arms having a hub formed with a hole, providing a guide, a tubular gasolene conveyor extending into the mixing chamber of said body and being provided with a screw threaded portion screwed into said screw threaded hub, said conveyer being provided with a plurality of perforations or holes, and a valve seat within said conveyer, a spindle movably arranged in the hole of said one set of arms, said spindle having a portion movably arranged within said conveyor and being provided with a cone-shaped end adapted to normally rest upon said valve seat, and means connected with said spindle adapted to be actuated by suction for removing said one-shaped end from the valve seat and thereby opening one or more of said perforations of the gasolene conveyor.

901,502. Lubricator. Josef Vollmer, Berlin, Germany, assignor to General Electric Company, a Corporation of New York. Filed July 3, 1905. Serial No. 268,020.

1. In a sight feed lubricator, the combination of a sight glass, a support therefor, and a spring pressed holder forming the sole retainer for the glass and adapted by a single movement away from the support to permit the glass to be instantly removed without subjecting it to stress.

PENNSYLVANIA

—you are interested in the highest quality as against the lowest price; if you believe in careful, personally directed workmanship, as against hurried production by thousands; if you appreciate a wearing dependability that forestalls accident, repair and tinkering; then—it will pay to investigate the Pennsylvania.



Touring Car or Baby Tonneau, $3,000.
Including Bosch magneto and gas tank.

Pennsylvania Auto Motor Co.
Bryn Mawr, Pa.

AJAX TIRES
Guaranteed for 5,000 Miles.
AJAX-GRIEB RUBBER CO.,
N. E. Corner 57th Street and Broadway, New York City
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JONES SPEEDOMETER
Most accurate speed indicator in the world.
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The Ball Transmission FOR Automobiles & Motor Boats
NEW YORK GEAR WORKS.
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15 cents per line of seven words, cash with order. In capitals, 25 cents per line.

FOR SALE—300 sets 28x3 best grade artillery wheels, fitted with clincher rims, less hubs. Write for bargain prices on single sets of the lot. THOMAS B. JEFFERY & COMPANY, Kenosha, Wis.

ACCURATE GEARS
Can furnish all kinds of gears of any material and in any quantity, all with accurately cut or planed teeth. Let us quote you prices.
The New Process Raw Hide Co.
SYRCAUSE, N. Y.

Art In Name Plates
One of the little things that count. The almost universal use of Chandler etched name-plates on high-class cars stamps them as the selection of the critical.
Examine them at Space 141, Garden Show.
Chandler Co., Springfield, Mass.

THIS MAGNETO IS "FOOL PROOF"
The most unskillful driver can install the Remy 1909 High Tension Magneto. Improper connection cannot injure it, and no amount of tinkering will put it out of commission. The Remy will stand more neglect, oil, dirt and water than any other ignition system in the world. More than 17,000 Remys have already been sold for 1909 cars—more Remys than all others combined. Write for illustration and description.
THE REMY ELECTRIC CO., Dept. 11, Anderson, Ind.
We have opened a branch house in Thoroughfare Bldg., Broadway and 57th St., New York.

Volt Ammeter $5.00, Ammeter only $3.50



How Are Your Batteries?
A CONNECTICUT VOLT AMMETER WILL TELL YOU
Guaranteed, and the price is right, send for catalogue and trade discounts.
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CHAIN TIRE GRIPS

are as necessary as gasolene. They absolutely prevent skidding, slipping, or lost traction

WHEN IT SNOWS!

put Weed Grips on all four wheels! Your car steers easily and without effort by so doing.



Weed Chain Tire Grip Company

35 Moore St., New York

SUPPLEMENTARY SPIRAL SPRINGS



¶Cars are like men in that it takes a study of them to realize their possibilities.

¶We have made a study of the spring question and can help you realize to the full the easy-riding possibilities of your car. The use of Supplementary Spiral Springs are a duty you owe to yourself. They provide spring insurance and spring comfort, effectually guarding against shocks to your pocketbook and passengers.

¶Many thousands of the S. S. S. are in use by just as many satisfied users. Better be one of them NOW.

¶Your dealer or garage can fit you out in a few hours' time.

SUPPLEMENTARY SPIRAL SPRING CO.

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STEVENS-DURYEA
XXX RUNABOUT

THIS car is popular priced and constructed along thoroughly modern lines. Has same power plant as embodied in Model X.

True worth on an automobile is based on its antecedents—mechanical excellence—economy of maintenance and durability. These main essentials are strikingly exemplified in the XXX Runabout—built to meet the demand of a gentleman's roadster.

PRICE, $2,850

Send for detailed descriptive matter

STEVENS-DURYEA CO.
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Member Association Licensed Automobile Manufacturers.

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FEDDERS RADIATORS

the real square tube radiator— the New York to Paris radiator, will be very much in evidence.

LOOK FOR THEM ON THE LEADING CARS

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We guarantee them as such and liberally back up this guarantee.

Carried in stock to fit all sizes of American and Foreign cars.

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THE COURTNEY EXTRA HEAVY TIRE

THE COURTNEY RUBBER COMPANY

Office and Salesroom

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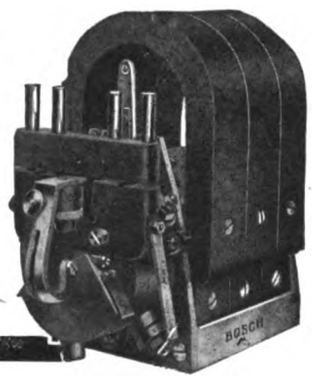
THE COURTNEY ANTI-SKID TIRE

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BOSCH
Magneto

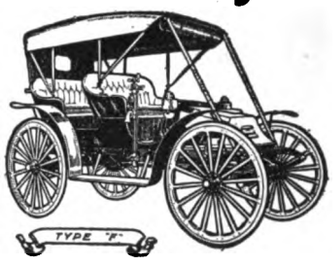
Insures Perfect Ignition

It is to be found on the winning cars in practically every great racing event the world over. It absolves the motor car user from all ignition troubles. See that your 1909 car is equipped with a Bosch Magneto.



Bosch Magneto Co.
160 W. 56th Street, New York
Branch Office: 1253 Michigan Ave., Chicago, Ill.

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$925 (Without top)

The Reliable Dayton Has "Made Good"

IT is not a $75.00 buggy with a $50.00 motor in it, but it is a MOTOR CAR from the ground up. Is making business for itself in every territory it invades, through its economical features, compared with the pneumatic-tire car.

Let us refer you to several of the company's largest dealers, who have handled the Reliable Dayton the past year; let them tell you their experience. Investigate; get the facts.

Drop us a line for our agency proposition today.

Our Catalog is different. Let us send you a copy.

Reliable Dayton Motor Car Co. Chicago, Ill.
Dept. 14

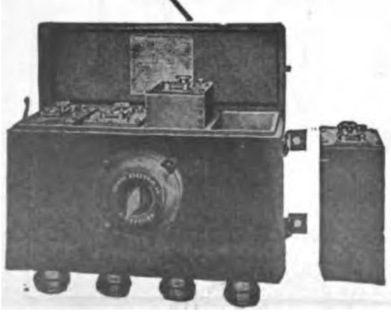
SPECIFY

Heinze ignition apparatus on your 1909 car and get

THE BEST MADE.



Write us if your dealer does not carry them.



Heinze Electric Co.
LOWELL, MASS.

Makers of
COILS, TIMERS, MAGNETOS, SPARK PLUGS.

JOT IT DOWN

to call at our exhibit at the Automobile Show this week at Madison Square Garden.

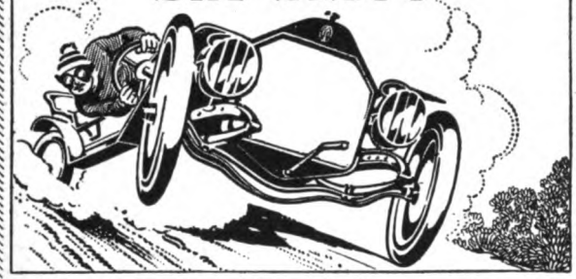
You will find an interesting display of our product, including several new and distinctive features.

SPACE 311, CONCERT HALL

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THE PALMER-SINGER SIX-SIXTY



65 Miles an hour Guaranteed

All Cars Sold by Us are Licensed Under Selden Patent and Guaranteed for One Year.

Exhibiting at Madison Square Garden Show

THE PALMER-SINGER SIX-SIXTY gives power and speed in a measure that you cannot be made to appreciate by mere words. WE GUARANTEE 65 MILES AN HOUR ON EVERY ONE OF THESE CARS.

It is the SPORTSMAN'S CAR DE LUUXE and neither in this country nor abroad is there anything of its class and type to compare with it, irrespective of price. It is a six cylinder, 60 H.P. speed car, capable of record-breaking speed and still of carrying from two to five passengers with perfect comfort on long and hard runs.

Nickel steel is used to give lightness and strength. Imported F. & S. ball bearings exclusively. Bosch high tension magneto and multiple disc clutches. Drop forged I beam, front axle—four-speed selective type, sliding gear transmission with direct drive on third speed. All brakes equalized, all expanding type and on rear wheels. Universal joints on all steering connections. Shaft driven, all moving parts inclosed in dustproof cases.

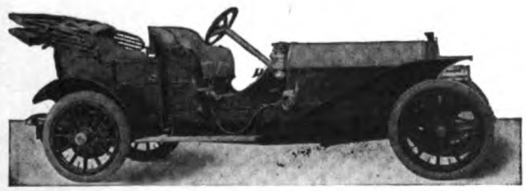
Palmer & Singer Mfg. Co.

1620-22-24 Broadway, New York.
1321 Michigan Ave., Chicago.

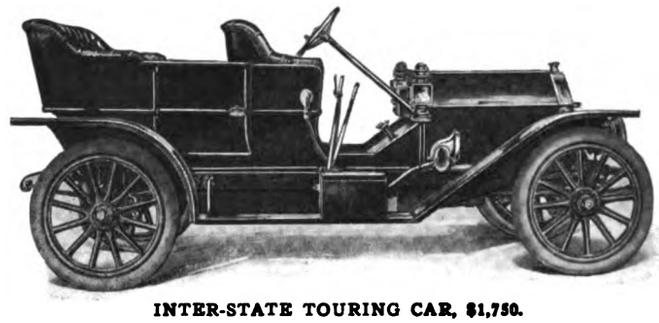
Sole Distributers the Simplex

1909 Chassis now on exhibition.

Winner of International 24-hour race at Brighton Beach, Oct. 2d and 3d and holder of 16 new World's Records.



LXI 6 Cyl., 60 H. P.....$3,100
Toy Tonneau..... 3,300



INTER-STATE TOURING CAR, $1,750.

The Inter-State

THE INTER-STATE is a new car, but its designers and builders are **not** new. It is a car of proven worth in every detail—representing the **highest known superiority** in automobile design and construction. If there were any way to make a **better** car we would make the INTER-STATE THAT WAY.

Every part of the INTER-STATE is there for good reason—best service. One of the many superior features of the INTER-STATE is the transmission system and the method of its hanging.

The transmission proper is the three-speed selective type and reverse, with vanadium steel gears. We build the selective mechanism inside the transmission case, insuring thorough and constant lubrication, and combine the clutch (disc) and transmission in the same case—the clutch being in a separate compartment—all mounted rigidly on the end of the torsion tube. The weight of the transmission and the driving force of the rear axle are taken on a large ball and socket joint supported from a rigid cross-bar mounted on the frame just back of the motor. The transmission, the rear axle and foot levers are complete as a unit before being installed. We unite the gear shifting mechanism to the hand levers by our own patented device, which gives absolute reliability under all conditions.

This system of combining the transmission and the clutch gives us the simplest and best three-speed selective type car made, **with greatest durability.**

The same high standard of service quality is maintained throughout the INTER-STATE. It is a **permanent enduring** car at a price but little higher than the price of **temporary** cars. The INTER-STATE complete—with Eisemann Magneto—at **$1,750** is the biggest value on the 1909 market. We want you to see this car before you think of spending your money for a **cheap** car, or even for a higher priced car.

At the Chicago Show— The full line of INTER-STATE automobiles—including Standard Touring Car, Demi-Tonneau, Double Rumble Roadster, Single Rumble Roadster, and Tourabout—will be exhibited at the Coliseum, Chicago, February 6-13.

Dealers and agents will appreciate the opportunities opened to them by the INTER-STATE. Write for our proposition.

The Inter-State Automobile Co.

126 Willard St., **Muncie, Ind.**

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GABRIEL 1909



In order to maintain the high standard which the products of our factory have acquired, many improvements have been made in the 1909 models of The Gabriel Horn, The Gabriel Shock-Absorber and The Gabriel Cut-Out Valve. Gabriel Products still set the pace which competing lines try to follow.

A Polite Request



The rich mellow notes of THE GABRIEL HORN act as a polite request, not a harsh demand. It warns without frightening. By a new device its sweet, musical three note tone used for city purposes can be caused to rise in unison for a penetrating warning on country roads. The Gabriel Horn is used exclusively on the personal cars of King Edward of England, Emperor William of Germany, and other crowned heads of Europe.

1909 Gabriel Horn and Cut-Out Valve

We have perfected a new valve which is used both for operating exhaust horn and for cut-out purposes. For cut-out purposes, remove the disc in main channel thereby relieving back pressure from muffler through additional opening of 1¼ inches. Made to fit exhaust pipes 1" to 2½" outside diameter. Warranted to not stick under any condition.

Going Up

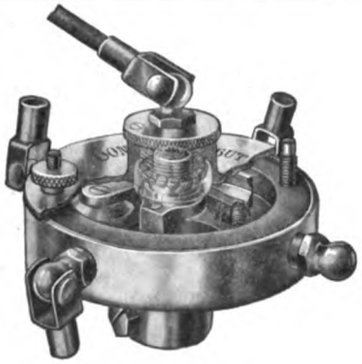
is pleasant enough, but coming down with a thud is what makes the nerves quiver and cry for

1909 Gabriel Shock Absorbers



A retarding friction gradually applied in proportion to the shock takes up all jolts and jars, and makes riding over rough roads or bumpy pavements a positive pleasure. The 1909 Model has improvements which give increased bearing surface, eliminate noise or rattle and greatly increase its efficiency and durability. Thermoid used for friction pad. Can be attached to any car or any type of spring. Write for booklet illustrating and describing our 1909 products.

Gabriel Horn Mfg. Co.
1417 East 40th Street
Cleveland, Ohio





CONNECTICUT







IF it's a COIL (1, 2, 3, 4 or 6 Cylinder), Distributor, Timer, Terminal, Coil Current Indicator, Ammeter, Switch or Exploring Lamp, we have them in Quality a little better than the best.

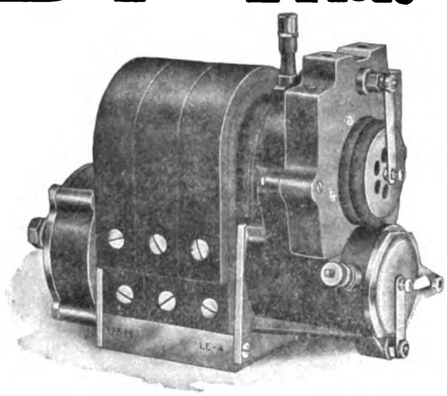
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CONNECTICUT TELEPHONE AND ELECTRIC CO.

85 Britannia Street, MERIDEN, CONN.

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The Magneto That Starts Itself



PAYING THE PRICE

To the average motorist of experience a magneto is chiefly desirable because it eliminates the troubles associated with the ordinary battery and coil system.. He can run all day for weeks together without having to think about battery depreciation, timer wear, or readjustment of the tremblers.

But with magnetos of the ordinary types, he has to pay for this immunity in physical effort every time he starts the engine. When he halts for a few minutes he probably pays for it in gasoline sooner than trouble to stop the engine and restart. If he would start easily, he must pay the price of a battery equipment in addition to the magneto.

With the UNTERBERG & HELMLE SELF-STARTING MAGNETO no battery equipment is needed or carried, yet the largest engine starts on the first half turn of the crank as easily as the smallest. The self-starting device gives a spark of maximum intensity, automatically retarded for safety past the center, no matter how slowly the starting crank is turned. It is the complete solution of the starting problem for magnetos.

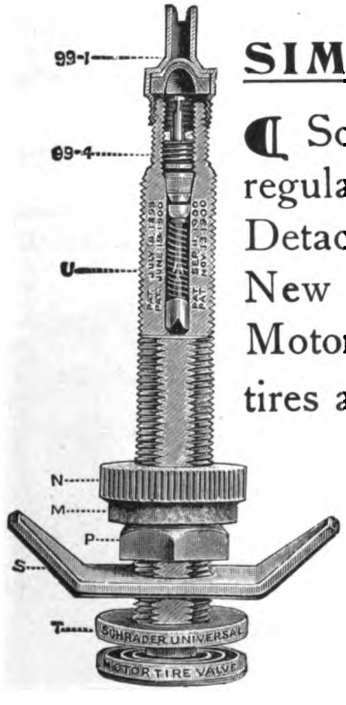
Type LE—The SELF-STARTING MAGNETO. Price $150
Type LB—Similar to LE, but without the starting device. Price.... 125
Type CB-4—For motors up to 35 h.p. Price..... 100

J. S. BRETZ COMPANY

Sole Importers, Times Bldg., New York.

Schrader Universal Valve

Trade Mark Registered April 30, 1895



SIMPLE AND ABSOLUTELY AIR TIGHT

¶ Schrader Motor Tire Valves, as shown in cut, are the regular equipment for G & J Motor Tires, Hartford Dunlop Detachable Motor Tires, Fisk Detachable Motor Tires, and New Goodyear Detachable Motor Tires. ¶ Our No. 777 Motor Tire Valve is the standard for 3-inch and smaller tires and our No. 725 Motor Tire Valve is the standard for tires larger than 3 inches.

Supplied to the Trade by All Tire Manufacturers

MANUFACTURED BY

A. SCHRADER'S SONS, Inc., 28-30-32 Rose Street, New York

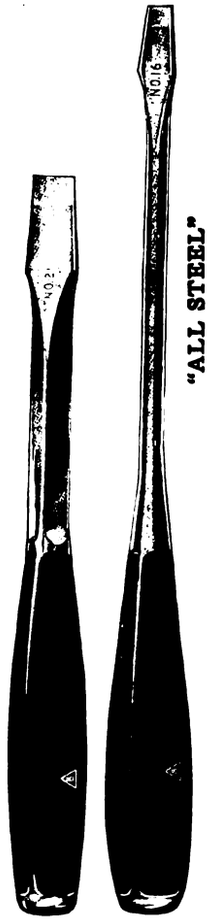
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"Everything Drop-Forged"

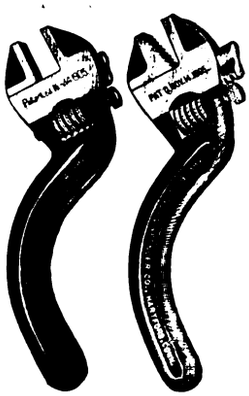
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They are readily adaptable
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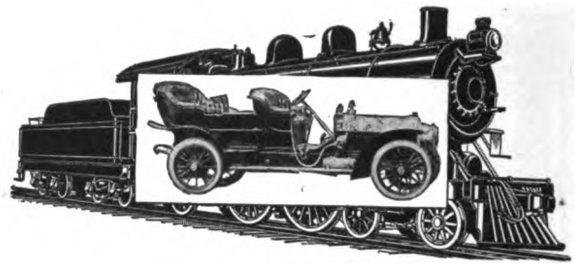
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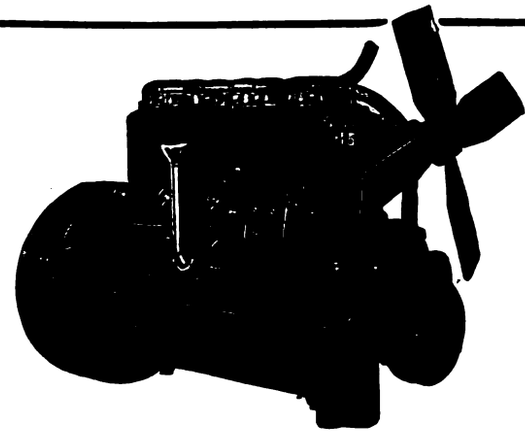
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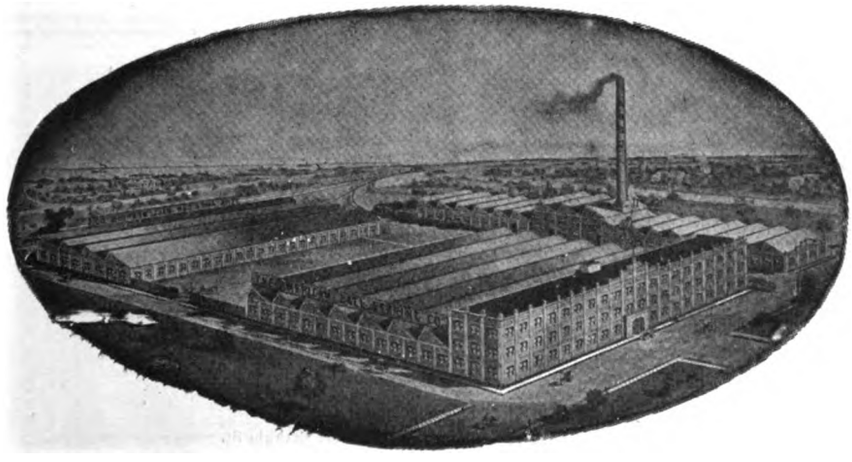
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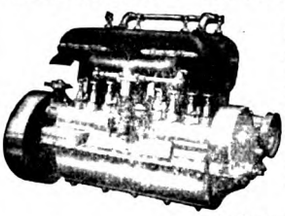
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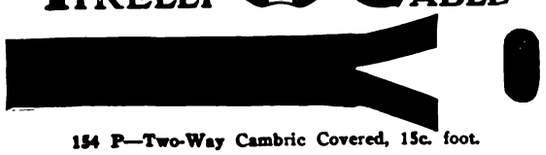
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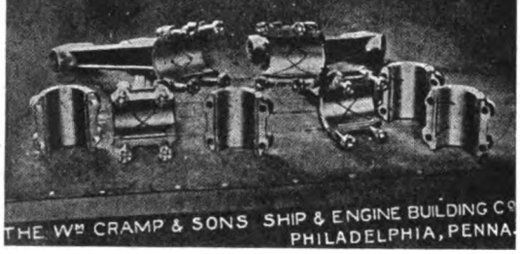
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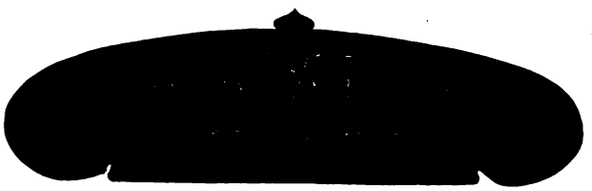
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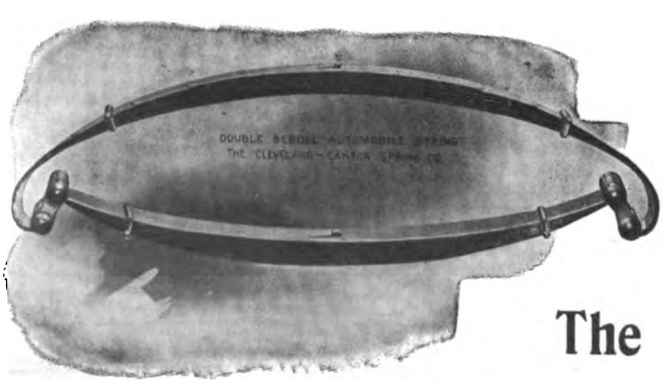
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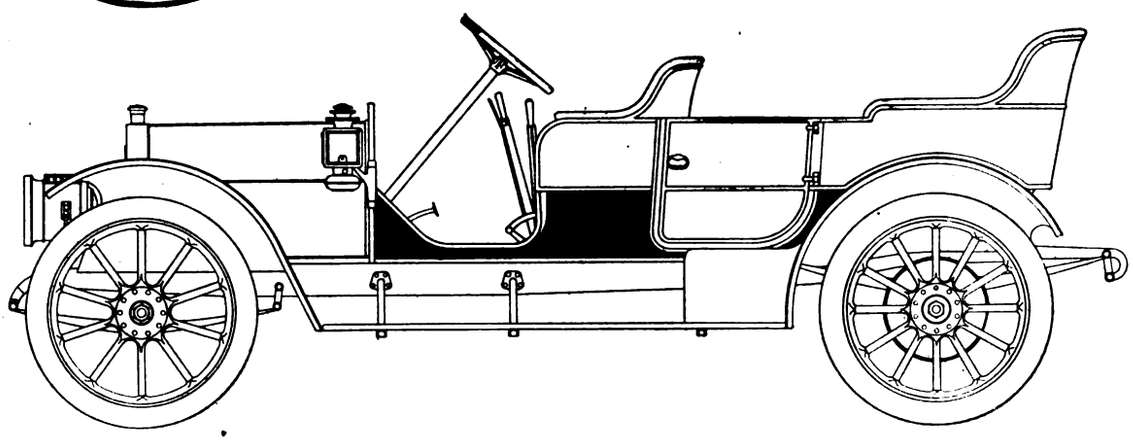
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GOOD design; a careful selection of scientifically tested materials; the exercise of greatest care in the manufacture of component parts; painstaking skill in their assembly, and a system of final inspection so comprehensive and complete that anything under 100 per cent. perfect cannot get through—that's Stearns production.

¶ Our new 15-30 is for those who would have a strictly high quality car at price and of power somewhat under the 30-60 horsepower model.

¶ Catalogued at 15-30 it develops close to 40 horsepower and, while of comparative light weight, is so staunch and sturdy that it will "stand up," as a good car should, even under unusual conditions of service.

¶ And, like our 30-60 (which is accepted as the standard of excellence in America), this new 15-30 model represents extreme high quality in every line and fiber.

¶ It is shaft drive, and designed to accommodate town and touring bodies.

¶ In our 30-60 horsepower model purchasers are given side chain or shaft drive option.

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examine the duplicates of the three winning 4-cylinder Matheson cars which finished in FIRST, SECOND and THIRD time places, against a field of 32 CONTESTANTS in the severest ENDURANCE CONTEST ever held in America, over the ice and snow covered mountain roads from Philadelphia to Wilkesbarre and return, 300 MILES, January 1 and 2, 1909.

These three Matheson cars have been driven by their owners 7,000, 12,000 and 18,000 miles respectively, before entering this contest.

"The most difficult, hazardous, even dangerous endurance run ever held in America." — *Philadelphia Public Ledger.*

4-CYLINDER MODELS		6-CYLINDER MODELS	
Tourabout	$4,350	Tourabout	$3,000
Touring Car	4,500	Toy Tonneau	3,000
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32 Cars Started in the Philadelphia-Wilkes-Barre Run

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ONE OAR OUT OF THAT FOUR PASSED THE SEARCHING INVESTIGATION OF THE COMMITTEE

Without One Single Demerit

THAT CAR WAS THE

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¶This announcement is of the final decision granting us the clean cut victory — as the only perfect car.

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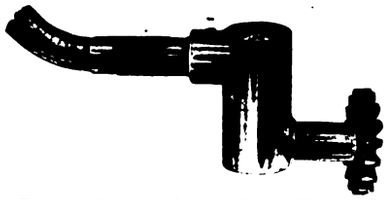
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Have the habit of sticking to the car and doing business at the highest speeds.

Stronger clamps, bigger screws and our patent swivel joint, which takes all the strain off the shaft, are some of the reasons.

A stronger and better flexible shaft helps also.

We have been the largest makers of flexible shafts for 20 years. Working all our bearing parts out of the solid instead of soldering makes a big difference.



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Stewart Speedometers

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A patented cam corrects readings at all speeds, a patented swivel joint at the wheel connection relieves the fexible shaft of short bends and all strain.

THESE FEATURES ARE EXCLUSIVE OF THE

Stewart Speedometer



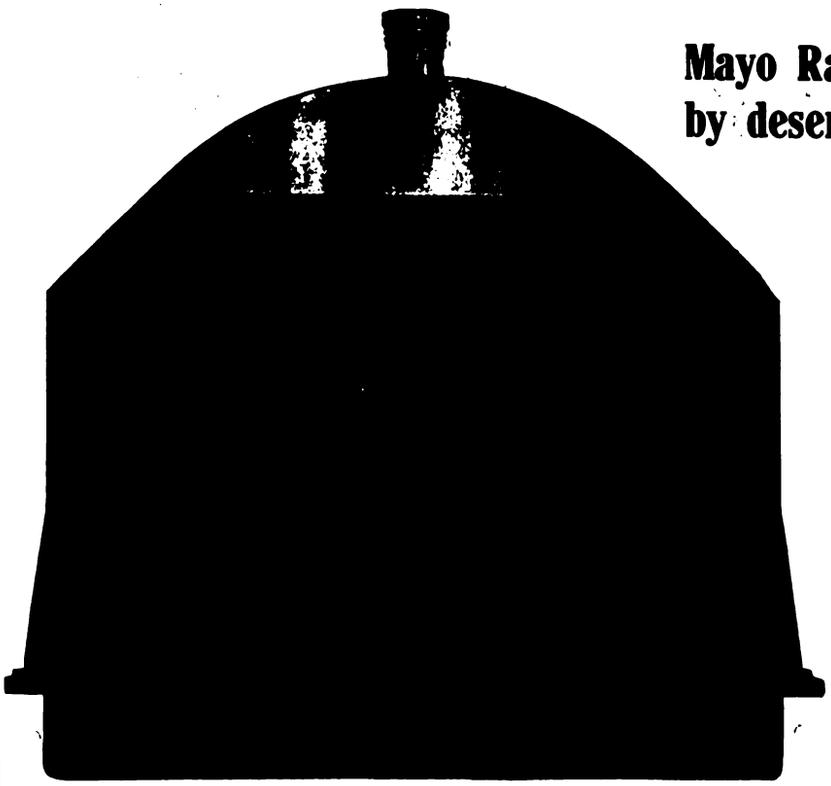
MODEL 4—Four-inch, 60-mile dial, enclosed season odometer and automatic resetting trip register and maximum speed hand, price **$40**

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Mayo Radiators have achieved success by deserving it, and in no other way.

¶ Therefore that success is presumably of the permanent and abiding kind.

¶ Price is the cause of the absence of MAYO RADIATORS from cheap cars.

¶ Quality is the reason for the presence of MAYO RADIATORS on most of the good cars.

¶ The only argument against MAYO RADIATORS is their price.

¶ Every other consideration dictates their use.

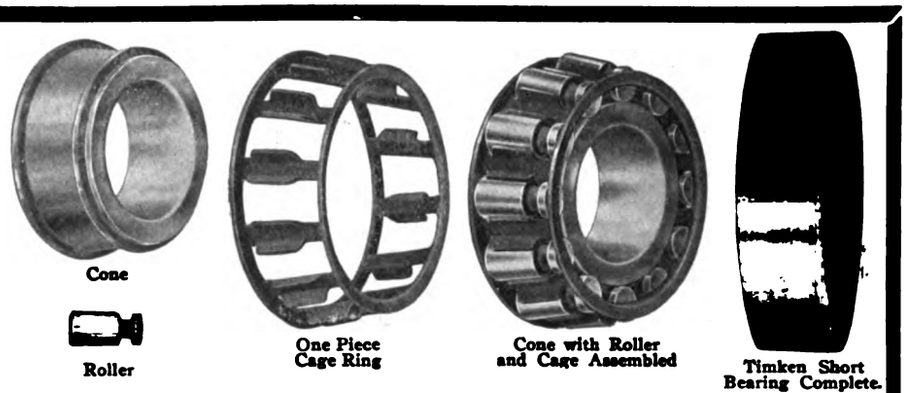
¶ MAYO RADIATORS combine sound mechanical principles, exact design, construction and workmanship, together with graceful appearance and perfect finish; in short, all the good qualities that go to make the ideal radiator.

¶ MAYO RADIATORS are stamped with the hallmark of class.

¶ MAYO RADIATORS are really the thoroughbreds of the radiator world.

¶ MAYO RADIATORS are made in the kind of a factory that befits them and by the MAYO RADIATOR COMPANY, at New Haven, Connecticut.

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In offering the Automobile trade our **New Series Timken Short Bearings,** we do so with the assurance that they are made from the same carefully selected steel and subjected to the same severe tests as our standard size Bearings.

The **New Series Short Bearings** are designed for use in axles where the bearings space does not permit the use of our regular series.

These Short Bearings can be used on any axle, transmission, or other places where Annular Bearings can be used. They carry **a much greater load** than Annular Bearings of the same length, **are smaller in diameter** and in addition will take as much **end thrust** as they do **radial load.**

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This is one reason why **65 per cent.** of the makers of high-grade Automobiles and over **90 per cent.** of the commercial truck builders of this country use **Timken** Roller Bearings. **WRITE FOR CATALOG AND PRICES**

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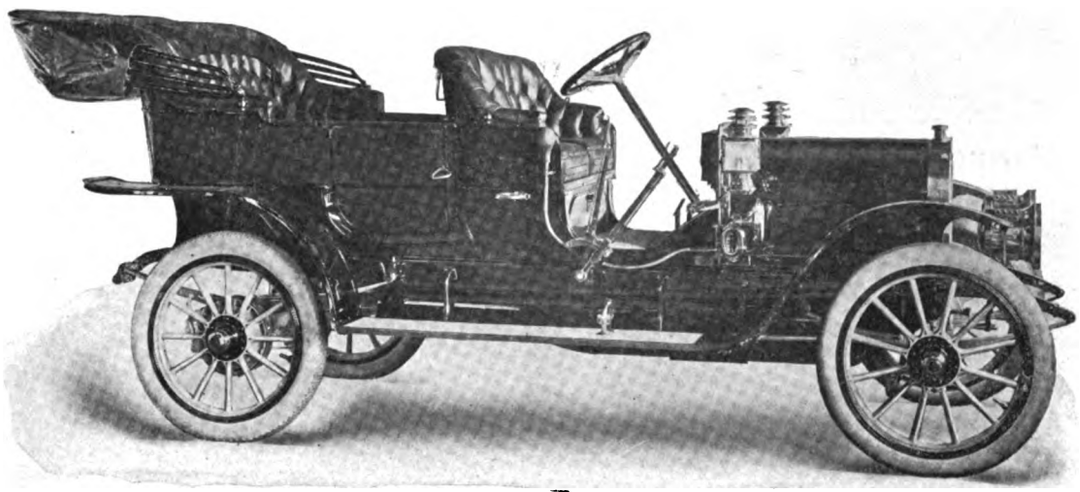
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MADE BY

"The Father of Them All"



One Price, $2,000. F. O. B. Rochester.

TOURING CAR, ROADSTER, TOY TONNEAU

A genuinely good car cannot be made and sold for less than $2,000. By this we mean a car like the Selden, containing nothing but the best of materials, workmanship and finish. A car that the manufacturer can stand behind and guarantee for at least a year against any imperfections in workmanship or material.

We buy only the best materials, employ only skilled labor and pay particular attention to details and finish, thereby producing a strictly high-grade car at the lowest possible price.

The up-keep and maintenance of a medium-priced car like the Selden is within the reach of any man of moderate means and the value of the car does not depreciate like that of the lower priced cars. This is the point to be considered by every purchaser.

The Selden Car is a 4-cylinder 28-30 horsepower (developing 37 horsepower) five passenger Touring Car or three passenger Roadster, with 114-inch wheel base, 34-inch wheels, shaft drive, selective control, pressed steel frame, metal body, fully equipped.

Superb riding, roomy tonneau, luxurious upholstery, smooth running, great hill-climber, flexible and easily handled, economical in maintenance and up-keep, fine finish, stylish and attractive.

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Catalog and Agency proposition upon request. Agencies wanted everywhere.

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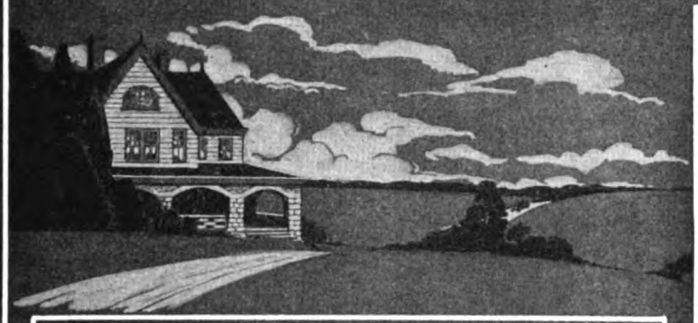
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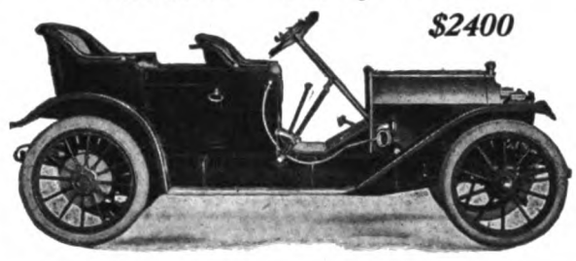
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"A Mechanical Masterpiece"





Marmon "Thirty-Two"
$2400



Value, Not Venture

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For over fifty years, its manufacturers have enjoyed a world-wide reputation as builders of high-grade mechanical products.

These facts will weigh heavily with the thoughtful buyer in considering the Marmon "Thirty-two." Light, powerful, and unsparingly equipped, it invites the most searching comparison with anything on wheels at $3,500 or less.

Motor, 4 Cyl. 4½x4½. Water-cooled. 32-40 H. P. Three-point support. **Ignition,** Bosch H. T. Magneto, dual system. **Lubrication,** Marmon system of automatic force feed through hollow crankshaft. **Drive,** straight line shaft. Selective transmission and rear axle one compact unit, very accessible. Large brakes, effective and very durable. **Materials,** absolutely the best of everything, including Krupp and Chrome Nickel Steels. Hess-Bright imported ball bearings. **Tires,** Q. D.,34x4. **Wheel base,** 112 in. **Weight,** 2100 lbs. **Equipment,** complete and high-class. **Bodies,** Sheet Metal. Touring Car seats five; Suburban (detachable tonneau) seats four; Roadster seats two. Also Coupe or Limousine Town Car.

Marmon "Fifty" (Seven Passengers), $3,750.

Nordyke & Marmon Co. (Estab. 1851) Indianapolis, Ind.

Standard Mfrs. A. M. C. M. A.

At Chicago Show, February 6-13.

The Easiest Riding Car In The World

THE MEASURE OF TIRE QUALITY

is not alone Length of Service but also Kind of Service

A tire that has to be coaxed by frequent visits to a repair shop is an inferior tire, even tho it may last a total of three, five or seven thousand miles.

MORGAN & WRIGHT TIRES

are long-lived tires, but the length of service is secured in the making of the tires and not by frequent doctoring by the users. They stand up as only tires can that are made as Morgan & Wright Tires are. And our rigid system of inspection protects you from any and all possible defects.

Morgan & Wright, Detroit

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Proclamation!

TO TRUCK OWNERS EVERYWHERE

THREE years ago when we applied the first Dual Side-Wire tire in America, we believed that we were introducing the newest and best thing obtainable in the shape of a MOTOR TIRE. And we were—the best thing up to that time. But times change; and we pride ourselves on trying to keep abreast of them. Careful study and observation of the solid tire situation abroad, have firmly convinced us that the side wire tire is now a back number and must graciously step aside for the newer and better product.

WE accordingly beg to announce that we are now manufacturing a NEW tire, which for service, security and resiliency, completely eclipses the side wire type. It is the

Gibney Wireless Motor Tire



CROSS SECTION—DUAL TYPE

THIS is not an untried experiment. These tires have been the standard of Continental Europe for the past five years. They have triumphed abroad; they will make good here.

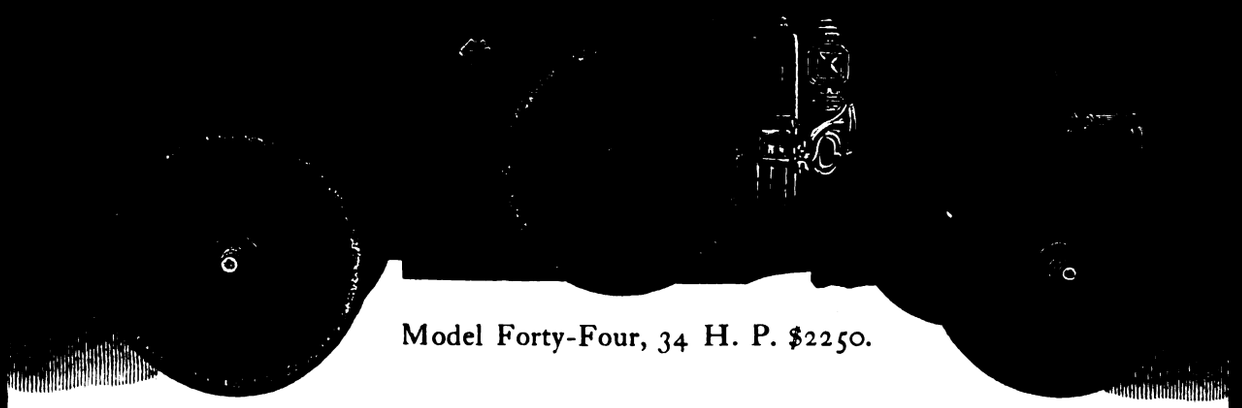
WRITE FOR OUR PRICES AND OUR COST PER MILE GUARANTEE—IT WILL INTEREST YOU

JAMES L. GIBNEY AND BROTHER

PHILADELPHIA, PA., U. S. A.

AGENTS WANTED EVERYWHERE.

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Model Forty-Four, 34 H. P. $2250.

THE RAMBLER SPARE WHEEL

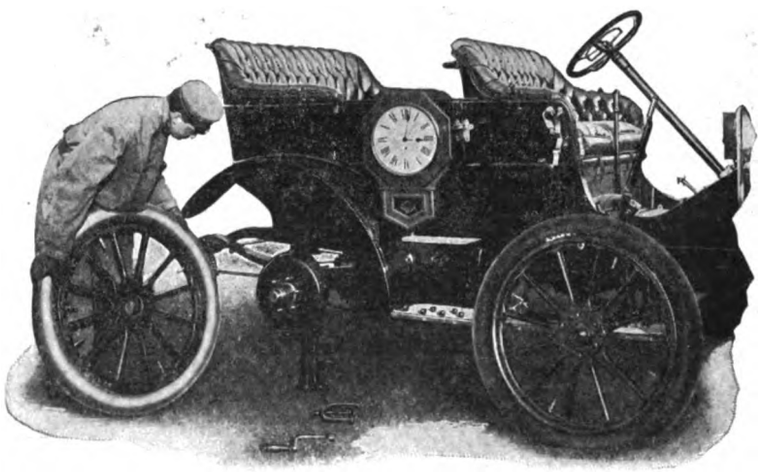
All the new four-cylinder Ramblers are fitted for the Rambler Spare Wheel—a wheel complete—excepting the hub center, on which is carried a complete tire inflated. The regular wheel is secured to the hub center by six bolts. Removing the six nuts for these bolts this wheel can be detached in two minutes with the special tools provided, and the Spare Wheel put on and secured in three minutes.

Wheel fits either front or rear. Solves the tire problem. Extra wheel available in case of need. Spare Wheel with inflated tire, brackets and tools, for Model Forty-Four, $74, for Model Forty-Five, $85.

Rambler

The Car with the Offset Crank Shaft

Seven passenger model, forty-five horse power with offset crank shaft, $2500. Other models, $1150 to $2500.



Write for catalog describing in detail Rambler offset crank shaft, Spare Wheel, straight line drive and other exclusive features of the new Rambler models.

This shows the simple manner in which the regular wheel can be removed and the Spare Wheel substituted within three minutes.

THE CAR OF STEADY SERVICE

Thomas B. Jeffery & Company, Main Office and Factory, Kenosha, Wis.

Branches and Distributing Agents:

Chicago, Milwaukee, Cleveland, Boston, New York, San Francisco. **Representatives in all leading cities.**

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, January 28, 1909. No. 18

TIMKEN FORMS DETROIT COMPANY

Separate Corporation for the Huge Axle Making Project—Lewis to Manage the New Plant.

The location in Detroit, Mich., of a Timkin factory for the manufacture of automobile axles, as announced exclusively in the Motor World recently, is accompanied by the formation of a new company, to be called the Timken-Detroit Axle Co., incorporated under Michigan laws with a paid-in capital of $650,000. Inasmuch as the Detroit plant is to be the largest automobile axle factory in the world, with an annual capacity of not less than 25,000 axle sets per year, the new company was determined upon as the most satisfactory way of managing it, but it is closely affiliated with the Timken Roller Bearing Axle Co, of Canton, O., and comes into possession of all the patent rights, experience and good will of the latter.

So close is the relationship that all of the stock of the new concern is held by E. W. Lewis, secretary of the Canton company; A. R. Demery, its superintendent; H. W. Alden, mechanical engineer and designer; and H. H. and W. R. Timken. The general manager and active head at the axle plant will be Lewis, who with Demery and Alden, will move to Detroit, while H. H. and W. R. Timken will manage the Canton plant, which will hereafter be devoted entirely to the production of Timken bearings and which, through the removal of the axle manufacture, will be enabled to increase its output to meet the constantly enlarging demand.

By no means the least interesting feature of the new undertaking, which will add much to Detroit's prestige as an automobile industrial center, is the great confidence which the men at its head entertain as to the future magnitude of the motor car industry. Supplying so large a proportion of the prominent automobile factories with the Timken products, they are able accurately to judge conditions in the trade and forecast its future, and the hugeness of their present undertaking is a symbol of the certainty with which they regard the continued increased activity of automobile production.

Fitch Making Automobiles in Rome.

Backed by members of the Fitch Gear Co., a new automobile manufacturing concern is starting operations in Rome, N. Y., to make runabouts, touring cars and delivery wagons of both the high wheel and low wheel types. It has not as yet been named or incorporated, but sample cars are being produced at the Fitch Gear factory while the finishing and sales departments are located at the plant of the Maxwell-Fitch Co., in West Dominick street.

Tempting Salina with a Factory.

If Salina, Kan., will raise $40,000 cash and buy stock in a new automobile company which has been incorporated in Topeka, the company will look with such favor on Salina that it will locate its plant there. The glittering offer comes from Kelly & Kelly, of Topeka, brokers of which H. B. Kelly, ex-state senator, is the head. He says that the company is being organized with $125,000 capital.

Jones Handles Mezger Products.

The products of C. A. Mezger, Inc., of New York, including Soot Proof spark plugs and Automatic wind shields, will in the future be handled by The Jones Speedometer, New York, which has undertaken their sale and general distribution throughout the country. Complete stocks will be carried at the Jones branches in Boston, Philadelphia, Baltimore, Cleveland and Chicago.

Takes New York Coil Sales.

In addition to its other lines, the Factory Sales Corporation, of Chicago, has taken the product of the New York Coil Co. The latter company makes both high and low tension coils, including a multiple coil with master vibrator for magneto service.

SCARRITT BACKS A CAB PROJECT

Generously Capitalized Jersey Corporation to Invade the Metropolis—Will Absorb Small Operators.

Taximeter cab competition in New York City, which promises to develop to fever heat, is promised further enlivenment by the formation of a $2,200,000 concern in which Winthrop E. Scarritt, one time president of the Automobile Club of America, and Harlan W. Whipple, former president of the American Automobile Association, are the moving spirits. It has been incorporated as the Taxicab Service Co, under the laws of New Jersey, but its chief activities will be in Manhattan, where one or two of the smaller motor cab companies now operating will be absorbed. The stock is divided into $1,000,000 preferred 7 per cent. cumulative and $1,200,000 common.

Taking over the business of the company now operating from the Waldorf and the Holland House, together with its vehicles, the new company will enlarge its equipment by extensive purchases of more cabs of the same type, made by the American Locomotive Works, of Providence, R. I. An effort will be made to popularize the cabs in the lower downtown district, below Fourteenth street, where taximeter service so far has been scarce.

Atlanta Has a Motor Car Plant.

Automobile manufacture in Atlanta, Ga., is to be pioneered by the White Star Automobile Co., capitalized at $150,000 and backed by Clarence Houston, of the Atlanta Buggy Co., together with Harry W. Anderson, Frank J. Long, Dr. S W. Foster, Hugh R. Fischer and others. The company has already made its first machine, which has been in operation since last September, and a complete floor of the buggy company's large new plant, at Ponder's avenue and Means street, will be used for the concern's manufacturing operations

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In the Retail World.

O. A. Burd & Son have opened a large and well equipped garage at Lambertville, N. J. The repair shop is in hands of competent mechanics and a full line of accessories will be carried.

The Tennessee Automobile Co., of Nashville, Tenn., began business this month on Broadway near Twelfth street. J. J. Vertress, Jr., is president and James K. Polk, Jr., secretary and treasurer.

The D. P. McClure Garage, Second and Green streets, Ottumwa, Ia., has been purchased by M. A. Stuil, formerly with the Stearns Auto Co. In addition to having the agency for several cars, he will carry a full line of accessories.

Wilson H. Stoyle and Lewis G. Vogel, doing business as the Stoyle Automobile Co., of Philadelphia, Pa., have taken an automobile salesroom at the southeast corner of Broad and Race streets. Their establishment at 1521 Spring street will be retained as a storehouse and garage.

E. G. Mertens, formerly a traveling salesman for the Electric Vehicle Co., Hartford, Conn., has purchased an interest in the Glens Falls Automobile Co., of Glens Falls, N. Y., and was elected its vice-president at a recent meeting. The concern has the agency for the Thomas, Cadillac and Pope-Hartford lines.

Reduction of Goggle Duty Refused.

Repeated recent efforts to import automobile goggles at a rate lower than the 50 per cent. imposed on "goggles" by the Dingley tariff, have met with failure, the importers suffering another defeat in the latest decision on this subject by the board of United States general appraisers, at New York. The attempted differentiation of "autogoggles" from mere pedestrians' "goggles" having been altogether too fine for the appraisers to discover, the importers have taken the ground that the motor goggles should be returned for duty at 45 per cent. either as "lenses" or as being composed in chief value of metal. In overruling protests filed by Saks & Co., and by Sussfield, Lorsch & Co., neither of these contentions is upheld by General Appraiser Sharretts, the decision remarking that the use to which the goggles are put is identical whether they are worn by automobilists or others.

Riker Attacked by Laryngitis.

A. L. Riker, designer for the Locomobile Co. of America, is ill at his home in Bridgeport, Conn., with a severe attack of laryngitis contracted at the Garden show in New York. Although confined to his bed, his physician expects his complete recovery in two weeks.

Robbins to Represent Oakland.

Oakland cars are to have adequate representation in Chicago through the establishment of a branch in that city by the Centaur Motor Co., of Buffalo, general selling agents for the Oakland Motor Car Co., Pontiac, Mich. The branch, which will occupy the building formerly used by the Rainier Co., at 1725 Michigan avenue, will be in charge of Arthur M. Robbins formerly with the Aerocar Co., and more recently with the Rainier in the Windy City.

Los Angeles Branch for Firestone.

To distribute Firestone tires for southern California, a new, direct branch of the Firestone Tire & Rubber Co., Akron, O., has been established at 957 South Main street, Los Angeles. The management is in the hands of G. C. Calbetzor, formerly Pacific Coast manager, and also Frank R. Talbott, who has resigned as assistant treasurer and leaves the home office at Akron this week to assume his new position.

John Gets Inter-State Territory.

Geo. C. John, manager of the New York City branch of the St. Louis Car Co., has obtained the agency for the Inter-State cars in New York, New Jersey and Connecticut. The machines are the product of the Inter-State Automobile Co., of Muncie, Ind., which has sprung into recent prominence, as a result of the active campaign undertaken by Sales Manager David W. Henry.

Lynch to Make Continental Tests.

A new department of tests has been inaugurated by the Continental Caoutchouc Co., of New York. It will be in charge of Tom Lynch, who will devote his time to testing each type of Continental tire in actual road work of from 150 to 200 miles per days.

Manchester Has a Motor Car Fire.

Fire at the Sullivan Automobile Garage on Myrtle street, Manchester, N. H., on Wednesday, 27th inst., caused a loss on cars estimated at $40,000. The conflagration was caused by the falling and breaking of a lamp.

Van Sicklen is Knox Chicago Manager.

N. H. Van Sicklen, formerly publisher of the Chicago moiety of the Siamese twins, has undertaken the opening of a Chicago branch for the Knox. He will take over the business of the present agent, J. H. McCausland, at 1458 Michigan avenue.

Richert to Push Allen-Kingston.

Ben Richert, well known in New York City trade circles, has undertaken the sale of the Allen-Kingston line, with headquarters at No. 3 West Forty-fourth street. The Allen-Kingston cars are made by the Bristol Engineering Co., of Bristol, Conn.

Whitlock Returns to Empire.

W. G. Whitlock, who resigned some time ago from the Empire Automobile Tire Co., Trenton, N. J., has resumed his old connection. He will again represent the company in the sales department.

The Week's Incorporations.

Clintonville, Wis.—Badger Four-Wheel Drive Auto Co., The, under Wisconsin laws, with $50,000; to manufacture automobiles.

Chicago, Ill.—Velie Motor Vehicle Sales Agency, under Illinois laws, with $25,000 capital. Corporators—W. L. Velie, Harry M. Moore and O. E. Mansur.

Syracuse, N. Y.—Taxicab Garage Co., under New York laws, with $25,000 capital; to operate cabs. Corporators—H. L. Conde, L. Conde, J. H. Walrath, Syracuse.

Council Bluffs, Ia.—Sperling & Triplett Co., under Iowa laws, with $10,000 capital; to deal in automobiles. Corporators—Henry Sperling and B. P. Triplett.

New York City, N. Y.—Taxicab Service Co., The, under New Jersey laws, with $2,200,000 capital; to operate taximeter cabs. Corporators—Winthrop E. Scarritt, Henry K. Picking and James Mapletoft.

Buffalo, N. Y.—Pierce-Arrow Motor Car Co., The, under New York laws, with $1,500,000 capital; to manufacture motor cars (succeeding the George N. Pierce Co.). Corporators—G. K. Birge, H. May, C. Clifton, W. H. Gardner, W. B. Hoyt, Buffalo.

Johnson Serves Second Injunction.

Persisting in its endeavors to have the municipality of Milwaukee make its automobile bidding open to as many manufacturers as possible, the Johnson Service Co., of that city, has obtained a second injunction forbidding the board of public works from accepting bids under the new set of specifications which it drew. It is alleged in the supplemental complaint that following the serving of the first injunction, the board advertised for bids for an automobile under specifications that exactly describe one well known make of machine and that it would be impossible for anyone but the manufacturer of that machine to comply with the specifications with the 45-day delivery date required.

Motor Buses for Washington

Despite the failure of its "automobile street cars" several years ago, Washington, D. C., is to have a line of motor buses, to replace the antiquated herdics which the Metropolitan Coach Co. operates on Sixteenth street. Five machines, representing three prominent makes, are being tried out. A three or four minute schedule will later be put in force, and with a five cent fare passengers will be given transfer privileges to and from the lines of the Washington Railway & Electric Co.

Bowman, of Boston, Burned Out.

The J. W. Bowman Co., Boston agency for the Stevens-Duryea, was burned out Tuesday, 26th inst., by a fire which destroyed the four story brick building at 911 Boylston street. About $30,000 worth of the company's cars on the ground floor and in the basement were saved only by quick and heroic action

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ASSEMBLING IS NOT MANUFACTURE

So Declares Recent Ruling on New British Patent Law—Complete Local Production Held to be Essential.

Methods of meeting the requirements of Great Britain's new and stringent patent law have been devised with a view to relieving American holders of British patents from the necessity of establishing complete factories for their patented articles in the British borders, but a recent decision appears to make them unavailing. Many legal advisors in the United States have held that, because in most cases the parts of a patented construction are not covered by patent but only the mechanical combination as a whole, it will be sufficient to manufacture the parts in America and have them assembled in Great Britain, in order to meet the requirement that British patents be "adequately worked" in Great Britain to avoid annullment. This contention, according to the British-American Co., of Coventry, England, "has been knocked on the head" by the British courts.

"By a decision just given—the second decision under the new act—an American's patent, No. 26519 of 1906, on a lockstitch machine, has been revoked," the English company explains to its American correspondents, in suggesting the city of Coventry as a locality where American firms may find factories and skilled labor. "In this machine most of the parts entering into its composition were manufactured in the United States and imported, and together with some parts manufactured here, were assembled for sale. The Comptroller General ruled that the American patentees had not 'adequately worked' their patent in England by merely making a small number of substituted parts. It seems to us, therefore, that assembly here will not serve to protect the rights of American patent owners, and that nothing short of complete manufacture on this side will suffice."

Details of New Pope Incorporation.

The new Pope Manufacturing Company has filed with the Connecticut state secretary a certificate of organization. The amount of capital with which the company was authorized to commence business, $3,000, has been paid in in cash. Of the preferred stock, 25,000 shares of the aggregate par value of $2,500,000 have been issued and 40,000 shares of the common stock of the aggregate par value of $4,000,000 The certificate states that the amount paid thereon in cash is $3,000 and in property other than cash, $6,497,000. Harry Bronner, Frederick H. Ecker and August Heckscher of New York hold seven shares of the common stock each, and the following hold one share each of the common stock: Milton Ferguson, Albert Stickney and Henry V. Poor of New York, Albert L. Pope, George Pope, Charles E. Walker and Wilbur C. Walker of Hartford, Arthur W. Pope of Boston and Lewis H. Freedman of New York, and 39,970 shares of the common stock are held by Harry Bronner, Frederick H. Ecker and August Heckscher, as the reorganization committee of the Pope Manufacturing Company, which also holds the 25,000 shares of the preferred stock.

How the Palace Show Melon Cuts up.

Such were the profits of the American Motor Car Manufacturers' Association show at the Grand Central Palace, New York, that the Importers Salon and the Motor and Accessory Manufacturers, which shared in the fortunes of the affair, are to receive a return from the show of 67 per cent. of the amount paid for space. At a full meeting of the A. M. C. M. A. committee of management, held at the New York headquarters on the 21st inst., the show committee made its report which proved the Palace event to have been a record breaker both in attendance and sales. The show committee, consisting of H. G. Smith, chairman; S. H. Mora, R. M. Owen, Benjamin Briscoe, E. R. Hollander, D J. Post and Alfred Reeves, general manager, was extended a formal vote of thanks for its management of the exhibition. At the same meeting a standard form of warranty was adopted, and matters concerning good roads and routine affairs were acted upon. It was announced that the annual meeting of the A. M. C. M. A. will be held in Chicago, on Tuesday, February 9.

Motor and Accessory Officers Chosen.

At the meeting of the board of directors of the Motor and Accessory Manufacturers, held at the Waldorf-Astoria, New York, on the 21st inst., officers for the association were chosen as follows: President, H. E. Raymond, B. F. Goodrich Co., Akron, O.; first vice-president, H. T. Dunn, Fisk Rubber Co., Chicopee Falls, Mass.; second vice-president, F. E. Castle, Atwood-Castle Co., Amesbury, Mass.; third vice-president, C. E. Whitney, Whitney Mfg. Co., Hartford, Conn.; treasurer, W. S. Gorton, Standard Welding Co., Cleveland, O.; secretary, P. S. Steenstrup, Hyatt Roller Bearing Co., Newark, N. J.

Importers' Stockholders Elect Officers.

The annual stockholders' meeting and election of the Importers Automobile Salon was held at the association's offices in New York on the 21st inst., and resulted in the choice of W. H. Barnard, the vice-president of last year, as the president to succeed Andre Massenat, C. Allen succeeds himself as treasurer, while E. Rand Hollander was chosen secretary. The board of electors for the coming year consists of Andre Massenat, Harry Fosdick, C. Andrade, Jr., and Julien Block. The general manager of the Salon will be Walter H. Lee, as heretofore.

HARVESTING OF THE GARDEN SHOW

Results as Seen in the Effect Upon the Business of Exhibitors—Total Attendance Reported as 110,000.

For newspaper consumption the representatives of exhibitors at the big automobile shows have in the past taken great latitude in their estimates of the sales, to a point where the joke of the makers selling their "entire output for the year" first at New York, later at Chicago and again at Boston, grew to grinning proportions, but the results of the Licensed show at Madison Square Garden more than confirm the evidence of the Palace show which preceded it, as to the healthy conditions existing in the relations of the automobile industry with the public. Far from absolute correctness as the newspaper estimate of $7,139,000 in business done at the Garden may be, it is certain that the actual business received by both car and accessory exhibitors was in the majority of instances very much greater than was anticipated, according to a confidential canvass.

While a few of the makers are doubtful whether the show increased their business in proportion to the cost of exhibiting, the greater number were able to give evidence of surprisingly large lists of retail sales, not to mention the agency business closed. There were disappointed accessory exhibitors, too, but here again the larger portion of the accessory people received an almost unprecedented volume of both retail and agents' business.

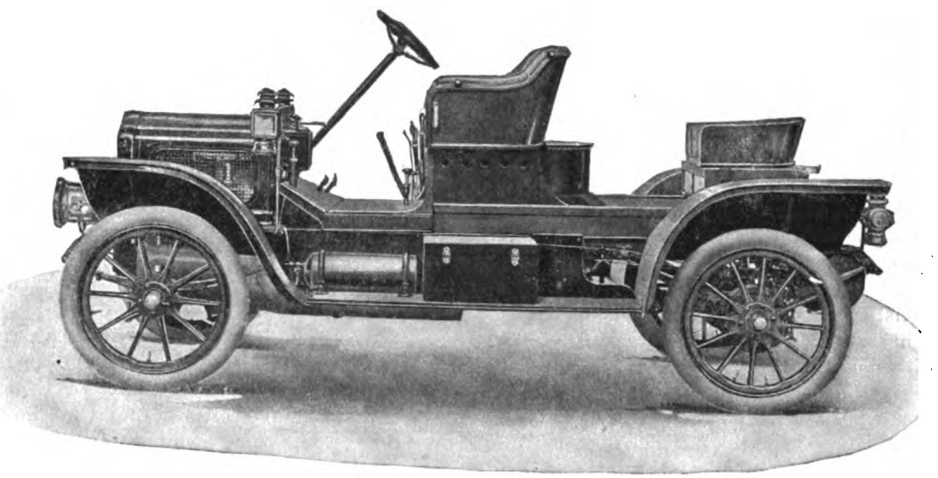
Colonel George Pope, chairman of the show committee of the Association of Licensed Automobile Manufacturers in summing up the results of the show declared the attendance to have exceeded 110,000 for the week, and that because of the fact that most of the exhibiting makers had already concluded their agency arrangements, the retail buyer and user was predominant.

In the opinion of several of the better known car exhibitors, who enjoyed a larger retail sale than at any previous show, an excellent state of general business is indicated by the freedom in retail buying, being a reflection of prosperity restored Incidentally it is said that the work of the salesmen was made much easier this year by the improved average of technical knowledge on the part of the buying public.

When the show week had well advanced, members of the trade were busy in discussing the almost unexpected immensity of the coming season's automobile activity as promised by the evidence. In this connection H. S. Firestone, of the Firestone Tire & Rubber Co., Akron, O., estimated the 1909 American production of cars at 72,500, an estimate based on his knowledge of the number of tires for which the automobile manufacturers are contracting.

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Write for the New White Catalog



We have recently issued our complete 1909 catalog. In it are shown the full line of the new Model "M" and Model "O" cars—touring cars, runabouts, town cars, limousines and landaulets.

We have given considerable space to an explanation of the advantages of the White Steamer, as compared with cars of other types, and we believe that this section will prove especially interesting and valuable to those who are contemplating the purchase of any make of automobile.

The catalog includes a full illustrated description of the construction of the White, with especial attention given to the engine—the simplest used in any automobile, and to the generator—the White steam-making device which is as different from the ordinary boiler as day is from night. You should read this section carefully if for no other reason than that you may be well informed regarding the construction of "The only car of distinctively American design."

A postal to us will bring a copy.

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ATLANTA, 120-122 Marietta St.

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NEW YORK, JANUARY 28, 1909

The Motor World's Forecast of the Chicago Show will appear in the issue of February 4th. The Chicago Show Number will bear date of February 11th, and will neither be written from catalogues nor compiled in advance.

Trade Government of "Sport."

Mr. W. H. Hurlburt, himself in the trade, is quoted as saying that the only thing manufacturers and tradesmen generally should have to do with sport is nominating entries for the various forms of competition, or in other words, the trade should have nothing whatsoever to do with its government. Assuming that the quotation is correct, Mr. Hurlburt deserves credit for stating all of a very large truth in a very few words and in striking the nail squarely and exactly on the head.

When trade enters into sport it ceases to be sport and becomes business and as it is an artificial adjunct of business, when the trade abandons it—as ultimately comes to pass—no sport remains. This, as the Motor World many times has pointed out, is the chief trouble with automobile sport.

The private owner—the amateur who is the foundation and real life of all sports—has been sacrificed, so to speak, on the altar of mammon. Because of the overwhelming domination of trade influence in the race-governing project recently undertaken in New York, we fear the situation will be little improved, if at all, this is to say, we fear we will continue to have competition not as a sport, but as a business and apparently conducted more like a business than ever before.

The Motor World does not lack sympathy for the project in question. Since the American Automobile Association declined to play a man's part and practically threw to the dogs a branch of the sport which it deemed too dangerous or too unladylike to be longer handled, it is plain that a governing hand of some sort is necessary to prevent the dogs from swallowing the cast-off and to assure the public at least the semblance of a square deal.

But to be the unpress-agented success it should be, the project must have as its rulers not tradesmen or men with selfish interests to serve, but men free and disinterested and whose only interests are the good of the sport. It matters not who they may be or how honorable or how unselfish they may be at heart and in spirit or even in performance, the fact remains that no men in the trade—no men engaged in sport for business reasons, ever can hope to be wholly above suspicion of self-interest. Those who know them may be well aware of the real truth, but the world is wide and peopled with many and divers orders of mankind.

Business Bringing Garage Details.

Garage equipment is a matter which would appear to require but a comparatively small outlay, either of cash or brain, outside such details as relate to the equipment of the repair shop and provisions for the safe keeping and handling of gasolene and other inflammables. At the same time, the sharp rivalry which exists in all cities and in many small towns between the proprietors of neighboring establishments of the sort makes it imperative that efforts should be made to cater to the patron in every possible way. On this account a good deal of thought may be given profitably to matters connected with the installation of such devices as cater to the convenient and expeditious handling of the machines, as to their care and well being.

Apart from arrangements for washing, refilling and handling the cars, no small return may be gained on a relatively insignificant investment in sudry labor-saving appliances for the use of the operatives. This is especially true, since in many cases, the provision of special appliances means their use, where with only hand labor available, the tasks they are intended to perform might be gone over hastily or even skimped altogether under the lax eye of a careless foreman.

Thus, the provision of a complete system of air piping so that flat tires may be inflated without the necessity of moving the cars at all, or not more than a few feet at most, may save a customer's tires from standing on the rim for a period of days, or even weeks. Similarly, convenient charging appliances for ignition batteries may mean the frequent replenishment of cells which otherwise might go too long without attention. The provision of an ample number of sockets for connecting portable inspection lamps, and also for connecting in portable brass polishing wheels is another little matter which involves an inconsiderable outlay in proportion to the convenience it brings. And incidentally, where the brass is cleaned by machinery it is likely to be better and more frequently cleaned than where the old hand operation must be gone through with. Still another convenience which might be instalied at slight cost, and which would be particularly appreciated in garages where any number of closed cars are handled, is a vacuum cleaning outfit. Compressed air, such as is carried in the tire inflating line, might be made to serve the purpose, but the results obtained from its use are hardly satisfactory as compared with those derivable from the use of suction. Such an outfit, piped to a point on or near the wash rack, for example, might be made the means of drawing not a little desirable business to a garage which otherwise might be diverted elsewhere. Similarly provision for excluding dust from floors which are used exclusively for storage purposes or any other device for preserving the finish of the machines, is certain to be appreciated.

The point is this, that the average chauffeur is mightily impressed with a place in which "everything is fixed just right," and

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that he is prone to like to stable his machine in a garage where orderliness and despatch are the rule. The keeping of cars really clean and sweet, appeals to the owner as much as skilled execution of repairs or an economical statement at the end of the month. Therefore the garagemar who is anxious to advertise his business would do well to make his equipment as well as his administration such that every customer will be enlisted in his service to that end.

A New Feature in Show Business.

To the casual visitor at the great national automobile shows in New York and Chicago, the vast undercurrent of trade business which underlies the surface of the exposition is absolutely unknown and unappreciated. He may become aware in some way, that trade business of one sort or another is in progress, but of the vast extent of that business, or its growth, he is as little aware as are many who are better acquainted with the industry as a whole. As a matter of fact, the tendency to put off as much business as possible until show time, has been growing each year. At first, when outputs in some measure depended upon the amount of sales business closed at the show, there was an obvious reason for withholding contracts for parts and supplies until the latter part of the week. During the past year or two, however, the discovery that many of the more important firms which were obviously free from any questions of chance were falling into line, led to recognition of the fact that the show as a wholesale mart for raw and partially manufactured parts and supplies has come to be of tremendous value to the trade.

Just how significant this aspect of the show season is at present, is revealed in one striking instance in connection with the Garden show of last week. A well-known firm manufacturing at a distance from New York foresaw the wisdom of importing to the show its chief engineer and practically his entire corps of assistants. Instead of roaming aimlessly about the Garden from day to day, however, these men were closeted in a nearby hotel on each of the six days of the show, and from half past eight in the morning until five at night. During the more or less formal sessions held, matters pertaining to the 1910 output in all its phases, were discussed. Representatives from makers of parts, accessories and even the producers of raw material were summoned and subjected to rigid examination, the exhibits at the show were freely utilized for demonstration purposes, and in a word, practically all of the details for the production of an output 30 per cent. greater than that of 1909 were arranged on the ground. Subject to revision in the interim, tentative contracts made under those circumstances will be ratified at a similar conference held during the Chicago show, so that the windup of material contracting for the entire year's business will be accomplished practically without a single mile of travel or a dollar of expense outside of what would have been required otherwise in order to afford the engineering staff opportunity to study the shows.

It has long been the custom of parts and accessories makers to utilize the show season for measuring cars on the stands and preparing specifications for their own products. Likewise not a little parts and accessory business has been transacted in a more or less spasmodic way. But the idea of manufacturers going to the show with the absolute intention of making use of the great gathering of tradesmen from all parts of the country and representing all the side lines of the industry in transacting business which otherwise would require weeks of correspondance and much contingent expense is a new and distinctly radical development, which is bound to become more general as time goes on.

It is clearly apparent that "dollar day" has outgrown its period of usefulness and ought to be effaced from all show calendars. Its original aim of clearing the stands of the non-purchasing crowd in order to afford possible buyers a better opportunity of viewing the display is no longer effective, if indeed it ever was. "Society nights" fail to draw the social high-lights to any better advantage than other nights, so far as can be observed, while the attempt to convert the show into a social function merely serves to cut down the attendance for the time being very noticeably. That those who do avail themselves of the better opportunity of viewing the show bring in sufficient return to compensate for the loss of publicity and possible business involved in the shutting out of the 50-cent audience never has been demonstrated.

Even before the doors of the Madison Square Garden were closed on Saturday night the ready reckoner had performed his deadly work; and the next day the whole world knew that motor cars to the value of $7,000,000 had been sold during the week. If the r. r. had not been so circumstantial, he might as easily have made it an even $10,000,000, but he felt called on to give the exact number of cars sold by each exhibitor. There is no doubt that some of them at least hope the figures do not lie.

COMING EVENTS

January 25-30, Cincinnati, O.—Automobile Dealers Association's show.

January 27-February 3, Philadelphia, Pa.—Automobile Trade Association's eighth annual show, Second Regiment armory.

February 6-13, Chicago, Ill.—National Association of Automobile Manufacturers' show, Coliseum and First Regiment Armory.

February 15, Detroit, Mich.—Detroit Automobile Dealers Association's show, Wayne Pavilion.

February 15-20, St. Louis, Mo.—Automobile Manufacturers and Dealers Association's annual show.

February 16-18, Denver, Co.—Denver Motor Club's first annual show, Auditorium.

February 20, 21, 22, New Orleans, La.—New Orleans Automobile Club's Mardi Gras carnival 3 days race meet.

February 20-27, Newark, N. J.—New Jersey Automobile Trade Association's show.

February 20-27, Hartford, Conn.—Automobile Dealers Association's show.

February 22, Omaha, Neb.—Omaha and Council Bluffs dealers' show, Auditorium.

February 22, Cleveland, O.—Cleveland Automobile Dealers Company's show, Central Armory.

March 1-6, Buffalo, N. Y.—Buffalo Automobile Club's 7th annual show, Convention Hall.

March 6-13, Boston, Mass.—Boston Automobile Dealers Association (Inc.) seventh annual show, Mechanics Building.

March 8-15, Kansas City, Mo.—Kansas City Automobile Dealers Association's show, Convention Hall.

March 10-13, Memphis, Tenn.—Automobile show, Auditorium building.

March 13-20, Minneapolis, Minn.—Minneapolis Automobile Show Association's show, National Guard Armory.

March 15-20, Rochester, N. Y.—Rochester Automobile Dealers Association's show, Convention Hall.

March 22-25, Ormond-Daytona Beach, Fla.—Daytona Automobile Club's four days speed carnival.

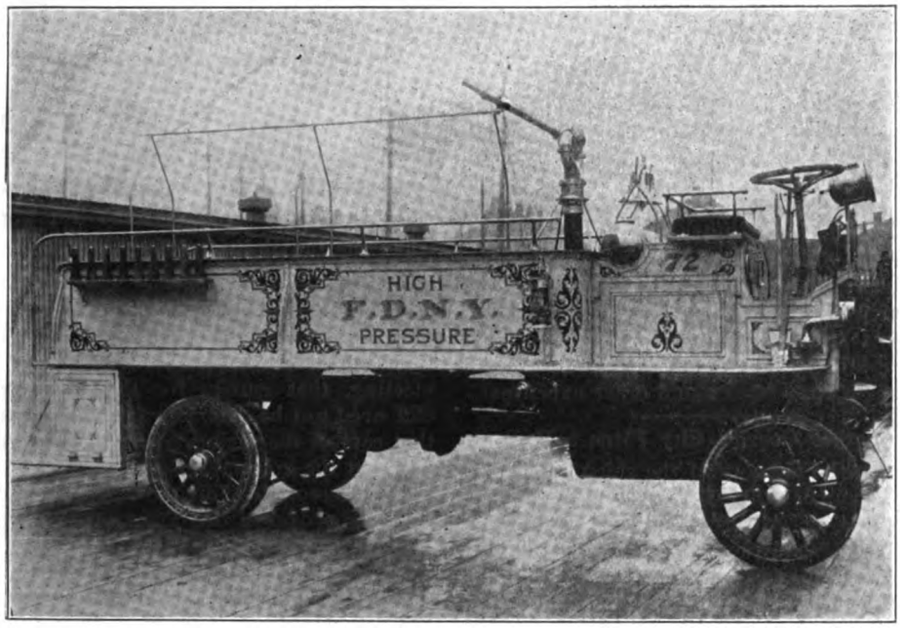
March 27-April 3, Pittsburg, Pa.—Automobile Dealers Association's show, Duquesne Garden.

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IMPROVES HIGH PRESSURE SERVICE

Automobile Hose Wagon Added to New York's New Fire Fighting System—Duty Test Pleases Chief Croker.

By way of completing its high pressure service equipment, the New York City Fire Department recently invested in a motor-driven high-pressure hose wagon the performance of which is likely to be watched with considerable interest because of its possibilities as an important connecting link in what is recognized as one of the most radical as well as the greatest system of its kind ever put into operation. The wagon, which was built by the Knox Automobile Co., to the department's specifications, is driven by a 50 horsepower, four-cylinder motor, and was exhibited in the basement of Madison Square Garden during the show of last week, where it attracted no little attention because of the initials, "F. D. N. Y." painted on its white sides. After the close of the show at midnight, Saturday, it was removed to the new repair shops of the Fire Department at 56th street and 12th avenue for mechanical inspection, and the following day was driven to the marine fire station at the foot of Gansevoort street.



NEW YORK'S HIGH PRESSURE AUTOMOBILE HOSE WAGON

The trip down town was made under service conditions, and with the right of way clear, the machine developed no less than 28 miles an hour by speedometer measurement, despite its own weight of 5 tons, and the equal load carried in its equipment. At the dock, water at 300 pounds per square inch pressure, was supplied by the fireboat Thomas Willett through parallel lines of high-pressure hose. Various tests were made, the stationary nozzle working satisfactorily at all angles and throwing a stream a maximum distance of 125 feet.

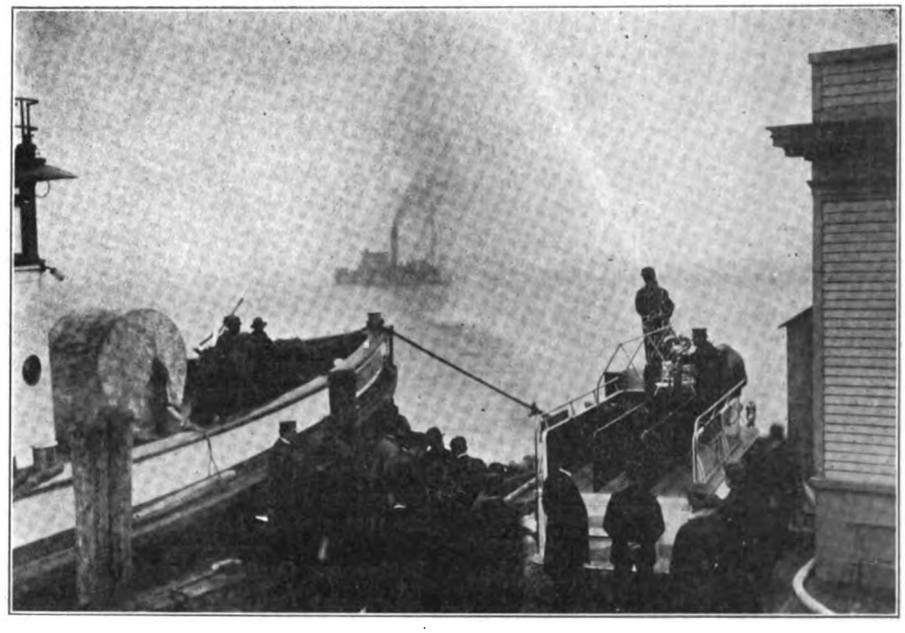
After the test, Chief Croker, who with Commissioner Whitney and other officials of the department witnessed the test, expressed himself as thoroughly satisfied with the results and hopeful as to the prospect of service with the machine.

"This piece of apparatus is an important addition to the department," he said. "It carries plenty of hose, is faster than any horse-drawn machine and is just what is needed. In fighting a fire the first few minutes are the most important. It is this feature that makes the automobile type of apparatus so desirable."

The machine is built upon ordinary commercial vehicle lines, so far as the method of chassis construction and body mounting are concerned, though the open body is of heavy sheet metal with riveted and reinforced joints and seemingly extraordinarily heavy. The body, in fact, is in design an almost exact copy of the regular type of high pressure wagon, and is capable of carrying 2,000 feet of 3-inch hose. It has a rated speed capacity of 30 miles an hour over city pavements, has 154 inch wheel base, and is shod with solid tires. those in the rear being of the twin type.

The motor is mounted vertically in front, the radiator coming flush with the dash and the driver's seat being raised to a considerable elevation over it, as in ordinary commercial vehicle design. Directly back of the seat is mounted the standard for the fixed nozzle to which the high-pressure hose is connected, while the usual rack for tarpaulins and the extra nozzle stands are mounted over the centre of the body and at the sides in the rear respectively. The mechanism of control is the same as is used in ordinary practice except that a steering wheel of very large diameter is employed. Transmission is by cardan shaft to the gear box, which is mounted centrally of the chassis, and thence by double side chain to the rear wheels.

The first practical test of the machine occurred yesterday (Wednesday) when it responded to an alarm caused by a fire on the fourth floor of the six story building Nos. 115-118 West 17th street Starting from Station No. 72, on East 12th street, between Fifth avenue and University Place, for which it was ordered, it reached the scene of the fire some three-quarters of a mile distant in three minutes from the sounding of the tapper. Only the high pressure apparatus was used in subduing the blaze, and the new truck was said to have worked to the complete satisfaction of the officials in charge on the occasion of its first real service.



VIEW OF HIGH PRESSURE HOSE WAGON IN ACTION

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OLDFIELD LEADS ALL THE WAY

Makes Seyfried Take Dust Throughout Five Miles Match at San Diego—Both Fail in Attacks on Records.

Having rebuilt the old White Flyer, which was wrecked at Ascot Park, Los Angeles, a short time ago, and having nursed it back to health, Gus Seyfried made an effort to beat Barney Oldfield at San Diego, Cal., on Sunday, 17th inst. The Coronado, the scene of the race meet, was packed almost to capacity, by a crowd that had been told that Oldfield was going to lower world's records, a promise Oldfield has occasionally made before. This driver, however, did not succeed in clipping any fractions of seconds from existing records and in his attempt to touch the mile mark, he came nowhere near the figures of 0:51 flat made by Ralph De Palma in the Fiat last fall.

Nevertheless when Oldfield in his six-cylinder Stearns lined up, with Seyfried at the wheel of the freakish looking White, for a 5 miles match, the former got the jump at the start, and thanks to the dust he managed to raise, succeeded in holding the lead throughout the race. Seyfried followed closely in his wake, but Oldfield having secured the pole on the first turn, kept it all to himself, his method of swinging curves forcing Seyfried to slow down several times to avoid a collision. Seyfried kept eating the dust until the fifth lap, when he made a strong attack in the homestretch but Oldfield nosed in first by a small margin, the time being 5:56⅘.

Earlier in the afternoon, Earl Pfeiffer, in a White steamer, won the 3 miles event for cars listing at $3,000 and under, in 5:04, his competitors who were on a slow running schedule, giving him no trouble. Then Oldfield let out his car in a 3 miles event and romped in first in 2 minutes 56⅗ seconds. His fastest lap was made in 0:56⅗.

Seyfried drove alone for a 3 miles exhibition, which he covered in the lively time of 2:54⅕, after which a special 2 miles race for the Spreckels trophy was won by R. Naylor in a Stearns, and the wind-up event, a 3 miles handicap, free-for-all, was captured by Seyfried in the White Flyer to the tune of 3:31⅗.

The summaries:

Three miles, open to cars costing $3,500 and under—Won by Earl Pfeiffer, White steamer. Time, 5:04.

Three miles—Won by Barney Oldfield, Stearns. Time, 2:56⅗. Fastest mile, 56⅗ seconds.

Three miles exhibition—By Gus Seyfried, White Flyer. Time, 2:54⅕.

Five miles novelty race; stops to be made to take on passengers and drop them, the last mile to be finished alone—Won by a White; second, Tourist. Time, 9:18.

Five miles match, Oldfield and Seyfried—Won by Barney Oldfield. Time, 4:56⅗.

Special two miles race for Spreckels' trophy—Won by R. Naylor, Stearns. Time, 2:46.

Three miles, handicap, free-for-all—Won by White Flyer. Time 3:31⅗.

Motor Parkway Patrol Gets Its Pay.

If Sheriff Joseph H. Foster, of Nassau county, had writer's cramp on Wednesday last, it is not to be wondered at, for he signed very close to 1,000 checks. In his sleep that night, he signed 15,000 more, but that has nothing to do with the case. It seems that after months of long, weary waiting, the special deputies and flagmen who patrolled the Long Island course during the Sweepstakes and Vanderbilt Cup race last fall, have at last received their pay. The checks, which were for $6 each (two days' pay), were soothing syrup to many of the impatient ones who had grown petulant with protracted waiting. In connection with the paying off of these debts, it was stated at Mineola last week that there still remains about $10,000 in unpaid bills, for road repairs and other expenses.

Another Georgia City Plans a Race.

With the memory of the splendid success of Savannah still in mind, automobile enthusiasts of Albany, Ga., are planning a 150 miles road race to cover a circuit, beginning and ending at that place. The date of the contest has not been definitely decided upon as yet, although it is expected to be set for the middle part of February. Practically all of the drivers who have promised to enter are private owners and the roads over which the contest is scheduled to run, will include both good and bad varieties, as no preparation or resurfacing will be done in anticipation of the event.

Crack Drivers for Mardi Gras Meet.

In addition to numerous local entries for the New Orleans Mardi Gras race meet to be held February 20-22, a number of positive entries of New York dealers have been made and several star drivers will be seen in the 24 hours race and the short distance events. Among those who will appear are Lewis Strang, driving an Isotta, his old love; Ralph De Palma with the Fiat; two Renault cars, one of which will be handled by Basle, while several other well known drivers are being negotiated with to drive cars that already have been entered.

Bridgeport Cards Memorial Day Climb.

Memorial Day, May 31, has been fixed upon as the date for the Automobile Club of Bridgeport's annual hill-climbing contest, and the contest committee already has commenced active preparations for the event, which is to be the fourth of its kind. It has not as yet been decided where the contest will be held and two hills, Sport and Snake, are both under consideration. Last year the climb was held with success on Sport hill.

ANOTHER BRIARCLIFF REVISION

New Rules Practically Restore Limitations of Last Season—Cars of the Racing Type Eligible for Entry.

For the third time within a few weeks, the rules for the Briarcliff trophy race were changed on Monday last, 25th inst., at a meeting of the committee of management, held at the Automobile Club of America. As is well known, the rules promulgated at the two previous meetings caused no little dissatisfaction on the part of several makers, so after a long discussion on Monday, it was decided to agree to a larger bore and the limitations now are practically the same as they were last spring when the initial Briarcliff contest was run.

As the rules now stand, a bore of 5¾ inches is the maximum, and there are no limitations as regards stroke, and no weight limit. It was also resolved as at the last meeting, that entries for the next Briarcliff need not be "stock" cars, which means that cars of the racing type will be eligible, and that the original purpose of the contest is to be ignored. This, however, is subject to the approval of the donor of the trophy, Walter W. Law.

The vacillations of the committee in the matter of adopting a set of restrictions for the cylinder dimensions of competing cars have been amusing. When the first meeting was held on December 16, the maximum bore was placed at 5¼ inches; the minimum weight 2,600 pounds, and the minimum wheel base 110 inches, there being no stroke limit. This caused trouble right away and at a second meeting called a few days later, the limitations were changed as follows: Maximum bore, 5⅜ inches; maximum stroke, 6 inches; minimum weight, 2,300 pounds, and minimum wheel base, 118 inches. The new ruling, which requires a bore of not more than 5¾ inches applies to four-cylinder motors, as did the previous sets and cars with different numbers of cylinders will be required to show an equivalent piston bore area in the aggregate in order to qualify for entry.

Pittsburg Schedules a Three-Ply Run.

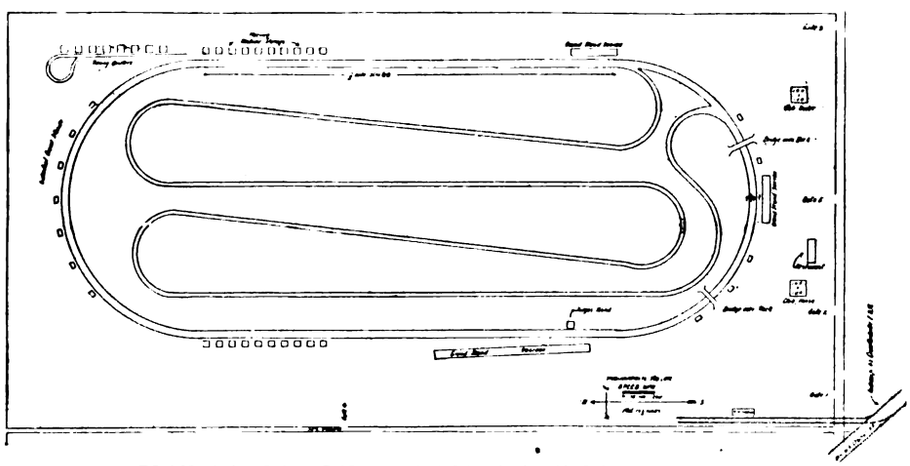
Pittsburg, Pa., is to have a three days endurance run on March 17, 18 and 19, under local newspaper auspices of the Chronicle Telegraph and Gazette Times. It will be held along the usual lines of endurance tests, cars being divided into price classes, with awards for the best performance in each class. Approximately 150 miles per day will be covered over three different routes with Pittsburg as the starting and finishing point of each day's trip, and contestants with tied scores at the finish, if there are any, will be required to start out and cover the route a second time on an elimination run.

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MOTORDROME FOR INDIANAPOLIS

Company Organizes to Build a Big Combination Track and Course—Specifications of the Construction Plan.

From present indications, Indianapolis, Ind., is to have a pretentious new motordrome within a few months. The Indianapolis Motor Speedway Company recently organized with a capital stock of $200,000, expects to start work on the construction of the new enterprise by February 15. Details of the course have just been announced. On a tract of land covering no less than 320 acres, an oval is to be constructed measuring 2 miles in circumference, 50 feet in width in the stretches, with banked turns 60 feet wide. Inside this oval, there will be a road course composed of three loops running lengthwise symmetrically and joining the main course at one end. These measuring altogether 3 miles, will be about 25 feet wide on an average with 35 foot turns.



PLAN OF PROPOSED MOTORDROME AT INDIANAPOLIS

This construction will permit of combination road and track racing, and in the entire course a complete round with its numerous turns will be 5 miles. The straightaway stretches on the loops will be more than one-half mile long, to make short distance speed trials possible. The promoters believe that the scheme will furnish track and road facilities for driving and testing cars at high speed and long distances, to a degree such as never before has been attempted. The ground will be equipped with ample training quarters and space for camps during contests; there will be three main grandstands with a seating capacity of 35,000, and 20 smaller stands placed at intervals about the course. The two miles oval will be equipped with a new lighting system, 420 arc lamps with reflectors throwing light ahead of the drivers, so that 24 hours races can be held under most favorable conditions.

A club house of the Indianapolis Motor Car Club is to be erected on the grounds, in addition to which a restaurant and cafe building for the public will be put up. The officers of the new company are: President, Carl G. Fisher; vice-president, A. C. Newby; second vice-president, F. H. Wheeler, and secretary and treasurer, James A. Allison.

The company expects to make an effort to obtain the Jefferson De Mont Thompson stock chassis race as an opening event for this course and while this is rather doubtful, the concern is taking steps to affiliate with the American Automobile Association. The promoters also are desirous of obtaining an international event for the West each year, and a cup valued at $5,000, to be known as the Wheeler-Schebler cup, has been promised for the purpose, while for lesser race meets arrangements are being made for the provision of liberal prizes that will exceed in value the more customary rewards for winners

Atlantic City Has a Motordrome Vision.

The Estates & Mortgage Co. is the style of an enterprise incorporated last week under the laws of New Jersey, and which is alleged to have purchased a tract of 400 acres of land on Chelsea Heights along the Meadow boulevard, Atlantic City, N. J., upon which there may be built one of those numerously unbuilt motordromes of gigantic proportions. The promoters claim to have $1,000,000 to spend on the venture and expect to build a 2½ miles oval course, with the intention of holding a series of weekly race meets during the summer season. In connection with the track, a large concrete garage and other buildings will be, or may be erected.

The original sponsor of the scheme was a New York sporting man who removed to Atlantic City and who hit upon the motordrome idea when his business became dull due to a wave of morality which swept the seashore resort. His prospectus called for a permanent automobile show among other things, and revealed prodigious profits on the stock which was to be offered for sale. He figured that two or three hundred manufacturers would pay from $1,000 to $5,000 each for the privilege of exhibiting.

NEW PLANS FOR RACE CONTROL

Makers Take Steps to Organize a National Governing Body—Will Take Further Action During Chicago Show.

Since the American Automobile Association decided to abandon all control of racing on circular tracks, the matter of race government has been very much in the air with probabilities strong that the manufacturers would yield to the temptation to step in and assert their own pretentions to the control of sport. Just this has occurred, the first steps toward the formation of a new racing association body, which is to be composed entirely of manufacturers and dealers, having been taken on Thursday last, 21st inst., when a meeting of a number of the makers who were exhibiting at the show and others, was held in Hotel Victoria, New York City. Percy Owen, who was temporarily placed in the chair, outlined the general idea of the proposed organization, urging the present need for a governing body, national in scope, citing the desirability of sanctioned race meets in place of the tendency to the promotion of wildcat affairs as is the case at present. The matter of cylinder dimensions and weight limits is another thing that is bothering manufacturers who are being forced to build various sized cars for various races, at great expense, and was suggested as presenting ample opportunities for legislation.

In connection with this, H. E. Coffin of the Chalmers-Detroit Company declared: "It is obviously foolish to class all motors together. What we want are rules to classify stock cars, and we ought, besides, to have open races with broad limitations, so that engineers and designers might have the opportunity to exercise their ingenuity in the production of new models."

George H. Strout, of the Apperson Automobile Co., suggested that the new body should consist of 25 manufacturers or importers who have been consistently identified with racing and that they in turn appoint a committee to consist of two manufacturers and three experts in no way connected with the manufacture or sale of cars, to formulate rules. This plan seemed acceptable to those present.

A temporary organization committee was appointed to notify all the manufacturers as far as possible, of the second meeting. This, it was agreed to have take place at Chicago during the week of the coming show—February 6, 1909—at which representatives of makers are to be invited and permitted to have a voice in the new project.

As yet the organization is without a name, but the title American Motor Racing League, has been suggested as a suitable designation for it.

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BUSINESS VIEW OF GLIDDEN TOUR

Some Pertinent Suggestions Concerning the Choice of Route—Consideration for the Manufacturers' Interest.

Now that the manufacturers have come to express more openly their purely trade interest in automobile contests in general, it is interesting to note the various considerations which are being taken into account in the formation of plans for the forthcoming Glidden touring contest, in which provisions are now made for the trade entrant without any attempt at concealment.

Frankly considering the tour as an advertising investment pure and simple, questions as to the route, which yet remains to be chosen, assume an importance hitherto unrecognized by the public — perhaps by even the managements of former tours. The success of the tour from the maker's point of view, in a word, depends largely upon whether it is laid through a country which is barren from the standpoint of the salesman or equally profitable, and this attitude is particularly enlightening as revealed in the following interview which is credited to Fred L. Estey of the Studebaker Automobile Co., who discusses the respective merits of various routes which already have been proposed.

"Is the interest of the automobile manufacturer, who really pays the expense of the Glidden tour, to be given consideration, or will the next Glidden be arranged on the basis of a St. Patrick's Day parade, in which the ambition of every participant is to have the pageant pass his own front door"? Estey inquires.

"In reaching this interrogation point," he continues, "I am governed partly by the fact that guessing on the probable route of the next Glidden has assumed the importance of a national winter pastime, and partly by persistent rumors to the effect that Mr. So-and-so of the touring committee demands that the tour visit his home town, and that Mr. Somebody-or-other wants to play 'My Old Kentucky Home,' on an auto horn, at Bardstown, Kentucky, the birthplace of that well-known and venerable tune.

"I have passed through Bardstown in an automobile; have visited the Old Kentucky Home for several pleasant hours; have inspected the famous bell which Louis Phillippe of France presented to the Bardstown church, according to tradition; have visited several distilleries in the neighborhood, and slept (four in a room) in the 115-year-old hotel at the picturesque town, but as an automobile mart, Bardstown does not impress me as a particularly important shopping center.

"Not yet, in my belief, has Kentucky reached the motor car buying stage which would warrant the manufacturer in expending the necessary amount of money to grant a dozen employes the luxury of a drowsy tour through the 'still' district of the neighboring mountains and sleepy hollows.

"Still another much-discussed possibility is the long tiresome run from Omaha to Denver, over highways where speed laws are a joke; where farmhouses are 15 miles apart, and no hotels worthy of the name from one end of Nebraska to the other.

"To be sure the Nebraska farmer is a persistent buyer of automobiles; in fact has been enthusiastic so long that a motor car may be seen in nearly every farmyard, but the possible future market does not demand an expenditure of $10,000 worth of advertising on the part of each manufacturer who backs the Glidden tour.

"From careful study of the situation, after touring the Central West for several months, I am impressed that any selection of a route which does not include the great cities of the northwest will be a business mistake. Minneapolis, St. Paul, Duluth and Milwaukee and the smaller but none the less prosperous cities of Wisconsin and Minnesota, are absorbing automobiles in large quantities and cars of excessive value as well as low-cost machines are enjoying a ready sale.

"Iowa, too, while not as populous as some states, is buying more cars in proportion to the population, than any other state in the country. There are no big cities in the state but every hour the tour might pass through a city of enterprise and importance.

"The average wealth in Iowa is greater than any other state in the Union with the exception of conservative Massachusetts and the farmer is keen to buy an automobile with speed enough 'to get away from his neighbor's dust.'

"Missouri is impractical as a touring state for the Glidden, though there are reasons why St. Louis or Kansas City should be visited, even though the state may not be crossed. It would not be feasible to go to both cities. St. Louis now harbors less than 1500 automobiles all told and needs an awakening of its 800,000 possible buyers. Kansas City is the buying centre for the corn and cattle belt of the southwest and is enthusiastic for the tour. It is a fair market for high-priced cars and an excellent centre for moderate and low-cost automobiles.

"It is noteworthy that nine out of ten prospective routes mentioned are based on sentiment rather than on plain business sense, yet, several years have passed since the Glidden enjoyed an amateur aspect. It is high time that the manufacturers express themselves forcibly for a route which will net them ample return for the expenditure of time, thought and money in the country's greatest advertising pageant, the Glidden tour."

REVISION OE QUAKER CITY AWARD

Disqualification of McNamara's Premier Said to be Revoked—Miller's Matheson Relegated to Second Place.

It is reported that on Tuesday of this week the contest committee overruled the ican Automobile Association overruled the decision regarding the winner of the Quaker City Motor Club's Philadelphia-Wilkes-Barre endurance run, held on January 2 last. According to R. M. Owen & Co., agents of the Premier car in New York City, the contest committee overruled the prize award of the Philadelphia club and decided that the Matheson car which was given first place is not entitled to it, in view of the performance of the Premier entry driven by Ray McNamara. In regard to these two contestants, the point at issue was whether or not the Quaker City Motor Club's committee erred in disqualifying the Premier for unloading its passengers, while passing a stalled competitor on an icy grade on Giant's Despair mountain, in order to regain traction. Aside from this incident, McNamara's car had a perfect score, which was considerably more than the rest of the 32 contestants could boast. Upon examination by the technical committee, this car did not receive one single demerit; its nearest competitor, Miller's Matheson, being charged with 11 points. With the reinstatement of the Premier, the contest committee of the A. A. A. decided that this entry was entitled to the McDonald Campbell trophy.

Whether or not the Quaker City Motor Club or the Matheson entrant had any voice in the investigation of the A. A. A. contest committee or whether the decision was official, could not be learned on Wednesday at the headquarters of the American Automobile Association. It was said that Chairman Hower had left town and the Secretary of the association could not tell where any other members of the contest committee could be located, and was unable to make any official statement in regard to the case.

Automobiles Race on Bicycle Saucer

French promoters will go to any extreme for the sake of providing the patrons of their velodromes a few thrills above the ordinary. Witness the automobile match race at the Velodrome d'Hiver, Paris, January 10th, between Sizaire and Naudin, makers of the voiturette which bears their joint names. The track measures only five laps to the mile and is steeply banked for bicycle racing. Despite the fact that it was barely wide enough for the two racing voiturettes Sizaire and Naudin electrified the crowd by a neck and neck race until something happened to the machine driven by the latter. Sizaire finished the 10 kilometres in 8 minutes 20⅘ seconds.

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TAKING IN THE WHOLE SHOW

Impressions of Lay Visitors as Gathered by a Motor World Scout—Their Odd Inquiries and Comments.

"—— And then the gas is compressed by the compression stroke and the explosion is caused by a tiny spark igniting the mixture at the physiological moment—" explained an intelligent demonstrator at the show to a person uninitiated in the mysteries of the gasolene motor. But the Motor World scout paused no longer at that booth to learn more about "mixtures" and "physiological moments"; he proceeded on his way to see more of the wonderful things displayed in that arena of the "Circus Maxims," as the press agent called it—that remarkable Ninth annual show of the Association of Licensed Automobile Manufacturers.

While this exhibition was hardly like the every day circus at the Paris resort, made famous by a certain Widow not long since, nevertheless if one were to go to old Maxims, where fun and frolic, etc., holds forth, one would hardly find the girls more pretty, dainty and witty, than a goodly portion of that Directoire peach crop which bloomed nightly in the tonneaus and front cushions of the many handsome cars displayed. Do-do, Chlo-Chlo, Jou-jou and Velia were all there and while "a thing of beauty is a joy for a joy-ride," as a salesman, who seemed to know very little about his product remarked, these mesdames distracted as much attention as they attracted to the cars. Some of the prospective and near-prospective purchasers of machines were kept so busy looking into the fine points of the cars' feminine adornment, that they neglected to note the fine mechanical features. On Tuesday, 19th inst., "Society night," there was an array of gowns that would have done credit to any horse show. "Society night," it must be explained, is the night upon which everyone who is not a member of the smart set, tries to attend, in the eager hope of getting mentioned in the "among those" list. The real "400" do not appear that evening.

Ah! See what's here! Look at the queen sitting in that runabout right back of the fountain. How the hot-house diamonds and fishskin pearls gleam! Looks like a showgirl. She is ill at ease, because the man who plays the pink spot-light on the fountain will not flash its beams in her direction. "Come on, Mame," she says to her less radiant friend, "Let's us go look at the toy tonneaus."

"Toy tonneaus? What's them?" Mame inquires.

"You know, those Brownie cars that they make for kids to play in. Little Hennie seen one at the last show and wants one."

Right over there was the Knox car exhibit. This car, the attendants said, was "all the poison" at numerous hill-climbs last year—Knox vomica, as it were. They confided to some persons that the company intends to put out a six-cylinder car in 1910. Nothing was said by them about the spark occurring at the proper time and the thought came a-randoming overthwart the scout's mind, that perhaps most of the "fizzyological moments" are down in the rathskeller. Scout proceeded to next booth to ask questions, which peradventure, the salesman could answer.

One of the bad features of automobile shows in the past, has been the lack of competent attendants at the various booths. Those who knew almost nothing about the fine points of the cars they were showing seemed to be in the majority. In some cases, attendants or "salesmen" have been found who actually did not know how their own motor or transmission worked, and if asked a question about the differential, they would walk around and commence to look at the magneto or steering gear and utter incoherent phrases. The writer has talked with numerous gentlemen of this caliber, who could not tell a light "six" from a large four-cylinder motor by mere external examination. Inquiry from a person higher up—else a demonstrator—was necessary.

This state of affairs has been the manufacturer's misfortune rather than his fault. At show time, the whole workings of the factory organization are thrown out of gear; it is difficult and expensive to spare good men from the factory and for a fair sized exhibit, a large staff of men is required, in order that some of them may be in attendance at all hours. Most of the responsible members of a concern are obliged to attend a few meetings, luncheons and dinners during the week, in addition to making business visits in various parts of the city, and companies have been forced in the rush of things, to employ inexperienced men as booth attendants during show week. As a result, persons who are really interested in the mechanisms of the various cars, have been obliged to find out by themselves what they desire to know, unless the designer or a factory man happens to be around.

At last week's show, however, there seemed to be more attendants who really knew what they were talking about and less shoe clerks and glove salesmen, laboring under the impression that change-speed gears are speedometers and thinking that torque-rods are talk-rods, meanwhile wondering if "talk-rods" are "talking points." No doubt manufacturers and dealers realize more than ever before that A1 men are the only ones worth having around their space.

Now the scout, whose toes had been stepped upon much by the throng, and who had been forced to step upon his own toes occasionally when jostled, slipped into the space partitioned off for a company from Detroit—a city in which motor cars are said to grow on trees. Here he met the publicity man of the concern, who had torn himself away from the press room long enough to descend to the main floor and talk to some girls. He confidently breathed the news—let it slip and ooze out of him—the news that Anthony Comstock was expected at any moment at the booth next door, for St. Anthony had heard that there was a stripped gear on exhibition in the Garden. This well-known personage and friend of one Jake Schreyer, is making a bare living these days and is actively on the lookout for things dishabille.

When asked whether the cars profusely strewn about that booth are equipped with dual ignition or not, publicity man dunno. He says to ask the designer, certainly, and "wait around" for Comstock.

Around the Fourth avenue end the Locomobile Vanderbilt Cup winner ("Success" —Herald) and the Thomas New York-Paris car ("Success"—Times), likewise the Vanderbilt Cup itself ("Success"—Herald) attracted no end of admiration and Miss Celia St. Regis the Red Soubrette, in observing the cup car, audibly remarked several times, so that the crowd around might hear her, that in the spring, she guessed she would buy the winner of the famous classic to drive in her new show. She asked the demonstrator what its motive power was—steam or electricity—and he, regular kidder, replied "Liquid air." In fact numerous salesmen were called upon to answer so many fool questions, that their sense of facetiousness occasionally ran away with them.

But having looked at some of the cars, the scribe decided to dive down into the basement and have a squint at a few accessories. Paying no attention to the kind friends who told him to look at the Lavalette exhibit and that Lavellettes were a new style of landaulettes, when he knew very well that Lavellette & Co. handled magnetos, he plunged into the stuffy abyss. What delightful dreams the accessory array can produce! After the motorist or mere plain person has trekked through the basement and also the galleries, listening to all that glib demonstrators tell him, then wends his weary way homeward and retires, somehow the camshaft of his eyebrow short circuits with the throttle valve on the left ear, and an anti-freezing solution in his hair rusts the skid chains on his chin and the trans-mission furniture in the room spins around on the jack-shaft of the os calcis, and all 32 cylinder cavities in the upper and lower sets of teeth, which are out of mesh, all fire at once and raise particular Billiken jinks with the carburetter, so that the person does not get the right "mixture."

At one accessory booth, the scout was hailed by a rather breezy demonstrator who began with: "Hey you—Interested in automobiles?"

"No," was the answer, for Scout opined that he had seen enough automobiles.

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"Interested in motorcycles?" was the follow-up.

"No."

"Commercial vehicles interest you?"

"No."

"Then what in —— are you doin' here?"

While it could hardly be called suave or delicate, it was nevertheless, quite to the point.

After looking over, almost overlooking the motorcycle section—because of the crowd which surrounded it—the scout climbed aloft to see what he could see among the exhibitors there. A sweet young thing away up in nigger heaven informed him that a certain invention for carrying beverages and keeping them at hot or cold temperatures, was called the Janus Bottle. When asked if she was Elsie Janis, star of "The Fair Co-ed," she replied in the negative.

Yes, the scout ran the whole gamut of the tire, supplies, and accessory makers listening to and believing all that was told to him, and after having satisfied himself that the Austro-American Separator Company was not an international firm of divorce lawyers, but manufacturers of funnels instead, he trotted home to dream that having completed his circuit of the Garden and its exhibits, the circus Maxims itself began gravely to circle about him.

The Directory and the Siamese Twins.

During the Garden show they were telling a good story respecting the so-called "automobile trade directory," which is a half brother of the Blue Book and a similar kin of those "siamese twins," The Automobile and The Motor Age. It appears that during an idle period the advertising solicitor for one half of the "twins" was ordered to dip into directory work. Following his instructions he called on an advertiser in one of the twins and solicited an ad. for the directory.

"Why should I advertise in the directory?" inquired the more or less astonished manufacturer, who was aware that the four publications have the same parents.

"To make yourself known to the trade," promptly replied the solicitor.

"Then in the name of heaven, will you tell me why I have been advertising in The Automobile and The Motor Age for the past several years?" rejoined the manufacturer.

The response of the solicitor is not recorded.

Washington to Manage Washington Show.

Washington's 1909 automobile show is to be managed by B. C. Washington, who has managed seven previous shows in the National Capital. Although the date has not yet been definitely set, the affair will be under the auspices of the Automobile and Cycle Dealers' Association, which has just been formed. The officers chosen are as follows: President, R. A. Klock; vice-president, T. N. Mudd, Jr.; secretary, J. D Carpenter; treasurer, E. C. Graham.

PHILADELPHIA OPENS HER SHOW

Nearly Fifty Makes of Cars Brilliantly Staged at Second Regiment Armory—Accessories Well Represented.

Following close in the wake of the New York shows, Philadelphia's eighth annual show was opened last evening, Wednesday, 27th inst., with less ostentation but much the same pomp and an even greater amount of enthusiasm on the part of the visitors, than marked the preceding exhibitions at the Palace and Garden in New York. In addition to being the first of the purely local shows, at which the various cars are shown by the agents instead of by the manufacturers themselves as they are at New York and Chicago, this is the first show of the year at which the products of the "licensed and "independent" manufacturers, as they are known to the public, are brought together. On this account it is of particular individual interest, more especially since it is graced with a number of exhibits brought direct from New York.

In previous years it has been the custom to open the Philadelphia show immediately after the close of the Garden show in New York, and in consequence, many of the demonstrators and stand attendants have been wearied with their efforts of the previous week, while it has frequently been the case that exhibits shipped from New York have been delayed in transit and have arrived only for the latter part of the week. The Wednesday opening date this year, is therefore a welcome innovation. Another innovation is the staging of the show in the Second Regiment Armory, Broad and Susquehanna avenues, instead of the First Regiment Armory, where it has located on the past two occasions.

The roster of exhibitors includes the names of 48 agents of cars or branch house representatives of the manufacturers, among which but one foreign country (Italy) is represented in the Fiat and Isotta exhibits. The accessory representation numbers 12 concerns.

The color scheme of the armory is gaudy, to say the least. A blending of cerise and Nile green was what the decorators devised to please the eyes of Philadelphians. An immense canopy of bunting gives the impression of a gigantic tent with a multi-ringed circus. White columns mark the dividing lines between the various booths and a double row of columns forms a "court of honor" leading from the main entrance. A central cluster of electric lights and myrads of other bulbs provide the illuminative effect and the unsightly iron girders are quite hidden in the array of decoration.

The exhibitors are the following:

Automobiles.

Acme Motor Car Co., Acme.
Autocar Co., The, Autocar.
Automobile Sales Corporation, Peerless and Cadillac.
Adamson, Prescott, Columbia.
Bergdoll Motor Car Co., Chalmers-Detroit and Thomas.
Brazier, H. B., Marmon.
Carroll Power Co., Carroll.
Chadwick Engineering Works, Chadwick.
Fiat Automobile Co., Fiat.
Ford Motor Car Co., Ford.
Foss-Hughes Motor Car Co., Pierce-Arrow and E-M-F.
Franklin Motor Car Co., Franklin.
French, L. E., Pullman.
Gawthorp & Wister, Elmore.
General Motor Car Co., Lozier
Hamilton Automobile Co., Stoddard-Dayton.
Harper D. Walter, Stanley.
Hills Motor Car Co., Royal Tourist.
Jackson Motor Car Co., Jackson.
Keystone Motor Car Co., Packard.
Locomobile Co of America Locomobile.
Longstreth Motor Car Co., Maxwell.
Matheson Automobile Co., Matheson.
North Philadelphia Automobile Station, Knox.
Oxford Automobile Co., Brush and Gaeth.
Palmer & Singer Mfg. Co., Palmer & Singer and Simplex.
Penn Motor Car Co., Mitchell.
Philadelphia Automobile Co., Apperson.
Quinby & Co., Pennsylvania and Isotta.
Sprankle, W. J., Overland.
Standard Motor Car Co., Middleby and Speedwell.
Stoyle Automobile Co., American and Grout.
Spalding & Bros., A. G., Stevens-Duryea.
Studebaker Brothers Co., Studebaker.
Tioga Auto Co., National and Rambler.
Twining, Thomas M., Regal-Detroit and Crawford.
White Garage, White steam cars.
Winton Motor Carriage Co., Winton.
Wyckoff, Church & Partridge, Stearns.

Accessories.

Auto Equipment Co., accessories.
Auto Light & Equipment Co.
Brown Auto Top Co., tops.
Caloris Mfg. Co., Caloris bottles.
Gibney Bros., James L., tires and accessories.
Manufacturers Supplies Co., accessories.
Nock Co., G. W., supplies and accessories.
McCullough & Sons, J. H.
Keystone Lubricating Co., lubricants.
Paynter-Spitzel Co.
Puritan Soap Co., hand soap.
Standard Rubber Tire Co., Republic tires.

Cincinnati's Second Show Draws Well.

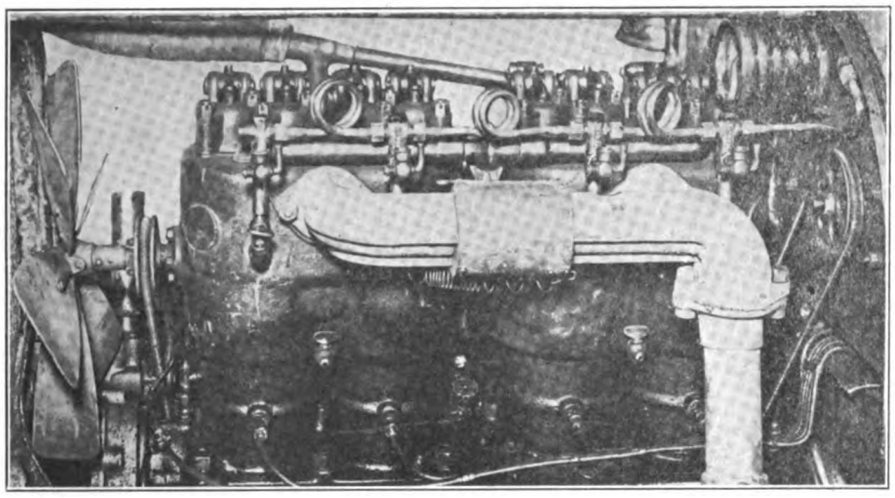
With a roster of exhibitors representing no less than 32 different makes of car, practically all of which have been seen in New York this year, Cincinnati's automobile show, which is being supported by the Cincinnati Automobile Club, was opened to the public on Monday evening last, 25th inst It is the second of its kind, and from the tradesmens' point of view is important as drawing a good class of prospective buyers from the wide areas of the southern portion of Ohio, as well as from Indiana, Kentucky, West Virginia and some of the southern States. The decorative scheme which has been applied to the Armory is in white and gold colors, with mural panels set off in evergreens, while the entrance is masked by a garden effect, in which real and artificial plants, a fountain and fish-pool are effectively displayed.

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MECHANICAL INFLATION OF TIRES

Maxim Invents System for Use of Live Gas from the Engine—Specifications of the New Appliance.

Tire pumping always has been the chief drawback to tire inefficiency in the mind of the average motorist and granted a relief from the delays and vexations of having to stop and inflate tires by means of the ordinary foot pump, it is a safe assumption that tire troubles would weigh far less heavily on the mind of the user, be he owner or chauffeur. On this account many attempts have been made at the provision of some means of inflating tires by mechanical devices of one sort or another. These have run the whole gamut from the automatic arrangement intended to pump continuously and attached directly to the wheel, to the power pump actuated in some way from the engine and more or less cumbersome according to the relative amount of skill possessed by the inventor. The latest arrangement of the sort, however, is radically simple, being, in fact nothing more nor less than a method of tapping the cylinders and removing from them a certain amount of live gas which after being circulated through a cooling system which is peculiar to the arrangement, is delivered directly to the affected tire through a hose, and at any desired pressure.



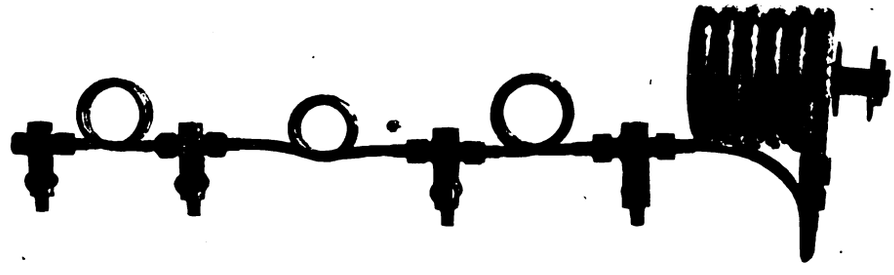
MAXIM TIRE INFLATOR INSTALLED ON A 4-CYLINDER MOTOR

The system in question is the invention of Hiram Percy Maxim, well known as an automobile engineer long before the days of his recently achieved silent firearm. The device, which is applicable to any type of motor, and in no way interferes with the arrangement of the motor save in the attachment of special fittings to the cylinders in place of the ordinary pet cocks, is extremely simple and free from complexities.

As the accompanying pictures show, the essential element involved is a single lead of copper tubing connecting the tops of the various cylinders and terminating in a close coil which is mounted on the dash. Between each pair of cylinders a single loop is formed in the tube, which, aside from its cooling function, renders the system perfectly independent of any tendency of the cylinders to "work" under severe stress. The cylinder fittings consist of connections which replace the ordinary stock pet cocks, but are branched in such a way that the pet cocks may be replaced after the apparatus is installed, so that they still may be used as occasion may require. Furthermore, each of the fittings is equipped with a steel ball valve so that the series is made to operate much like the ordinary check valve employed in securing pressure for the fuel feed. Being of different proportions, however, and connected in series, the effect on the line is to secure a much greater pressure and volume of gas than the simple check will deliver.

The function of the coils is merely that of cooling and purifying the gas as it leaves the cylinders, so that by the time it reaches the hose connection, which is mounted on the face of the dash, it is at sufficiently low temperature to be introduced into the tires without danger of injury to them. A gauge also mounted on the dash, is useful in determining the line and tire pressures.

It is claimed for the system that the gas delivered to the tires is in no way harmful to the rubber of the tires, being mainly carbon dioxide, with a very small proportion of water, where the engine is running with normal carburation, and that the composition of the vapor is such as to have a preservative influence on the interior of the tubes rather than a deleterious one, such as may occur where the oxydizing influence of pure air is considered. The invention is being produced by the F. A. Law Machine Co., Hartford, Conn.



MAXIM TIRE INFLATOR, SHOWING THE COOLING COIL

Remagnetizing the Ford Magneto.

The possibility of suddenly being called upon to revitalize a de-magnetized magneto always has been one of the big bugbears to the novice in connection with the use of that innocuous and generally trouble-less device. With the ordinary type of high or low tension device, remagnetization may be accomplished only when the magnets are dismounted and treated separately. In the case of the device which has been applied to the new Ford cars, however, and which is of the so-called inductor type no such puzzling undertaking need be gone through.

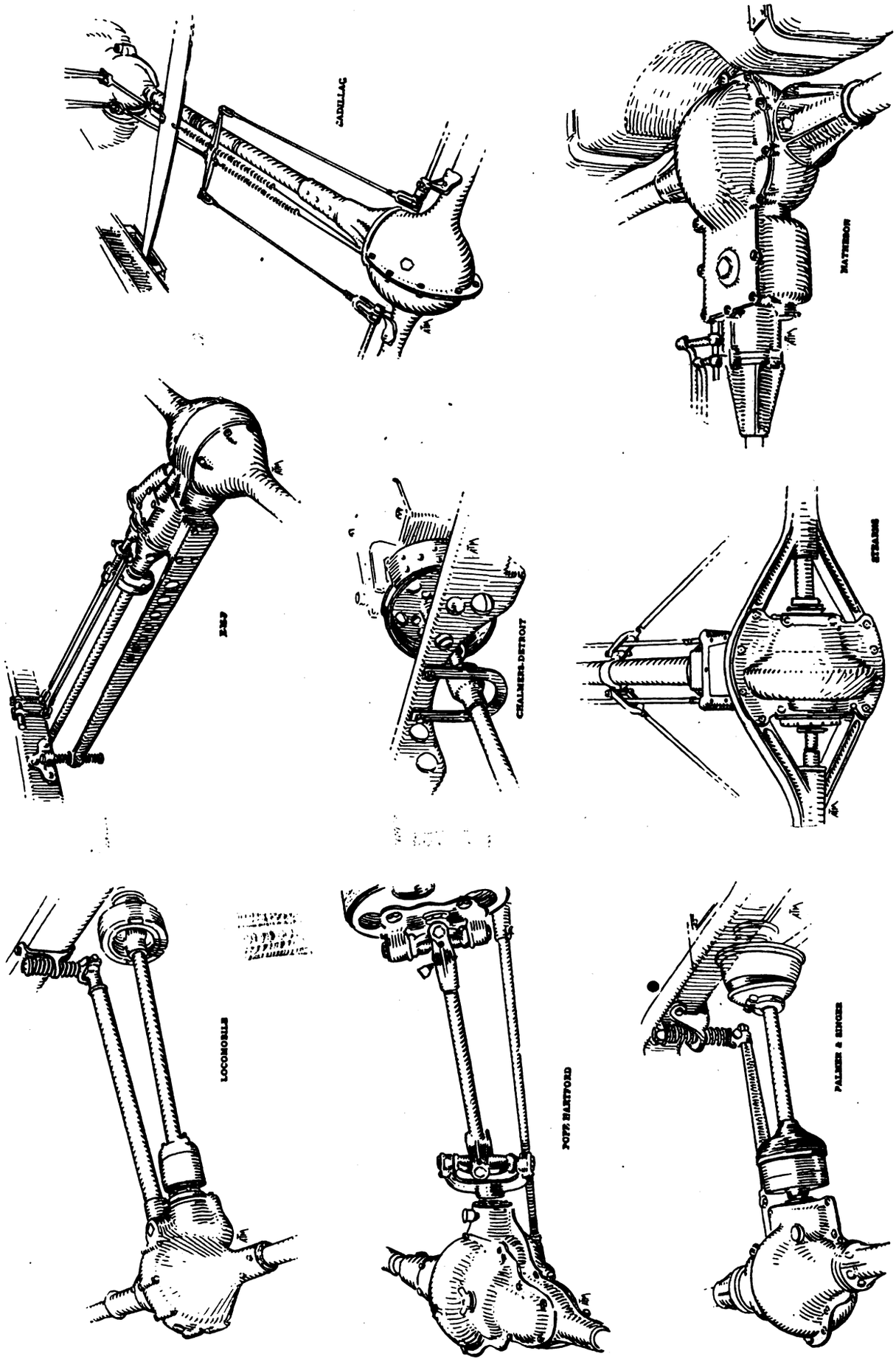
According to instructions recently issued by the Ford Motor Co., all that is necessary is to remove the transmission cover and turn the engine over, placing a small wire nail, or other steel, over each magnet, as a keeper. Then the magnets should be turned so that two south poles are opposite a north pole of the coils. The polarity is easily determined with a small pocket compass, and the point to observe is that the polarity of the coil must be the opposite of that of the magnets.

Then 5 or 6 cells of storage batteries may be connected in series and one terminal applied to the coil terminal. With the other battery wire or terminal, the circuit should be grounded and broken successively. Thirty to sixty seconds will suffice to remagnetize.

Preservative for Aluminum Surfaces.

For the preservation of the surface of aluminum foot and running boards, this recipe is going the rounds just now: "Brush the surface over well with a weak solution of sulphuric acid, in the proportion of about 5 to 8 parts of water to 1 of acid. This is applied to the surface with a stiff bristle brush, and the surface well rubbed, after which the excess acid is removed with water. Another method sometimes recommended is to make a mixture of turpentine and fine emery, which is applied to the surface with a bristle brush. After vigorous application and rubbing the surface of the metal will be restored.

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SOME SUGGESTIVE EXAMPLES OF RECENT PRACTICE IN LIVE AXLE MOUNTING

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MOUNTING THE LIVE REAR AXLE

Three Classes of Stresses that are to be Neutralized—Some Conspicuous Methods of Solving the Problem.

In order to comprehend thoroughly the problem which the automobile designer must study in laying down the specifications for a car, it is necessary to trace out the several methods of resisting the three sets of stresses or load which the axle and transmission groups must be made to resist successfully. These are in a word, the axle load, or the stresses imposed by the dead weight of the chassis and body upon the springs, which are transmitted to the axle; the traction or driving stresses, which arise from the forward thrust of the axle in the chassis as it transmits the driving effort from the wheels to the ground, and which may be likened to the draw-bar pull of a locomotive; and the torsional stresses, which arise from the reaction caused by the development of power in the engine and from the resistance of bearings and equalizing rods and bars to the tendency of the transmission mechanism to rotate bodily instead of transmitting rotary motion.

Axle stresses are resisted solely by the spring suspension of the vehicle and may be entirely isolated from all others by affording the springs a rotary seating upon the axle tubes and transferring the driving function to other portions of the rear assemblage. A remarkably successful instance of this is found in the new Locomobile "30" chassis, in which by the use of radius rods which are swiveled on the axles in the same manner as the springs, the entire axle is, as it were, left perfectly free to rotate within its mounting, so that its load carrying function is kept entirely apart from any other of its manifold uses.

Traction resistances may be taken up in various ways, the older favorite among many methods being that of the radius rod, which while permitting the axle to retain a certain fixed relation with regard to the chassis and within the limits of the spring shackles, also fixes a point through which the driving thrust of the wheels may be transmitted. Another method is to cause the springs to do the driving, leaving the remainder of the mechanism to perform its part unhampered. Still another method which is in high favor just at present in designs in which the driving shaft is housed by a torque tube, is to take up the driving stresses through the tube itself, transmitting them to the frame through a ball joint which also carries the radial load due to torsional stresses. The rear mounting of the new Stearns chassis is a particularly good example of this, the forward suspension of the torque tube being in a very heavy transverse frame member, to which the outer casing of the ball joint is firmly bolted. The same general practice also is found on the Thomas cars—both the taximeter cab and the new six-cylinder constructions embodying the idea, and in the new Matheson—the first and last named having the unit, or axle mounted gearset.

Torsional stresses, are, perhaps the most difficult for the non-technical observer to appreciate, though they are of a degree of importance which not even the designer has been inclined to overvalue hitherto. The principle of their development may, perhaps best be understood if it be imagined for the moment that the driving shaft of a live rear axle were so fixed that they could not turn. Obviously then, the application of power to the propeller shaft would tend to cause the driving bevel to climb the driven bevel, or, in other words, to rotate around it, carrying the propeller shaft with it.

Commonly the torsional stresses are absorbed by means of a long lever running from the axle housing to a point of support on the frame, concentric with the tube or radius rod supports—or nearly so. To cushion against shock when the power is applied suddenly or when the wheels strike an obstacle in the road, it is necessary to give the bar a yielding support of some sort, which commonly is effected by means of opposed springs which act as shock absorbers.

Where the shaft housing also serves as the torsion resisting member, the shaft itself commonly has but one cardan or universal joint, though a noteworthy exception is found in the case of the latest Thomas chassis. Where the shaft is not housed, it may be equipped with one or two joints according to the method of design.

It will be observed that with the torque tube system no direct provision is made against the effect of such shocks in some cases, as for example in the Chalmers-Detroit and Cadillac cars, the support for the tube being directly on the rear bearing of the gearset. A still more radical method of mounting, however, and one in which both traction and torsion loads are taken up by a single coupling bar, is that of the latest Pope-Hartford, in which this single member is made to do double duty without the intervention of any cushioning support whatever. Ordinarily, however, where the springs are absent, it will be found that a very long leverage is gained for the torsion member, while in cases where such members are very short, as in the case of the Palmer & Singer, ample shock absorption is provided for.

The successful handling of these three sets of stresses form not only one of the greatest complications in live axle design but one of the most puzzling tasks in connection with the layout of the entire machine—the engine details excepted. That so great a variety of practice has been evolved with so little variation in actual result is much to the credit of the engineers who have studied the problem.

DEVELOPING AUTOMOBILE METALS

Haynes Tells of Dealings with Metallurgical Problems—Characteristics of Steel and the Action of Alloys.

That nearly every one of the more thoroughly and better established automobile manufacturers has his own methods of treating the metals which are employed in different parts of his product is a fact which in large measure explains the difference in operation between corresponding parts of different cars. Also, that the development of the metallurgical end of the business of automobile production has had far more to do with the successes in manufacture during the past two or three years than generally is appreciated is a consideration not at all apparent until that development specifically is considered. This subject is reviewed in non-technical synopsis form by Elwood Haynes, pioneer manufacturer and designer, who clearly indicates that the part which the development of metals has played in the development of the automobile is a most important one.

"A few years ago it was considered impossible to build a self-propelled vehicle for the common roads, that could be operated continuously in a practical way because of the very high cost of upkeep," says Mr. Haynes. "A parge part of this excessive maintenance cost was due to the breaking or bending of the various parts of the machine. The early builders of automobiles were not only annoyed almost beyond endurance from this cause, but the problem became so serious that for a time the success or failure of the entire business seemed to hinge upon the possibility of obtaining the materials which would stand the extraordinary stresses imposed by this new means of locomotion.

"Many entertained the idea at first that excessively tough materials would best answer the purpose, and hence employed Swedish iron or very low carbon Bessemer steels. These were found to be absolutely unsuitable in many instances, not because of breakage, but on account of the readiness with which they would bend and take excessive and permanent set, thus throwing the parts out of line and rendering the machine in a short time practically inoperative. Higher carbon Bessemer steels were employed with but little advantage; it is true that they were more elastic, but after a limited amount of use they would deteriorate in strength and finally break in most unexpected places.

"Alloy steels were almost unknown in mechanical construction in the nineties, though nickel steel had been tested to some extent chiefly by firms supplying armor plate steel to the government. However, it was of doubtful utility until introduced into the automobile. The early users of

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this steel were highly pleased with the extraordinary improvement which it introduced into the machines. First, it proved a great boon in the construction of live rear axles, which when made of ordinary steel had been bending or breaking to an alarming degree. Next, it was tried in crank shafts, which had also given much trouble. Later, it was used for the construction of sliding gear wheels employed in the transmission of the car. Its introduction was not always attended with satisfactory results, but generally speaking the improvement which it made was of a most marked character.

"Unfortunately a number of builders regarded nickel steel simply as an alloy of iron and nickel containing a certain per cent. of the latter metal. They were not particular about the other constituents of the alloy or how the steel was made. This was the cause of a great deal of trouble in the early use of nickel steel. Firms that had never had any experience with alloy steels immediately began making nickel-steel of inferior quality and placing it upon the market. Much of this steel was too high in carbon for the purpose intended, other samples contained considerable quantities of phosphorus and sulphur, thus rendering them unfit for use, while still others were carelessly made up and little if any superior to the ordinary Bessemer product. Gradually, however, it was learned that certain precautions were necessary to make a good nickel-steel, and that the steel must be of such a composition as to answer the requirements necessary in a particular part of the machine.

"A little later chromium was introduced into the nickel-steel, and its effect was found to be vary marked; but while it greatly improved the strength of the nickel-steel, it was found to be very much harder to work, and since it is a triple alloy of iron, chromium, and nickel, besides containing various percentages of carbon, its manufacture and manipulation required much greater care than the making of carbon steel or nickel steel. Moreover, the carbon content must be very carefully controlled or the steel will be greatly modified in its properties and may be rendered utterly unsuitable for the purpose intended. Owing to the great hardness of this steel in its natural or annealed condition, special tools were required for forming and machining it, and even these did not work it rapidly

"Fortunately, at about this time a new alloy tool-steel had been compounded which greatly aided in the working of the nickel-chrome-steel. This new tool-steel is generally speaking, an alloy of iron, tungsten and chromium, containing but a small percent. of carbon. It possesses the extraordinary property of becoming exceedingly hard when heated to whiteness and dipped in oil. The hardness thus imparted to the steel is not readily reduced by heating, and for this reason the tools made of this substance will hold a cutting-edge even though the iron or steel shavings are heated to redness in the process of turning It is questionable whether nickel-chrome-steel could have been successfully introduced into the automobile without the use of this special tool steel alloy.

"Much difficulty was experienced with the nickel-chrome-steel, aside from the difficulty of working it. It is very sensitive to slight differences in temperature employed in tempering it, and to make sure of accurate results a pyrometer must be employed for every operation. Owing to this fact and to the further fact that nickel-steel lends itself to a variety of uses, there has arisen a difference of opinion in regard to which of these materials is more suitable to employ. Many high-class builders use a limited amount of both in the different parts of their machines.

"Closely following the nickel-chrome-steel came the introduction of vanadium steel, or more properly speaking, vanadium-chrome-steel, since vanadium alone is seldom used in automobile steels. The effect of vanadium upon iron and steel has been very carefully studied by Mr. J. Kent-Smith, to whom largely belongs the credit of introducing this valuable material.

"Much has been said and written about the peculiar effect of vanadium upon steel. It is generally conceded now that it acts largely as a scavenger, and exercises a beneficial influence on almost all of the carbon and alloy steels when introduced in minute quantity during the melting process. Its chief office seems to be that of removing the last traces of oxygen and oxides, as well as minute quantities of nitrogen, which latter element exercises a very bad influence on iron and steel even when present in exceedingly small quantity. It is perfectly certain that vanadium exercises a very beneficial effect upon the finished product, giving it closeness and fineness of grain, splendid elasticity, coupled with extraordinary toughness. Fortunately, in addition to these very desirable properties, the steel is sufficiently soft in its annealed state to be turned and machined like ordinary low carbon steel.

"One difficulty in the manipulation of this steel is the persistance with which it resists case hardening. While nickel steel takes up carbon readily at a temperature of from 750 to 800 degrees centigrade, under an exposure of from two to four hours, vanadium steel under the same condition, and in fact in the same annealing box, shows only a slight penetration by carbon after an exposure of from ten to twelve hours. This is probably due to its very dense character. It will, however, take up carbon slowly if exposed to a temperature of 900 degrees Centigrade. But a continuous temperature as high as this exercises a rather marked effect upon the furnace and annealing pots—in fact, in case-hardening this steel I have found it advisable to use graphite pots instead of cast iron ones.

"Besides the steels already mentioned, special grades of openhearth steel may be employed for parts which are not required to resist special stress. And in cases where rigidity rather than high elastic limit is the prime requisite, a good moderately low carbon steel of high purity will answer as well as an alloy steel. As a matter of fact the writer has made a large number of tests which indicate that an openhearth steel of moderate carbon content is stiffer than nickel steel, though not quite so stiff as nickel-chrome-steel or vanadium steel.

"No matter what steel is employed in the construction of an automobile, its full value is only obtained by suitable treatment. For instance, a one-half inch square bar of nickel steel six inches in length supported at both ends, resisted a load of 900 pounds, when it took a permanent set. The same steel after treatment sustained a load of 2,700 pounds before taking the slightest set. A vanadium steel bar under the same condition took a permanent set under a load of about 900 pounds; after treatment it resisted a load of 4,000 pounds without taking the slightest set. In fact, the alloy steel before treatment will frequently show but little more strength than good untreated openhearth steel. The nature of the treatment depends largely upon the use made of the steel, and each manufacturer has a treatment of his own which has been carefully worked out to meet the specific requirements in the various car parts.

'Besides the various drop-forgings, which should never be made of Bessemer steel, high grade crucible steel castings may be employed for certain parts of the machine. For example, a steel of this character is much better for rear-axle housings than malleable iron; in fact, the latter substance, in the opinion of the writer, should have no place in the car excepting for elbows, tees, etc., which are not subjected to engine stress or road stresses.

"The other metals beside iron and steel, employed in the automobile are mainly bronzes of various kinds (including bearing metals, etc.), and aluminum. High grade babbitt metals are now employed to a considerable extent, in the place of bronze, since they have the advantage of never cutting the shaft in case the oil supply should fail. Aluminum castings are employed by nearly all high class builders for crank cases. If properly designed, these castings give excellent results; and at the present price of aluminum, are probably as cheap as any that could be employed for the purpose. It is a notable fact that the Americans were the first to introduce both aluminum and nickel steel into automobile construction, though it is generally supposed that these progressive steps should be credited to the French. The extensive introduction of vanadium steel is also due to Americans."

"The A B C of Electricity." Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

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FORMULATING A UNIFORM LAW

Tentative Draft Submitted to Inter-State Commission for Revision—Full Text of the Proposed Measure

Following close upon the conference of the governors-elect of the New England states which occurred in Boston recently, efforts at securing uniform automobile legislation have been given a more favorable status than ever before through the willing attitude of the Uniform State Law Commissioners of the states of New York, Connecticut, Massachusetts, and New Jersey through whom it is hoped the legislatures of the respective states ultimately may be reached with a uniform measure for the government of the motorist.

At the request of Governor Hughes of New York, Chairman Charles Thaddeus Terry of the New York Board of Commissioners of Uniform State Laws, who also is chairman of the legislative board of the American Automobile Association, called into conference the commissions of the states above named on the 16th inst. in New York City, as has just become known through Chairman Terry's report to the A. A. A. Following a discussion of the subject of motor vehicle law in general, it was requested that the chairman prepare a tentative draft of a uniform law to form a basis of further discussion, suggestion and criticism, preliminary to the adoption by the conference of a bill which the commissioners might recommend to their respective legislatures, if a common ground could be reached.

This has been done, and the tentative draft, which is reprinted in full below, has been forwarded to the commissioners for study and criticism. Its provisions will be discussed at the next meeting of the conference which will occur on Saturday next. 30th inst., at the office of the chairman, 100 Broadway, New York, at 2:30 P M., at which time suggestions from any source relative to the perfection of the measure will be welcomed.

As showing the progress which has been made in the movement for a uniform state law, Chairman Terry points to the embodiment of favorable recommendations in the annual message of Governor Hughes and in the organization of the conference of New England governors-elect which was carried out by Governor Guild, of Massachusetts. In addition to his interest in the subject manifested at that time, Governor Guild also has been forwarded a copy of the proposed enactment, which was placed in the hands of the Massachusetts Highway Commission, and was under consideration by them at the time of framing the bill which is at present before the legislature of that state.

A probable extension of the present movement was forecasted in a motion introduced into the Senate of Pennsylvania on the 19thinst., asking Governor Stuart to invite the Governors of New York, New Jersey, Delaware, Maryland, West Virginia and Ohio to co-operate with Pennsylvania for a convention to adopt a uniform state motor vehicle law in the states bordering upon Pennsylvania. The resolution, which was referred to a committee, authorizes Governor Stuart to appoint five delegates to the convention.

The tentative draft of the uniform state law bill prepared by Chairman Terry is, in all important respects, a duplicate of the uniform automobile bill which he prepared a year ago. Among its more important provisions are: That if the statutes of the resident state have been complied with, no additional fees will be demanded of visiting motorists by other states; that annual registration shall be indicated by the use of number plates of different colors for succeeding years; that fees shall be graduated according to the horsepower of vehicles, from a minimum of $3, to a maximum of $70, with a $10 blanket license fee for manufacturers and agents. Speed restrictions are abandoned, the speed clause in standing laws being replaced by a restriction similar to that imposed by the Connecticut law, while the penalties for speed violations are given a maximum of $250 fine for the first offense and a $500 maximum with the alternative of six months imprisonment, or both for the second and subsequent offenses. Chauffeurs' licenses are to cost $5 a year, with a $50 penalty for violation of the requirements. For the use of cars without the permission of their owners a fine of $500 or imprisonment for not more than six months, or both, is provided. The full text ofthe bill is as follows:

Section 1. Definitions.

The term "motor vehicle" as used in this act, except where otherwise expressly provided, shall include all vehicles propelled by any power other than muscular power, except motor bicycles, motorcycles, traction engines, road rollers, fire wagons, engines, police patrol wagons, ambulances and such vehicles as run only upon rails or tracks. The term "local authorities" shall include all officers of counties, cities, boroughs, towns or villages, as well as all boards, committees and other public officials of such counties, cities, boroughs, towns or villages. The terms "chauffeur" shall mean any person operating a motor vehicle for hire, or as the employee of the owner thereof. The term "state" as used in this act, except where otherwise expressly provided, shall also include the territories and the federal districts of the United States. The term "owner" shall also include any person, firm, association or corporation renting a motor vehicle or having the exclusive use thereof, under a lease or otherwise, for a period greater than thirty days. The term "public highway" shall include any highway, county road, state road, public street, avenue, alley, park, parkway or public place in any county, city, borough, town or village, except any speedway which may have been or may be expressly set apart by law for the exclusive use of horses and light carriages.

Section 2. Registration of Motor Vehicles.

1. Every owner of a motor vehicle which shall be operated or driven upon the public highways of this State, shall, for each motor vehicle owned, except as herein otherwise expressly provided, cause to be filed, by mail or otherwise, in the office of the Secretary of State a verified application for registration on a blank to be furnished by the Secretary of State for that purpose, containing: (1) A brief description of the motor vehicle to be registered, including the name of the manufacturer, the style, type and factory number of such vehicle, the character of the motor power and the amount of such motor power stated in figures of horsepower. (2) The name, residence and business address of the owner of such motor vehicle and the name of the county in which he resides; provided that if such motor vehicle is used or to be used solely for commercial purposes, or, if propelled by electric battery power, is used or to be used solely within the confines of a city, the applicant shall so certify.

2. Upon the receipt of an application for registration of a motor vehicle or vehicles as provided in this section and in seceion four of this act, the Secretary of State shall file such application in his office and register such motor vehicle or vehicles with the name, residence and business address of the owner, manufacturer or dealer as the case may be, together with the facts stated in such application, in a book or index to be kept for the purpose, under the distinctive number assigned to such motor vehicle by the Secretary of State, which book or index shall be open to inspection during reasonable business hours.

3. Upon the filing of such application and the payment of the fee provided in subdivision six of this section, the Secretary of State shall assign to such motor vehicle a distinctive number, and, without expense to the applicant, issue and deliver to the owner a certificate of registration, in duplicate, in the form and size provided in subdivision three of section three hereof. In the event of the loss, mutilation or destruction of a certificate of registration, the owner of a registered motor vehicle may obtain from the Secretary of State a duplicate thereof, upon filing in the office of the Secretary of State an affidavit showing the fact and the payment of a fee of one dollar for each duplicate.

4. The Secretary of State shall, within sixty days after this act takes effect, and thereafter, on or before the first day of February of each year, furnish to the clerk of every county in the State a full and accurate list of all motor vehicles so registered, stating the distinctive numbers so assigned to them and the names, residences and business addresses of the owners, manufacturers or dealers, as the case may be, and once each month thereafter a similar list of the additional registrations, which additional list shall be entered by each county clerk upon the original list received by him. Such lists shall be filed by such county clerks and be kept as public records, open to inspection during reasonable business hours.

5. Such registration shall be renewed annually in the same manner and upon the payment of the same fee as provided in this Section for original registration. Such renewal to take effect on the first day of January of each year.

6. The following fees shall be paid to the Secretary of State upon the registration of a motor vehicle in accordance with the provisions of this Act: Three dollars upon the registration of a motor vehicle having a rating of less than twenty horsepower. Five dollars upon the registration of a motor vehicle having a rating of twenty horsepower, and less than thirty horsepower; and Ten dollars upon the registration of a motor vehicle having a rating of thirty horsepower or more; and if a motor vehicle has two ratings of horsepower, the registration fee shall be based on the higher rating; provided that the owner of any motor vehicle which has been registered under existing law subsequent to the —— day of —— one thousand nine hundred and —— shall be entitled to a credit or rebate of the fees paid under such law for such registration; and provided further that for motor vehicles which in the verified application for registration are stated to be used solely for commercial purposes, or, if propelled by electric battery power, to be used solely within the confines of a city, the fee for such registration shall be five dollars.

7. Upon the sale of a motor vehicle registered in accordance with this section, the vendee shall, within ten days after the date of such sale, notify the Secretary of State of the same upon a blank furnished by him for that purpose, stating the name and business address of the previous owner, if known, the number under which such motor vehicle is registered and the name, residence and business address of such vendee. Upon filing such statement such vendee shall pay to the Secretary of State a fee of one dollar, and upon receipt of such statement and fee the Secretary of State shall file such statement in his office and note upon the registration book or index such change in ownership, and at least monthly notify every county clerk of the State of such sales, each of whom shall immediately note the same on the list of registered vehicles received and kpt on file by him as herein provided.

8. The registration fees imposed by this act upon motor vehicles other than those of manufacturers and dealers and those used solely for commercial purposes, shall be in lieu of all other taxes, general or local, to which motor vehicles may be subjected as personal property under the laws of this State.

Section 3. Distinctive Number Must be Carried on Motor Vehicles.

1. No person shall operate or drive a motor vehicle on the public highways of this State after the —— day of —— nineteen hundred and ——, unless such vehicle shall have the certificates of registration assigned to it by the Secretary of State conspicuously displayed, one on the front and one on the rear of such vehicle, each securely fastened so as to prevent the same from swinging, provided that the owners of motor vehicles registered and assigned numbers under any law in force at the time this act takes effect, shall continue to display such numbers thereon until the —— day of —— nineteen hundred and ——. No person shall display on such vehicle at the same time any number assigned to it under any other motor vehicle law or ordinance.

2. Such certificates of registration shall be of a distinctly different color or shade each year, to be designated and selected by the Secretary of State,

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and there shall be at all times a marked contrast between the color of the number plates and that of the numerals or letters thereon.

3. Such certificates of registration shall be an enamelled plate or placard of metal, four and one-half inches wide and not more than twelve inches in length, in the upper left hand corner of which there shall be a fac-simile of the seal of the State, underneath which there shall be the intitials "——" and to the right of which seal and initials there shall be the distinctive number assigned to the vehicle set forth in numerals three inches long, each stroke of which shall be at least one half an inch in width; provided that in the case of a motor vehicle registered under section four of this act there shall be on such plate or placard in addition to the foregoing the letter "M," the same to be at the right of the distinctive number, each stroke of such letter to be at least three inches long and one-half an inch in width.

Section 4. Registration by Manufacturers and Dealers.

1. Every person, firm, association or corporation manufacturing or dealing in motor vehicles may, instead of registering each motor vehicle so manufactured or dealt in, make a verified application upon a blank to be furnished by the Secretary of State for a general distinctive number for all the motor vehicles owned or controlled by such manufacturer or dealer, such application to contain: (1) a brief description of each style or type of motor vehicle manufactured or dealt in by such manufacturer or dealer, including the character of the motor power, the amount of such motor power stated in figures of horsepower, and the weight in pounds of each such style or type; and (2) the name, residence and business address of such manufacturer or dealer. On the payment of a registration fee of ten dollars, such application shall be filed and registered in the office of the Secretary of State in the manner provided in section two of this act. There shall thereupon be assigned and issued to such manufacturer or dealer a general distinctive number and duplicate certificates of registration in the manner provided by section two, which shall be in the form of plates as provided in section three, duplicates of which shall be carried or displayed by every motor vehicle of such manufacturer or dealer, so registered when the same is driven or operated on the public highways. Such manufacturer or dealer may obtain as many duplicates of such certificates of registration as may be desired upon payment to the Secretary of State of one dollar for each duplicate. Nothing in this subdivision shall be construed to apply to a motor vehicle operated by a manufacturer or dealer for private use or for hire.

2. Such registration shall be renewed annually in the same manner upon the payment of a fee of Ten Dollars, such renewal to take effect on the first day of January of each year.

Section 5. Exemption of Non-resident Owners.

The provision of the foregoing sections shall not apply to a motor vehicle owned by a non-resident of this State, provided that the owner thereof shall have complied with the provisions of the law of the State of his residence relative to motor vehicles and the operation thereof and shall conspicuously display his State number, and provided further that the provisions of the foregoing sections of this act are substantially in force in such State; provided that this exemption shall not apply to non-resident corporations doing business in this State.

Section 6. Brakes, Horns, Lamps, etc.

1. Every motor vehicle, operated and driven upon the public highways of this State, shall be provided with adequate brakes sufficient to control the vehicle at all times, and a suitable and adequate bell, horn or other device for signalling, and shall, during the period from one hour after sunset to one hour before sunrise, display at least two lighted lamps on the front and one on the rear of such vehicle, which shall also display a red light visible from the rear. The white rays of such rear lamp shall shine upon the number plate carried on the rear of such vehicle. The light of the front lamps shall be visible at least two hundred feet in the direction in which the motor vehicle is proceeding.

2. No person shall operate or drive on the public highways of this State a motor vehicle on any of whose wheels is a tire chain or non-skidding contrivance or tire composed in whole or in part of metal, except when such highways are wet and slippery or covered with ice or snow.

3. A person operating a motor vehicle shall, at request or on signal by putting up the hand, from a person riding, leading or driving a horse or horses or other draft animals, bring such motor vehicle immediately to a stop, and, if traveling in the opposite direction, remain stationary, so long as may be reasonable to allow such horse or animal to pass, and, if traveling in the same direction, use reasonable caution in thereafter passing such horse or animal; provided that, in case such horse or animal appears badly frightened or the person operating such motor vehicle is requested so to do, such person shall cause the motor of such vehicle to cease running so long as shall be reasonably necessary to prevent accident and insure the safety of others.

Section 7. Speed Permitted.

No person shall operate a motor vehicle upon the public highways of this State recklessly or at a rate of speed greater than is reasonable and proper having regard to the width, traffic and use of the highway, or so as to endanger property, or the life or limb of any person.

Section 8.—Registration of Chauffeurs.

1. Every person hereafter desiring to operate a motor vehicle as a chauffeur shall file in the office of the Secretary of State, upon the payment of a registration fee of five dollars, a verified application for registration on a blank to be furnished by the Secretary of State for that purpose containing (1) the name and residence address of the applicant and that he is competent to operate a motor vehicle and is over 18 years of age; (2) the trade name and motor power of the motor vehicle or vehicles he is competent to operate; (3) whether or not the applicant has been previously convicted of a violation of any of the provisions of this or any other motor vehicle law or ordinance, giving the date and place of such conviction and the provision or provisions of the law or ordinance violated; provided that if such chauffeur shall intend to operate only vehicles used solely for commercial purposes, he shall so certify in such application and shall pay a registration fee of two dollars.

2. Upon the receipt of such an application, the Secretary of State shall thereupon file the same in his office, assign the applicant a number and register him in a book or index which shall be kept in the same manner as the book or index for the registration of motor vehicles. The Secretary of State shall also furnish to the clerk of every county of the State within sixty days after this act takes effect and once each month thereafter, a full and accurate list of chauffeurs so registered, with their addresses and the numbers assigned to each, in the same manner as provided in section two with reference to registered motor vehicles. Such lists shall be filed by such county clerks and be kept as public records, open to inspection during reasonable business hours.

3. The Secretary of State shall forthwith upon registering such chauffeur, and without other fee, issue and deliver to him a badge of aluminum or other suitable metal, which shall be oval in form with its greater diameter not more than two inches, upon which shall be stamped the words "Registered Chauffeur Number ——; State of ——" with the number inserted therein. This badge shall thereafter be worn by such chauffeur, pinned upon his clothing in a conspicuous place, at all times while he is operating a motor vehicle upon the public highways of this State. In the event of the loss, mutilation or destruction of a chauffeur's badge, such chauffeur may obtain from the Secretary of State a duplicate thereof upon filing in the office of the Secretary of State an affidavit showing the fact and the payment of a fee of one dollar.

4. No chauffeur, having registered as hereinbefore provided, shall voluntarily permit any other person to wear his badge; nor shall any person, while operating a motor vehicle upon the public highways of this State, wear a chauffeur's badge belonging to another person, or a fictitious chauffeur's badge.

5. No person shall operate or drive a motor vehicle as a chauffeur, upon the public highways of this State after thirty days after this act takes effect, unless such person shall have complied in all respects with the requirement of this section, provided, however, that a non-resident chauffeur, who has registered under the provisions of the law of the State of his residence which are substantially similar to the provisions of this section, shall be exempt from registration under this section; and provided further he shall wear the badge assigned to him in the State of his residence in the manner provided in subdivision three of this section.

Section 9.—Local Ordinances Prohibited.

Except as herein otherwise provided, local authorities shall have no power to pass, enforce or maintain any ordinance, rule or regulation requiring from any owner or chauffeur to whom this act is applicable, any tax, license or permit for the use of the public highways, or excluding any such owner or chauffeur from the free use of such public highways, or in any other way respecting motor vehicles or their speed upon or use of the public highways; and no ordinance, rule or regulation contrary to the provisions of this act, now in force or hereafter enacted, shall have any effect; provided, however, that the powers given to local authorities to regulate vehicles offered to the public for hire, and processions, assemblages, or parades in the streets or public places, and all ordinances, rules and regulations which may have been, or which may be enacted in pursuance of such powers shall remain in full force and effect; and, provided, further, that local authorities may set aside for a given time a specified public highway for speed contests or races, to be conducted under proper restrictions for the safety of the public, and provided further, that local authorities may exclude motor vehicles from any cemetery or grounds used for the burial of the dead.

Section 10.—Penalty for Violations of Sections Two, Three, Four, Five and Six.

1. The violation of any of the provisions of sections two, three, four, five and six of this act shall be punishable by a fine not exceeding fifty dollars.

2. The violation of any of the provisions of sevtion seven of this act shall be deemed a misdemeanor punishable by a fine not exceeding two hundred and fifty dollars for a first offense and by a fine not exceeding five hundred dollars or imprisonment for not more than six months or both for a second or subsequent offense; but nothing herein shall prevent the indictment of a person so violating under any other law.

3. The violation of any of the provisions of section eight of this act shall be punishable by a fine not exceeding fifty dollars or the suspension of the right to operate a motor vehicle as a registered chauffeur under the provisions of this act for a period not more than six months.

4. Any person using, operating, driving or tampering with a motor vehicle without the permission of the owner of such motor vehicle is guilty of a misdemeanor punishable by a fine not exceeding five hundred dollars and imprisonment for not more than six months, or both.

5. Upon the conviction of any person for a violation of any of the provisions of this act, the magistrate or other judicial officer before whom the proceedings are held, shall immediately certify the facts of the case, including the name and address of the offender, the character of the punishment and the amount of any fine imposed and paid, to the Secretary of State, who shall enter the same either in the book or index of registered motor vehicles or in the book or index of registered chauffeurs as the case may be, opposite the name of the person so convicted, and in the case of any other person, in a book or index of offenders to be kept for such purpose, in alphabetical order. The Secretary of State shall send notices of all convictions for violations of section seven of this act, with the names and addresses of the persons convicted and the judgments of the court on such convictions, to the clerk of every county in the State, who shall enter the same on the lists of registered motor vehicles or registered chauffeurs as the case may be, opposite the name of the person so convicted, or on a list of other offenders which he shall maintain in his office as a public record in the same manner as the lists of registered motor vehicles and registered chauffeurs, and on due application furnish copies of such lists to the magistrates or other judicial officers of his county before whom violations of the provisions of this act are triable. If any such convictions shall be reversed upon appeal therefrom, the person whose conviction has been so reversed may serve on the Secretary of State a certified copy of the order of reversal, whereupon the Secretary of State shall enter the same in the proper book or index in connection with the record of such conviction, and shall also notify each county clerk of the same.

6. In case any person shall be taken into custody because of a violation of any of the provisions of this act, he shall forthwith be taken before the nearest magistrate or justice of the peace in any city, village or county, or before any acessible captain, sergeant of police or acting captain or sergeant of police who shall have the powers of a magistrate or justice of the peace, and be entitled to an immediate hearing; and if such hearing cannot then be had, be released from custody on giving a bond or undertaking executed by a fidelity or surety company authorized to do business in this State, such bond or undertaking to be in an amount not exceeding two hundred and fifty dollars for his appearance to answer for such violation at such time and place as shall then be indicated, or on giving his personal undertaking to appear to answer for such violation at such time and place as shell then be indicated, secured by the deposit of a sum not exceeding two hundred and fifty dollars, or in lieu thereof, in case the person taken into custody is the owner, by leaving the motor vehicle, or in case such person taken into custody is not the owner, by leaving the motor vehicle with a written consent given at the time by the owner, who must be present, with such judicial officer; or in case such judicial officer is not accessible be forthwith released from custody on giving his name and address to the person making the arrest and depositing with such arresting officer the sum of two rundred and fifty dollars, or in lieu thereof, in case the person taken into custody is the owner, by leaving the motor vehicle, or in case such person taken into custody is not the owner, by leaving the motor vehicle with a written consent given at the time, by the owner, who must be present; provided that, in such case, the officer making the arrest shall give a receipt in writing for such sum or vehicle deposited, and notify such person to appear before the most accessible magistrate, naming him, and specifying the place and the hour. In case such bond or undertaking, shall not be given, or deposit made by an owner, or other person taken into custody, the provisions of law in reference to bail in cases of misdemeanor shall apply.

7. In case the magistrate before whom any person shall be taken, charged with the violation of any provision of this act, shall not have jurisdiction to try the defendant, but shall hold the defendant to answer as provided by —— of the —— shall admit such defendant to bail upon his giving a surety company's bond or undertaking to appear to answer for such violation at such time and place as shall be indicated, or upon his giving his written undertanking in the form provided in —— in a sum equal to the maximum fine for the offense with which he is charged, or upon depositing such amount in cash with such magistrate who shall give a receipt in writing for such sum.

8. Upon the person who has been taken into custody and given security or bail for his appearance presenting himself for trial, the judicial officer before whom such person is to be tried, shall, before the beginning of such trial, return to the person about to be tried, the property or money given as security or bail.

Section 11.—Registration Fees to be Paid into State Treasury.

1. The registration fees provided herein shall be paid by the Secretary of State into the State treasury. The legislature shall annually make appropriations of an amount sufficient to pay all proper expenses of this act.

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2. All fines, penalties or forfeitures imposed or collected for a violation of any of the provisions of this Act, or of any act in relation to the use of the public highways by motor vehicles now in force or hereafter passed, which are imposed or collected under the sentence or judgment of a court of special sessions, held or presided over by a justice of the peace, shall be paid over by such justice of the peace within ten days after receipt thereof to the treasurer of the State, with a statement accompanying the same, setting forth the action or proceeding in which such moneys were collected, the name and residence of the defendant, the nature of the offense and the fine, penalty or sentence imposed. On the first day of each month, or within ten days thereafter, such justice of the peace shall make and forward to the treasurer of the State, a verified report of all criminal proceedings instituted or tried before him during the preceeding calendar month for violations of any of the provisions of this act, or of any act in relation to the use of the public highways by motor vehicles, which report shall set forth the name and address of the defendants, the nature of the offenses and the fines and penalties collected or imposed by such justice; which reports shall be public records and open to inspection during reasonable business hours.

3. All moneys paid into the State treasury pursuant to this act, except such as shall be appropriated under subdivision one of this section, shall there be maintained as a separate fund for the maintenance and repair of the irpmoved roads of this State, outside of corporate limits of towns and cities.

Section 12—Acts Repealed.

All acts or parts of acts inconsistent herewith or contrary hereto, are hereby expressly repealed.

Section 13.—Title of Act and When It Takes Effect.

This act shall be known as the "Motor Vehicle Law," and shall take effect the first day of —— nineteen hundred and ——; provided that applications for registration may be made and registration certificates and badges issued at any time within thirty days prior to such date.

Surface Schemes for New Orleans.

Three bidders are in hot competition for the contract to prepare the race track at the New Orleans fair grounds for the automobile speed contests of Mardi Gras week, February 20, 21 and 22. The recent arrival of a representative of a concern manufacturing a dust-laying and surface-packing preparation made from the refuse of a glucose factory, and the attendant publicity given his mission of securing the contract for transforming the dirt course into a cement-like oval, aroused two Louisiana concerns which claim to have a superior product. One of these is an oil well syndicate operating near Jennings, La. The other is a wealthy Louisiana planter who has several hundred barrels of the coarse grade molasses in storage. The planter had discovered the surface-packing properties of molasses by accident, a barrel having burst and the contents spilled on the road. It was soon noticed that for several square yards the roadway was like a cement floor, but no attention was paid to the commercial possibilities of crude molasses, which is very cheap and sometimes unusable as a food product. Reading the stories of the necessity for a preparation to harden the fair grounds track for the automobile races, the planter offered to furnish 500 barrels of molasses free to demonstrate the practicabil- practice might be suppressed.

Proposes Rogues' Gallery for Scorchers.

Captain O'Brien of the Chicago City Detective Bureau has become enthused with the project of establishing a special department of the rogues' gallery for the portraits of scorching motorists. By preserving the records of all difficulties into which habitual scorchers are plunged, he thinks the practice might be suppressed.

CONGRESS TO REGULATE MOTORING

Bill Introduced Imposes no Speed Limit, but Requires Registration—Applies Only to Federal District.

Abolition of the speed limit and provision that motorists shall drive with due regard to life, limb and property" is one of the more significant clauses in the automobile bill which was introduced into the House of Representatives at Washington yesterday (Wednesday) by Representative Olcott, of New York. The bill is intended to regulate the operation of motor vehicles in the District of Columbia and the territories, and is not particularly radical in other respects.

The measure requires owners of machines to register them at the office of the Secretary of Commerce and Labor, a filing fee of $2 for each machine to be charged Owners of a number of machines may take out a series of licenses, the first to cost $2 and the others 50 cents each. It is specifically provided that the law shall in no way interfere with the right of one injured by an automobile to sue to recover damages. There is a provision requiring automobiles to be equipped with a brake and with a bell, horn or other device to attract the attention of pedestrians and drivers.

Between the hours of sundown and sunrise all machines shall carry two white lanterns, which shall be kept lighted during that period. In case of accident a machine will be required to stop in order that persons injured may secure the registered number. In approaching traffic it is required that chauffeurs shall give due notice of approach, and in passing a fractious horse or any animal that appears to be nervous the operator of the machine is required to slow down and on a signal from the driver shall stop entirely. Violations of the law requiring machines to register may be punishable by a fine of $100 or thirty days in jail. For violation of any other provision of the bill a fine of $50 or ten days in jail may be imposed.

Test Case Under New Jersey's Law.

The constitutionality of the Frelinghuysen automobile law of New Jersey, insofar as it relates to the exaction of a fee for the registration of motor vehicles, is to be tested in the Supreme Court of that State. Supreme Court Justice Reed on Monday, 25th inst., upon the application of Peter Backes, granted a writ of certiorari in the case of Richard Johnson, of the White Steamer Co., who was arrested in Trenton last May by Captain Cleary of the local police force for running an automobile without a license. He was fined $100 in the police court, and the fine was subsequently affirmed by Judge Rellstab in the Mercer county court.

In the meantime an unsuccessful effort was made to get the case before the United States courts upon habeas corpus proceedings. These, however, failed because it was shown that Johnson was not in actual custody, having been released and allowed to return to New York immediately after his arrest.

Mr. Backes contended that the Frelinghuysen act is unconstitutional because it abridges the guaranteed liberty of the individual. He argued that it is not in its essence a license act, but is really a tax measure, and therefore, under the Constitution, the tax must be levied according to uniform laws. In support of this contention he showed that in 1906 the revenue derived from licensing automobiles was $5,480; in 1907 it was $82,685, and in 1908, $149,288. The expenses of maintaining the department in 1907 were $13 372, and in 1908, $29,367. Assuming that the license is required as a tax, Mr. Backes argued that it is not levied on the basis of the value of cars, but upon their horsepower, which is no indication of their value.

Mr. Backes argued that there was a further unjust discrimination against the automobile, which is required to pay taxes not assessed against other users of the public highway. He also raised the question that the Frelinghuysen act is in violation of the interstate commerce law. In connection with this, one of the contentions made by Johnson was that when arrested he was taking tools from the New York office to the Philadelphia office of the White Steamer Co.

It is expected that arguments on the writ of certiorari will be heard at the February term of the Supreme Court.

Protests Against Sport on New Road.

Frequently when a new road is constructed, especially one on a stiff hill, local motorists and automobile dealers flock to the course to try their cars on it, with the result that the road surface is soon torn up and put in bad condition. At least, such is said to be the result of the practice, and among those who hold that view is Contractor William Fogarty, of Cincinnati, who constructs roads in that city, and has filed a protest with the Board of Public Service recently, in which he complains of the results of this practice. In his complaint he says:

"I wish to respectfully call your attention to the practice of automobile companies of testing the hill-climbing power of their machines on Sycamore avenue. This avenue has just been completed and accepted by the city, and inasmuch as I am under contract to maintain the roadway I wish to protest against this practice. Ordinary traffic, I am satisfied, will not damage the avenue; but if it is used as a testing track I decline to be responsible for the consequences."

The matter was turned over to the City Engineer for report.

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REGISTRATION FOR ALL VEHICLES

One of Several New Propositions Before the Massachusetts Legislature—Bill to Create a Highway Police.

Four bills of interest to motorists are before the Massachusetts legislature and their passage is urged by the Automobile Owners Association through its counsel, Francis Hurtubis, Jr. One of them provides for the registration of all horse drawn vehicles, carriages, wagons, carts, sleighs and sleds on a plan similar to that applying to motor vehicles. Another provides for a number of highway police to be appointed by the State highway commission. A third takes away from towns and cities the right to exclude motor vehicles whose owners have complied with the laws, unless such towns or cities act with the approval of the highway commission. The fourth bill makes it a criminal offense to tamper with motor vehicles or to steal rides thereon. In connection with these bills Mr. Hurtubis is filing for the Federation of American Motorcyclists a bill providing that motorcycles shall be classified and registered apart from automobiles and other vehicles, and that they be given a separate code of their own and different licenses.

The main provisions of the bill for registering horse-drawn vehicles include registration by the highway commission, as in the case of automobiles, and the issuance of car numbers to be conspicuously displayed. It gives free use of the highways by non-residents for a period of ten days. Money derived from registration fees is to be divided in the ratio of 60 per cent. to the Commonwealth and 40 per cent. to the cities and towns in which vehicles are registered, the money to be used in the maintenance or construction of highways. The bill requires that every vehicle that is out after sunset shall display at least one light.

Under the provisions of the bill providing for highway police, such officers will possess all the powers of constables, except the service of civil process, and of police officers and watchmen, and may serve all processes lawfully issued by the highway commission. Each is to be provided with a motorcycle and his duty will be to prevent "reckless or dangerous driving of motor and other vehicles upon the highways" and generally to enforce "all laws relative to motor and other vehicles." The bill provides that "cities and towns shall have no power to establish or maintain 'traps' so-called, except in such places as may meet with the approval of the Massachusetts highway commission."

Yet another bill has been added to the mass of automobile legislation the State Solons are called upon to digest, and it will afford satisfaction only to lovers of noise. It was filed on Saturday, 23d inst., by Representative Waugh, of Somerville, and is entitled "An act to compel automobilists to give continuous warning of their approach." The measure seeks to force automobilists to place upon their machines a sound contrivance, not specified, which shall keep going continuously, but which will make no more noise than a sleigh bell.

Wants $5,000 for Involuntary Jump.

On November 13 last, W. F. English, M. D., of Saginaw, Mich., jumped with his automobile from a bridge into the river and now wants that city to pay him $5,000 for doing the trick. While it might appear at first that Dr. English is a high-priced performer in view of the fact that no high-dive artist ever receives that amount for one single performance, the doctor claims that Saginaw owes him that sum as legitimate damages. In an itemized statement, after asserting that the damage was caused owing to the negligence of the city in allowing a bridge to stand in such a condition that it was dangerous for a motor car to approach at even a most moderate speed, the doctor lists the following items:

"Injury to automobile, $800; loss of watch, $35; paid to remove auto from river, $17; paid to repair overcoat and clothing, $11." In concluding he remarks, "affiant further says that on account of said injuries aforesaid he was unable to perform any part of his business for one month, amounting to a loss of the sum of $500; that he was compelled to pay the expense of treatment at Mt. Clemens, amounting to $50, for all of which he intends to hold the said city liable."

Speare Recalled to Bay State Presidency.

Lewis R. Speare, a former president of the Bay State Automobile Association, is given at the head of that organization, having been elected at the annual meeting in Boston on Monday, 4th inst., to succeed Eliot C. Lee. Other officers elected were: Vice-president, Harland W. Whipple; treasurer, J. S. ..athaway; secretary, J. Fortescue. The following were elected to the board of directors for 1909: George W. McNear, C. F. Whitney, F. A. Hinchcliffe, Kenneth Blake and Dr. John F. Hovestadt. The board of directors have appointed the following committees for 1909: House committee, George W. McNear, R. W. Daniels, Dr. I. D. Carl, A. P. Underhill, J. Fortescue; entertainment committee, Victor A. Charles, G. Duthie Strachan, C. I. Campbell, N. B. Buxton, F. T. O'Brien, Eugene Selg; touring and contest committee, Kenneth M. Blake, F. E. Wing, Dr. J. F. Hovestadt, F. A. Hinchcliffe, C. J. Bailey, W. G. Schmunk; membership committee, Dr. Julius F. Hovestadt, J. Fortescue, C. F. Whitney; press committee, J. S. Hathaway, C. I. Campbell.

His commercial occupation as advertising manager of the Diamond Rubber Co. has shown its influence in the latest book from the pen of James A. Braden. His new work is titled "The Auto Boys."

WILL TRY "BUMP-THE-BUMPS"

Plan to Avoid Accidents at Crossings to be Tested on Long Island Railroad—Design for "Bumps" Drawn.

"Bump-the-bumps" experiences are to eache motorists the wisdom of slowing down at railroad crossings on Long Island. That the plan was under consideration by the officials of the Long Island Railroad was announced in the Motor World some time ago. Now President Ralph Peters has directed that it be tried experimentally at the eastern end of the island.

Chief Engineer Savage has prepared drawings to scale for the "bumps," which are to be introduced first at some cross-road other than a macadam road in Suffolk county. The "bumps" will be 5½ inches righ, rising and falling within 8 feet. This, Chief Engineer Savage believes, will cause any driver who does not court wreck to slow down or stop. After the first "bumps" are constructed they will be tried by engineers in automobiles.

It is said that no exception will be made in the case of crossings protected by gates or flagmen.

Alfred J. Eno, of Jamaica, president of the Long Island League, who originated the "bump-the-bumps" idea is seeking permission from the city authorities to have "bumps" established on city grade crossings.

Tourists' Foreign Cars Must Pay Duty.

Because of the decision by the United States Court of Appeals, at New York, declaring that automobiles are not personal or household effects within the meaning of the tariff laws, as recorded in the Motor World last week, Assistant Secretary Reynolds, of the Treasury Department at Washington, has addressed instructions to the collectors of customs at the various ports directing that henceforth all automobiles of foreign manufacture brought to the United States shall be assessed at the full 45 per cent. duty regardless of whether or not they have been used abroad by Americans. This order is a complete change from the past practice of the Treasury Department in classifying automobiles as household effects when used abroad by the importing owner for at least one year before being brought into this country.

Suppresses the Dazzling Upward Glare.

License to make the Wridgway "No Glare" shade for automobile lamps has been given to Gray & Davis, Amesbury, Mass. The device keeps the dazzling upward rays from blinding other users of the highway. Lamp fittings of this kind have been given great importance recently through the action of New York City and other municipalities in forbidding the use of lamps that are objectionable by reason of their glare.

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EVOLUTION OF AMERICAN QUALITY

Early Makers Handicapped by Lack of Proper Materials—Now on Even Terms with European Rivals.

Questions as to the relative supremacy of foreign and American built automobiles have taken on an added quota of interest within the past few weeks owing to the tariff agitation, and the revelations as to the comparative costs of production here and abroad which have followed in its train. Formerly it used to be considered a foregone conclusion that the European-made car was the standard of motor vehicle excellence, and the triumphs of the American makers were judged almost entirely on this standard. More recently, however the old assertion that the American manufacturers were able to produce as good cars as those whose factories were located on foreign soil began to assume less the aspect of a vain boast and to become an accepted reality. That the transition was due quite as much to the mastery of purely constructional difficulties as to any development of skill on the part of the designers, or to careless methods on the part of the builders, is revealed by S. I. Birdsall, whose experience as a designer and builder of American machines, as well as his intimate experience in the handling of the imported product has placed him in a position to judge accurately of conditions obtaining formerly and at the present time.

"In the early days of the automobile industry in the United States little or nothing was known of the properties required in the materials of construction," he remarks. "For example: Aluminum was a novelty; cast-iron and bronze were used for the gear-wheels of the speed-change mechanism; roller bearings having unhardened rolls operated in soft axle-tubes as a bearing for soft steel solid axles; bronze and malleable iron were used for connecting rods; the hardening and grinding of crankshafts and many other parts were unknown; brakes were lined with wood blocks; and yellow metal for bearings was 'bronze', regardless of the composition; hardening meant 'case-hardening' sometimss .001 of an inch deep, sometimes more, but always an indefinite amount.

"Heat treatment, alloy steels and hardening as we know them to-day were practically unknown. Structural steel; bar, plate and rod stock; woods of various kinds; cast iron; brass and bronze of the ordinary 'merchant' shapes and qualities were alone available for the automobile builder.

"In Europe, on the other hand, the requirements of foreign gunmakers, engine builders and others had created a demand for special steels and bronzes. From the beginning of the automobile industry in France the machines were entered in races and other competitions that developed in a few hours weaknesses and shortcomings of design in materials that would have taken months of ordinary use. Finding that increasing the size alone of a weak part to make it strong enough was not always the remedy, or even always feasible, the manufacturers naturally turned to the steel makers for better materials.

"Right here another difference between the United States and Europe should be noted. In the United States the steel makers wanted 'tonnage.' That is, they would not get out a special grade of metal and set up the rolls to shape it unless an order for many thousands of tons was placed. Whereas, in Europe, the steel mills would take an order for a few hundred pounds of a steel of special composition.

"The net result was that the French automobile builders by races that tested the materials and design of construction, by the facility and possibility of procuring proper materials, by cleverness in design and by keen competition, soon distanced all other nations in the production of cars that were reliable, fast and dependable.

"A concrete example of the above is furnished by the actual experience of one of the early American manufacturers who conceived the idea of building in this country an exact copy of a well-known and successful French car. After the first car was built the testing out proved that the American tubing used in the frame had only about one-half the strength and stiffness of the tubing used in the model. The gears would not stand up under the work and the wearing qualities and general durability of the entire machine were far below the French model. A careful investigation showed that the difference was solely due to the quality of the materials used.

"As at that time practically no one here who was available, knew the difference between the materials in the model and the copy, and there were not procurable in this country materials from a constructive and commercial point of view, that would answer the purpose, the manufacture of the car was discontinued.

"Conditions in the American engineering talent and material market have in the last three or four years completely changed. We now know what material to use in each particular place, how to use it, where to get it, and why we use it.

"It is, moreover, a fact that the reverse of the above mentioned case has happened. An American manufacturer in 1899 and 1900 produced a number of 8 horsepower cars, with single cylinder, vertical in front engine. The owner of one of these cars, appeared within the past two months at a New York salesroom and stated that he still used his little 8 horsepower original American car, and that the bearings and all of the parts had stood up wonderfully well. This car must have had excellent material and admirable design. As a matter of fact one of the largest manufacturers in Germany acquired in 1898 exclusive rights to manufacture this same car of American design and on American specifications for material. All the detailed drawings were converted into the metric system and sent to Europe with a model and some parts. The car, though well known and successful in the United States, was not satisfactory when made by the German maker with European material.

"The American industry has grown to such proportions that steel and other material manufacturers seek and cater to the wants of the automobile builder At the present time there is not, and in fact for some time past, there has not been the difference between the foreign and the domestic car that formerly existed. If the American engineer is not satisfied with American materials, all kinds and grades of foreign materials can now be procured in stock in the American market, and at prices commercially practicable.

"The only possible reason for the purchase of a foreign car in this country today is the same one that leads many people to buy English clothes and French hair-dyes. There is an idea very prevalent in some quarters that practicaly all the cars made in France, England, Italy, Germany and Belgium are as good or better that the better grades of cars made in this country, whereas the reverse is really the truth. Some of the foreign cars that have had a large sale and vogue in this country and been accepted without question as being of the highest grade were classed as second-grade at home.

"It is true that there are more builders of high-grade finely finished cars in Europe than in this country. But their combined output is not as great as the combined output of the relatively few similar makers here. On the other hand there are practically no cars built here as 'rotten' as some of the foreign ones."

Automatic Cleaner for Wind Shields.

A device for automatically keeping the transparent surface of wind shields clean and free from dew or sleet has recently been perfected by a resident of Stassfort, Magdeburg, Germany, according to American Consul Frank S. Hannah. The unusual feature of the invention consists in the substitution for the usual stationary window of an endless strip of celluloid, or some other suitable material, which is kept revolving on rollers above and below, and at the same time is pressed against a brush which removes the particles of snow or moisture which obstructs the vision. The power for keeping this strip in motion is derived from the engine.

If a crank case gets unusually hot, it is certain that the piston is letting hot gas past it, and the piston rings should be looked after. Naturally the injunction is particularly important in the case of a two-cycle motor.

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The Week's Patents.

901,080. Universal Coupling. Herman Dock, Wyncote, Pa., assignor to Dock Gas Company, New York, N. Y., a Corporation of New Jersey. Filed Oct. 11, 1907. Serial No. 396,884.

1. In a universal coupling; two shaft ends, two sections, one of said sections being hinged to one shaft end the other section having a transverse guide way to receive the first-mentioned section to permit it to move laterally relatively thereto, and an anti-friction device co-operatively connecting both of said sections.

901,365. Valve Controlling Mechanism for Internal-Combustion Engines. Harry M. Neer, Columbus, Ohio. Filed Feb. 13, 1908. Serial No. 415,631.

In an internal combustion engine, the combination with a crank case, a crank shaft therein, connecting rod operating cranks on said crank shaft, piston containing cylinders, exhaust and inlet valve casings, valves in said casings and valve rods extending therefrom into said crank case, and a roller pivoted in each of said valve rods, of a shaft within the crank case rotated by the crank shaft, a pinion carried on said shaft, a gear wheel meshing with said pinion, a cam segment on the upper side of said gear wheel, and a plate supported above said gear wheel and having a depressed portion, said valve rod rollers adapted to bear on said gear wheel and its cam projection and the lower ends of said rods adapted to engage the underside of said plate.

901,371. Exhaust Muffler. John M. Porter, John F. Laird, and Albert H. Geilfuss, Parkersburg, W. Va. Filed Nov. 4, 1907. Serial No. 400,694.

1. A muffler of the character described comprising two plates or sides, a series of cells arranged on each of said plates, each inclosing cell being of a greater height and of a larger diameter than the cell inclosed thereby, means for allowing the exhaust to pass from each inclosed cell to each inclosing cell, and a rod passing through the muffler in engagement with each of said cells for securely tying the same in position upon the said plates, substantially as described.

901,456. Variable Speed Gearing. Achille Loithon, Plaine St. Denis, France. Filed Aug. 7, 1907. Serial No. 387,493.

Variable speed gearing comprising a shaft two series of toothed wheels of progressive diameter, one series being loosely mounted upon the shaft, coupling clutches for coupling the loose toothed wheels with the shaft, forks for operating said clutches having two arms, a pin connecting the ends of the three arms, spiral springs upon said pin between each lateral arm and the guide arm, a connecting rod, connecting the forks of two adjacent clutches being slotted to permit a certain play to the forks and an operating shaft for the forks having guide grooves for the guide arms of said forks substantially as described and shown and for the purpose set forth.

901,493. Automobile. Frank A. Stephens, Dunkirk, N. Y. Filed Dec. 9, 1904. Serial No. 236,148.

1. In an automobile, the combination with the driving axle thereof, of a plurality of engines, a gasolene engine adapted to run at uniform speed, and an atmospheric engine adapted to be driven at differing speeds and connected directly to the driving axle of the automobile, an air pump for supplying compressed air to the atmospheric engine and friction mechanism operatively connecting the air pump to the gasolene engine and comprising a clutch member on the shaft of the gasolene engine, an eccentric loosely mounted on said gasolene engine shaft in proximity to said clutch member, an eccentric rod having one end pivoted to the air pump and its opposite end secured to the strap and a collar forming the other clutch member, substantially as set forth.

901,508. Controlling Mechanism for Power-Driven Vehicles. Charles W. Willette, Tacoma, Wash., assignor of one-half to Julian Clough, Tacoma, Wash. Filed Dec. 27, 1907. Serial No. 408,239.

1. In a power driven vehicle, the combination of a rotating shaft, a movable bearing for the shaft; an outer fixed sleeve for said movable bearing, allowing a longitudinal motion thereof therein; a thrust shoulder on each side of said shaft bearing, whereby said shaft moves along its axis with the bearing; and means for moving said bearing along its axis.

901,518. Planetary Gearing. Alanson P. Brush, Detroit, Mich. Filed July 3, 1907. Serial No. 381,970.

1. In planetary gearing, the combination of a power shaft having a crank pin, an external gear mounted on said crank pin, a driven member, an internal gear fast to said driven member in mesh with said external gear, and means for locking said external gear to the power shaft.

902,551. Tire Jacket for Vehicle Wheels.

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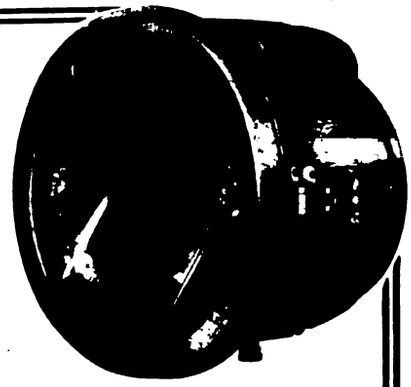
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James Bowie, Omaha, Neb. Filed March 30, 1908. Serial No. 424,091.

A jacket for rubber tires comprising an annular concavo-convex ring the inner face of which rests directly against the face of the rubber tire, said ring extending more than half way around said tire and the edges of said ring terminating in thickened portions, the inner face of said thickened portions bearing against the tire and the outer faces presenting vertical walls.

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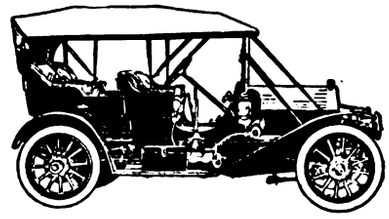
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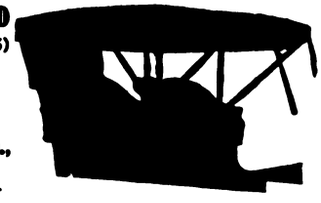
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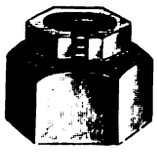


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CANNOT shake loose. They add an important factor of safety and give a feeling of security. Columbia Lock Nuts are the best kind of accident insurance. Used by most makers of the best cars and by leading railroads, etc. Send us a two-cent stamp, size and thread of the bolt, and we will forward a Columbia Lock Nut for it.



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The Only Cure for Tire Troubles

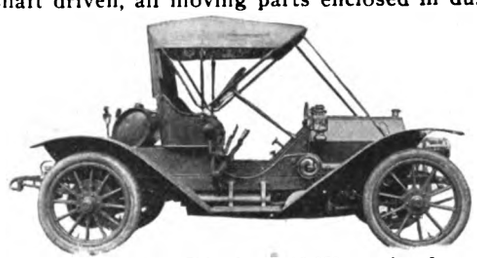
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ALL CARS SOLD LICENSED UNDER AND GUARANTEED BY US ARE SELDEN PATENT FOR ONE YEAR.

Specifications Common to All Palmer-Singer Models

Nickel steel used to secure lightness and strength. Imported F. & S. ball bearings exclusively. Bosch high tension magnetos and multiple disc clutches in all models. Drop forged I beam, front axle—four-speed selective type, sliding gear transmissions with direct drive on third speed. All brakes equalized, all expanding type and on rear wheels. Universal joints on all steering connections. All types shaft driven, all moving parts enclosed in dustproof cases.



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1909 Style

Guaranteed Absolutely Accurate

is the only speed indicator made on the Magnetic Induction principle. Because of the principle it accurately indicates every range of speed from zero to the maximum.

All other instruments are made on the centrifugal principle. They fail to indicate any speed whatever under 5 to 10 miles per hour.

The Auto-Meter is so durably made that practical tests have shown that it will endure a **MILLION MILES** of riding without perceptible wear, or departing from absolute accuracy more than **10 feet to the mile.**

We invite comparative tests. Before you decide on any Speed Indicator, put the Auto-Meter on one side of your dash and any other indicator at any price on the other. Then use your watch over a measured course. Keep the instrument which **tells** the **truth.** We know which it will be.

The Warner Instrument Company

Factory and Main Offices—362 Wheeler Ave., BELOIT, WISCONSIN

BRANCH HOUSES—New York, 1902 Broadway; Boston, 925 Boylston St.; Philadelphia, Cor. Broad and Race; Pittsburg, 3432 Forbes St.; Cleveland, 2062 Euclid Ave.; Buffalo, 722 Main St.; Detroit, 239 Jefferson Ave.; Chicago, 1305 Michigan Ave.; Indianapolis, 330½ N. Illinois St.; St. Louis, 3923 Olive St.; San Francisco, 550 Golden Gate Ave.; Los Angeles, 1212 S. Main St.

Model B—Brush Runabout

A CAR OF SIMPLE DESIGN MADE WELL
NOT A COMPLICATED DESIGN MADE CHEAPLY

Its records and the opinions of its users speak more loudly than self praise. Agencies for 1909 are being closed rapidly. Much good territory still open.

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MILLER'S Anti-Freeze Compound

DIRECTIONS FOR USE.

The radiator should be thoroughly washed out with hot solution of caustic soda, which will remove any dirt, and then clean water should be put in to see if the radiator leaks any place.

If the radiator is found not to leak, put in the solution. To get a mixture that will not freeze at 15 degrees below zero, Fahrenheit, add ten pounds of the compound to two gallons of water. To get a solution that will not freeze 30 degrees below zero, Fahrenheit, add ten pounds of the compound to every six quarts of water.

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Price, 10-lb. cans..... $1.00 each.

Pan-American Automobile Body Polish



Pan-American Polish was awarded the Bronze Medal ("the only one awarded") at the Louisiana Purchase Exposition at St. Louis, 1904. This polish has been carefully prepared for the Automobile trade. It is also applicable to the carriage trade, or can be used on any varnished furniture or wood-work of any kind. It will remove stains, cover scratches; leaves the automobile with its original new lustre without being sticky or greasy.

It can be used on the leather seats or tops with the very best results. Can be used on any color or kind of varnish from the clearest white to the darkest black. Furnished in eight-ounce bottles.

For sale by all automobile dealers.

Price, 60 cents per 8-oz. bottle. Price, $3.00 per gallon.

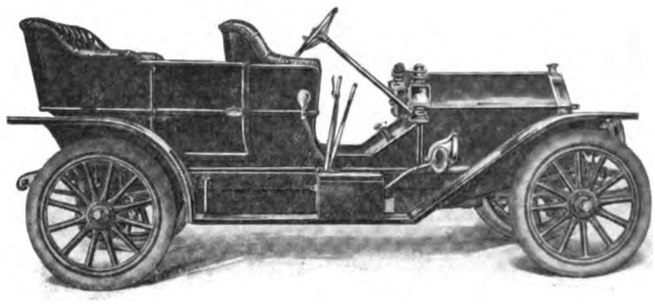
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The Inter-State

THERE is speed, comfort and safety in every INTER-STATE Car—the permanent, enduring car at a price but little higher than the price of temporary, make-shift cars.

The INTER-STATE motor is of the most efficient type—four-cylinder, 4¼x5—water cooled, with extra large water jacket spaces—cylinders cast in pairs—valves located in pockets on the right side of the motor and all mechanically operated from the same cam shaft. The motor is of 35-40 horsepower and drives the car at from 5 to 60 miles an hour on high speed. Speed enough for anybody.

INTER-STATE comfort is assured by 40-inch full elliptic scroll springs in the rear and 42-inch semi-elliptic springs in front, all of best steel—large whees, 34-inch artillery, fitted with 4-inch tires.

Extremely careful construction and perfect control give the INTER-STATE greatest safety—Frame is pressed from special stock cold rolled steel, thoroughly braced. Front axle, "I" beam drop forged in one piece—Rear Axle, reliable semi-floating type with large axle shafts—Four brakes 12 inches in diameter on rear hubs, internal expanding and external contracting, lined with camel's hair.

The highest standard of quality is maintained in every detail of the INTER-STATE and at $1,750 the INTER-STATE—with Eisemann Magneto—is the biggest value on the 1909 market.

AT THE CHICAGO SHOW—The full line of INTER-STATE Automobiles—Standard Touring Car, Demi-Tonneau, Double Rumble Roadster, Single Rumble Roadster, and Tourabout—will be exhibited at the Coliseum, Chicago, Feb. 6-13.

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You get a 5,000-mile written guarantee with Ajax Tires—a guarantee that assures you of at least 5,000 miles of service from each tire. One that enables you to figure out exactly your tire expense. One that reduces the upkeep cost on taxicabs to the lowest possible figure. Ajax Tires are economic tires because they last longer and do not have to be changed so often. In purchasing them you take nothing for granted, the guarantee does the talking.

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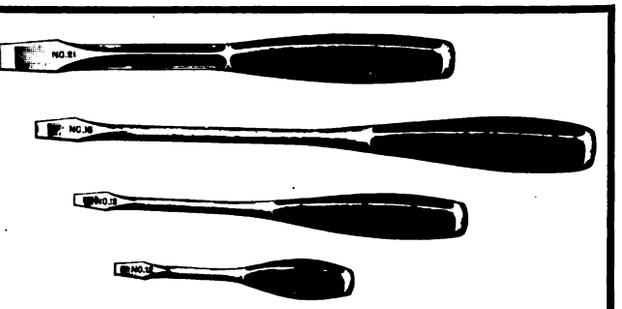
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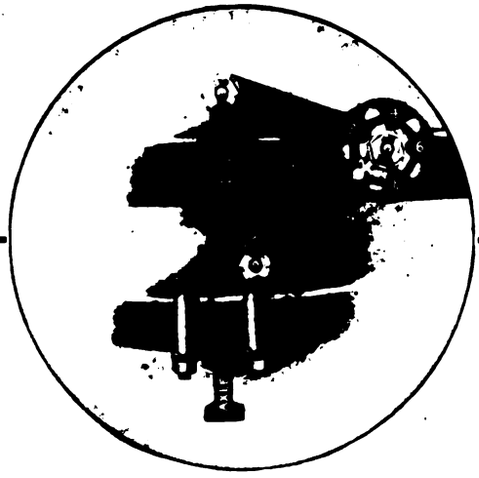
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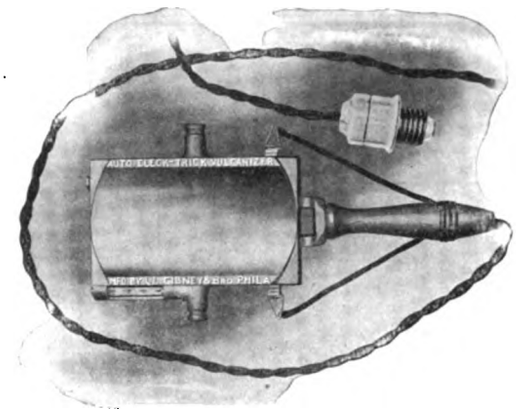
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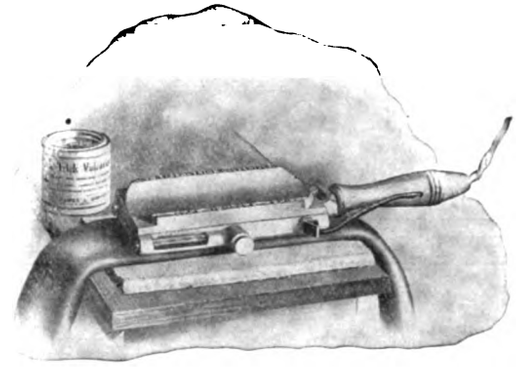
Auto Eleck-Trick Vulcanizer

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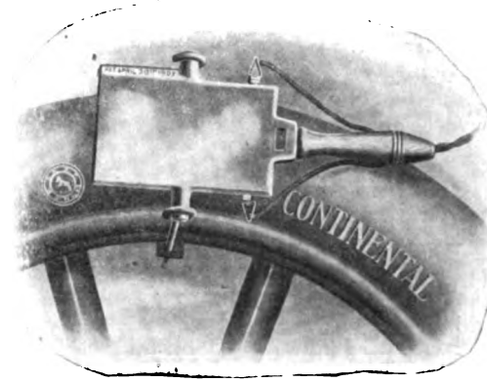
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Price complete with repair material $12.00 Special discounts to dealers

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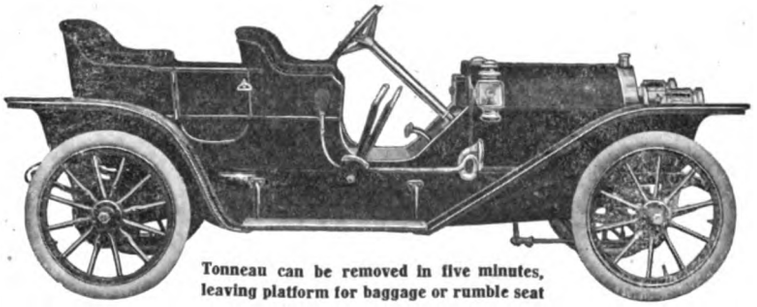
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Tonneau can be removed in five minutes, leaving platform for baggage or rumble seat

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5 to 50 Miles Per Hour on High Speed.

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Touring Car

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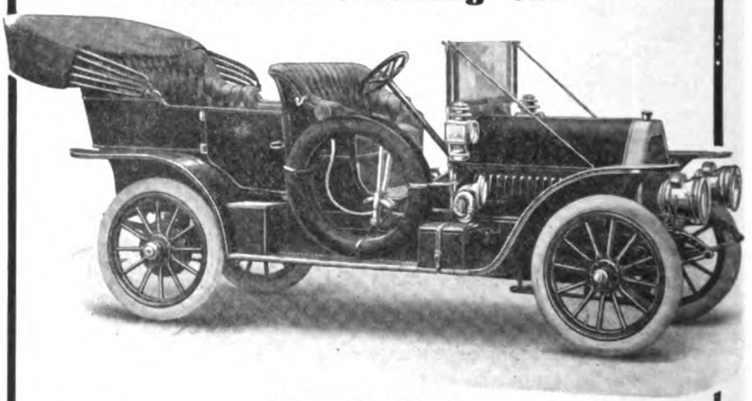
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The Non-Skidding Car



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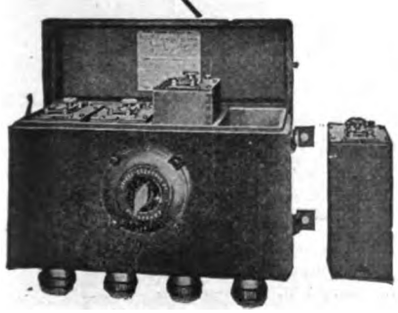
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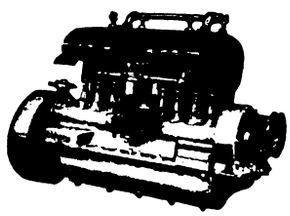
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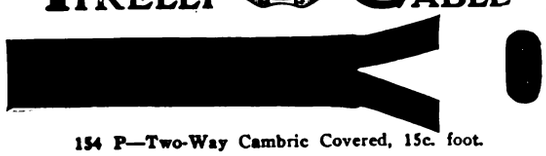
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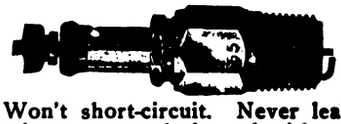
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"JUST THE NAME"
THE ACME MOTOR CAR CO.
Reading, Pa.

THOMAS SHOCK ABSORBERS
on your automobile mean more comfort, speed, safety, economy. Prove it at our expense. 30 days free trial.
BUFFALO SPECIALTY CO.,
340 Ellicott St. BUFFALO, N. Y.

A SUPERB LINE OF CARS—
THE JACKSON
"No Sand Too Deep—No Hill Too Steep."
2-Cylinder and 4-Cylinder
Runabouts, Roadsters, Touring Cars,
18 H. P., 24 H. P., 30 H. P. and 36 H. P.
Prices, $850, $950, $1,250 and $2,000.
JACKSON AUTOMOBILE CO., Jackson, Mich.



Steel Tires
Full of Air.
Tire expense cut in two.
Cannot Blow Out, Rim Cut or Puncture.
As Flexible as Rubber
Anti-Skid.
That part of a tire with a blowout or a rim cut in it will last longer than any other part if encircled by a few sections of steel.
Thousands in use.
Kimball Tire Case Co.
172 Broadway
Council Bluffs, Iowa

THE MOTOR WORLD PUBLISHING COMPANY
154 Nassau Street, New York

Enclosed find $2.00 for which enter my subscription to
The Motor World
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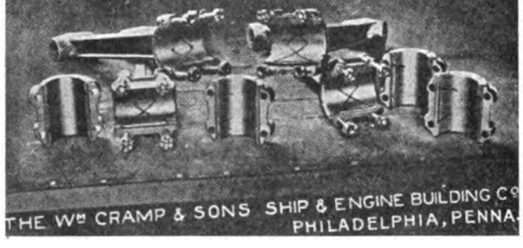
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Empire Tires
WEAR LONGEST

EMPIRE AUTOMOBILE TIRE COMPANY, Trenton, N. J.

BRANCHES—Newark, 264 Halsey St.; Detroit, 842 Woodward Ave.; Boston, 292 Devonshire St.; Chicago, 20 La Salle St., 1301 Michigan Ave.; New York, 73d St. & Broadway; 148 Chambers St. AGENCIES—Pittsburg, Consumers' Auto Supply Co.; Kansas City, Mo., Empire Tire & Rubber Co.; Atlanta, Ga., Dunham Rubber Co.; Cleveland, O., Motor Supply Agency Co.; Norfolk, Va., Wm. H. Grover; Denver, Denver Auto Goods Co.; Jacksonville, Fla., Savell Rubber Co.; Philadelphia, Penn Auto Supply Co.; Los Angeles, Cal., Pacific Elec. Wks.; Buffalo, N. Y., Empire Sales Co.; Minneapolis, Empire Tire & Rubber Co.; Savannah, Ga., Harris Tire Co.; New Orleans, La., H. A. Testard.

30,000 MILES WITHOUT ADJUSTMENT.
THESE PARSONS WHITE BRASS BEARINGS RAN THAT DISTANCE IN A PACKARD CAR. THEY ARE BACK IN THE CAR WITHOUT EVEN BEING SCRAPED
STILL RUNNING RUNNING STILL.



THE Wm CRAMP & SONS SHIP & ENGINE BUILDING Co
PHILADELPHIA, PENNA.

Cramp — Metals



For Automobile Bodies, Dashes, Guards, Bonnets, Battery Boxes, Drip Pans, Mufflers, Etc.

STRONG—DURABLE
SCALELESS—RUSTLESS
SMOOTH—PAINT ADHERES FIRMLY

A Metal That's A Time and Money Saver

THE STARK ROLLING MILL COMPANY, CANTON, OHIO

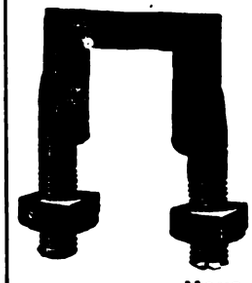
"Oldest Makers in America"

$3000

HAYNES

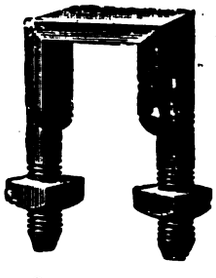
Kokomo, Ind.

FORGINGS for the AUTOMOBILE TRADE



Satisfaction Guaranteed

Thousands of our **Spring Clips** are now in use, having been supplied to the leading automobile manufacturers.



Have you secured our prices?

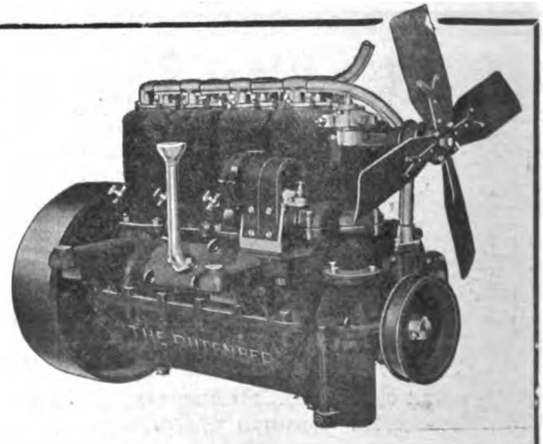
THE M. SEWARD SONS COMPANY, New Haven, Conn.

THIS AND TWO OTHER "FOURS" —AND A 50 HORSEPOWER "SIX"!

Proved and recognized successes, with a service record. Offered in 25 horsepower, 30-35 horsepower, 40 horsepower, and the 6-cylinder 50 horsepower. All fitted with oil pan base. Equipped for magneto attachment.

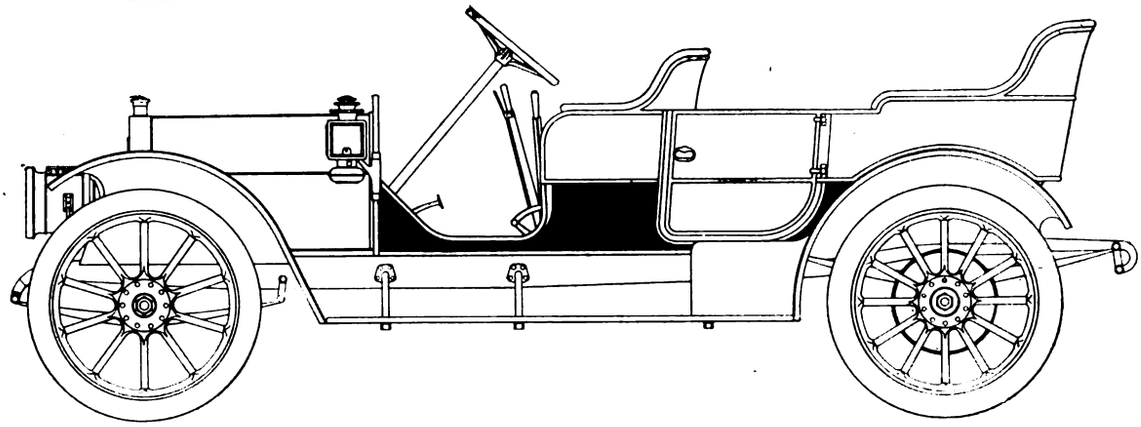
"Rutenber" Motors and Carburetors, Clutches and Fans

The Western Motor Co., Logansport, Ind.



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Stearns



GOOD design; a careful selection of scientifically tested materials; the exercise of greatest care in the manufacture of component parts; painstaking skill in their assembly, and a system of final inspection so comprehensive and complete that anything under 100 per cent. perfect cannot get through—that's Stearns production.

¶ Our new 15-30 is for those who would have a strictly high quality car at price and of power somewhat under the 30-60 horsepower model.

¶ Catalogued at 15-30 it develops close to 40 horsepower and, while of comparative light weight, is so staunch and sturdy that it will "stand up," as a good car should, even under unusual conditions of service.

¶ And, like our 30-60 (which is accepted as the standard of excellence in America), this new 15-30 model represents extreme high quality in every line and fiber.

¶ It is shaft drive, and designed to accommodate town and touring bodies.

¶ In our 30-60 horsepower model purchasers are given side chain or shaft drive option.

¶ Demonstration by appointment.

THE F. B. STEARNS CO., Cleveland, Ohio

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Real Quality Versus Hot Air



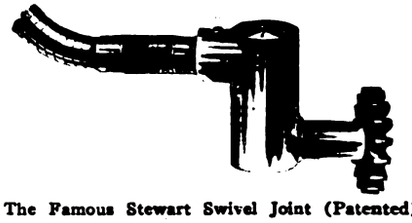
Main Office and Factory.

STEWART SPEEDOMETERS

owe their tremendous popularity to the fact that they are built to last and to give satisfaction.



Where the Famous Stewart Flexible Shaft is Made.



The Famous Stewart Swivel Joint (Patented)

Hundreds of Dealers

have cut out all other lines and are stocking Stewart Speedometers exclusively. No shaft trouble or other annoyances.

5 Year Absolute Guarantee

READ OUR LITERATURE. YOURS FOR THE ASKING.

Stewart & Clark Mfg. Co.

509 Diversey Boulevard, Chicago, Ill., U. S. A.



MODEL 4—Four-inch, 60-mile dial, enclosed season odometer and automatic resetting trip register and maximum speed hand, price **$40**

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Proclamation!

TO TRUCK OWNERS EVERYWHERE

THREE years ago when we applied the first Dual Side-Wire tire in America, we believed that we were introducing the newest and best thing obtainable in the shape of a MOTOR TIRE. And we were—the best thing up to that time. But times change; and we pride ourselves on trying to keep abreast of them. Careful study and observation of the solid tire situation abroad, have firmly convinced us that the side wire tire is now a back number and must graciously step aside for the newer and better product.

WE accordingly beg to announce that we are now manufacturing a NEW tire, which for service, security and resiliency, completely eclipses the side wire type. It is the

Gibney Wireless Motor Tire



CROSS SECTION—DUAL TYPE

THIS is not an untried experiment. These tires have been the standard of Continental Europe for the past five years. They have triumphed abroad; they will make good here.

WRITE FOR OUR PRICES AND OUR COST PER MILE GUARANTEE — IT WILL INTEREST YOU

JAMES L. GIBNEY AND BROTHER

PHILADELPHIA, PA., U. S. A.

AGENTS WANTED EVERYWHERE.

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This Tire Will Give You The Best Service

There may be other tires on the market that probably look from outside appearance to be as good as the G & J, but if you will get sections of the different tires and compare the quality of rubber, its toughness, and the manner in which it is embedded into the meshes of the fabric you will note there is a difference. After making this comparison and also noting carefully the general construction, you will not wonder why so many are specifying G & J Tires.

G&J Tire Co.

INDIANAPOLIS, IND.

Detroit, 256 Jefferson Ave.
Chicago, 1434 Michigan Ave.
New York, 10 W. Sixtieth St.
San Francisco, 414 Van Ness Ave.
Denver, 1541 Cleveland Place.
Buffalo, 912 Main St.
Philadelphia, 713 Broad St.
Los Angeles, 1010 S. Main St.
Minneapolis, 21 S. Second St.

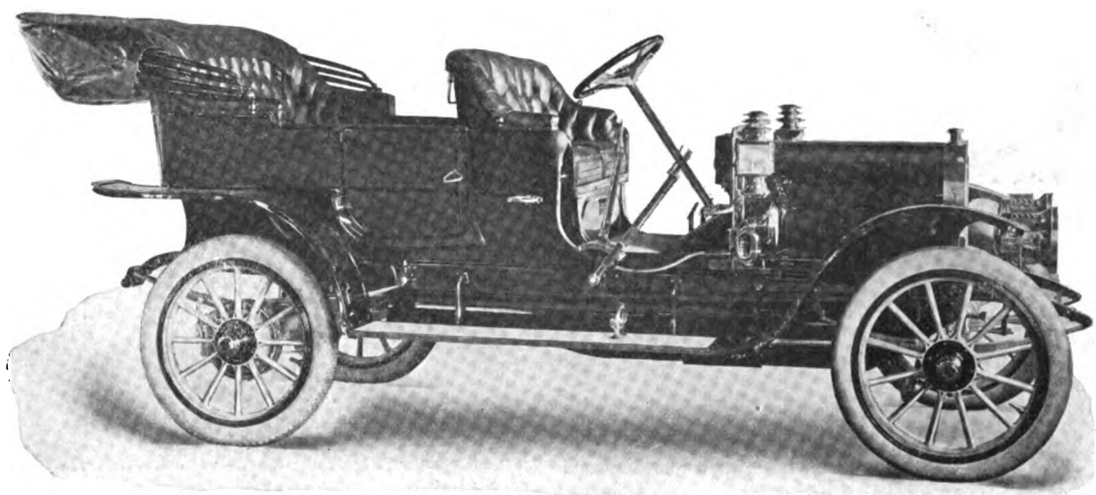
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St. Louis, 415 N. Fourth St.
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Kansas City, 1607 Grand Ave.
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THE SELDEN CAR

MADE BY

"The Father of Them All"



One Price, $2,000. F. O. B. Rochester.

TOURING OAR, ROADSTER, TOY TONNEAU

A genuinely good car cannot be made and sold for less than $2,000. By this we mean a car like the Selden, containing nothing but the best of materials, workmanship and finish. A car that the manufacturer can stand behind and guarantee for at least a year against any imperfections in workmanship or material.

We buy only the best materials, employ only skilled labor and pay particular attention to details and finish, thereby producing a strictly high-grade car at the lowest possible price.

The up-keep and maintenance of a medium-priced car like the Selden is within the reach of any man of moderate means and the value of the car does not depreciate like that of the lower priced cars. This is the point to be considered by every purchaser.

The Selden Car is a 4-cylinder 28-30 horsepower (developing 37 horsepower) five passenger Touring Car or three passenger Roadster, with 114-inch wheel base, 34-inch wheels, shaft drive, selective control, pressed steel frame, metal body, fully equipped.

Superb riding, roomy tonneau, luxurious upholstery, smooth running, great hill-climber, flexible and easily handled, economical in maintenance and up-keep, fine finish, stylish and attractive.

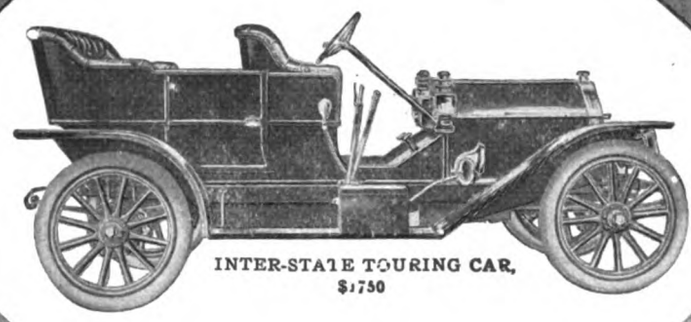
THE COMING OAR OF MODERATE PRICE

Catalog and Agency proposition upon request. Agencies wanted everywhere.

SELDEN MOTOR VEHICLE COMPANY

GEO. B. SELDEN, Pres. Members Association Licensed Automobile Manufacturers. ROCHESTER, N. Y.

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INTER-STATE TOURING CAR,
$1750



There is speed, comfort and safety in every INTER-STATE Car—the permanent, enduring car at a price but little higher than the price of temporary, make-shift cars.

The Inter-State

THE INTER-STATE motor is of the most **efficient type**—four-cylinder, 4¼ x 5—water cooled, **with extra** large water jacket spaces—cylinders cast **in pairs**—valves located in pockets on the right side of the motor and all mechanically operated from the **same cam shaft.** The motor is of 35-40 horsepower and drives the car at from 5 to 60 miles an hour on high gear. **Speed enough** for anybody.

INTER-STATE comfort is assured by **40-inch full elliptic** scroll springs in the rear and 42-inch semi-elliptic springs in front, all of best steel—large **wheels, 34-inch** artillery, fitted with 4-inch tires.

Extremely careful construction **and perfect control** give the INTER-STATE greatest safety. Frame is pressed from special stock cold rolled **steel, thoroughly braced.** Front axle, "I" beam drop forged in **one piece.** Rear axle, reliable semi-floating type **with large axle shafts.** Four brakes 12 inches in diameter on rear hubs, internal expanding and external contracting, lined **with camel's hair.**

The highest standard of quality is maintained **in every** detail of the INTER-STATE and at $1750 the INTER-STATE complete—with **Eisemann Magneto—is the biggest** value on the 1909 market.

At the Chicago Show—The full line of INTER-STATE Automobiles—Standard Touring Car Demi-Tonneau. Double Rumble Roadster, Single Rumble Roadster, **and** Tourabout—will be exhibited at the Coliseum, Chicago, Feb. 6-13.

Dealers and Agents.—Write for our proposition.

INTER-STATE AUTOMOBILE CO., 126 Willard St., Muncie, Ind.





INTER-STATE ROADSTER,
$1750

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You—Who Use Auto Tires

—You—who want the BEST, but are in doubt
—You—who are "from Missouri" and must be shown
—You—who prefer proofs to conversation

LISTEN:

Eight Hundred of the Thousand Taxicabs in New York City—and owned by several competing companies—have contracted for **Goodyear Tires to be used exclusively.**

Because, in actual **mileage shown** by evidence of the Taximeter, and by **minimum of trouble and repairs** as shown by the "trouble sheets"—Goodyear Tires cost **AWAY LESS PER MILE** than any one of the dozens of other makes tested in competition.

—And the same is true of the Taxicabs of all the large Eastern cities. **Eight out of ten** are using Goodyear Tires exclusively.

Now—the Climax

At the A. M. C. M. A. Show were 160 American cars, equipped with the pneumatic tires of 13 different makers.

If evenly distributed, each tire manufacturer would have equipped **8% of the cars.**

Now note this—

16% of these cars were equipped with Goodyear Tires—DOUBLE THE NORMAL PROPORTION.

Why?

Pure, unadulterated **GOODNESS** was responsible—not price—for Goodyear Tires cost a little more than most tires on the market—**for a reason.**

And Still Another Climax

You know all about Quick Detachable Rims—how they make fixing a puncture or changing tires an easy job—if the Rims themselves are **RIGHT** and **STAY SO.**

Goodyear Quick Detachable Rims are simplest, safest, sturdiest—the **only** rims that can be taken off and put back without **special tools.** We have proved this conclusively wherever we could get a motorist to listen.

Here's Further Proof

Goodyear Quick Detachable Rims were used on 51% of the American cars on which Detachable Rims of ANY KIND were used.

Which means that more **Goodyear** Quick Detachable Rims were used than **all other quick detachable rims COMBINED**

* * * *

It goes without saying that this Goodyear Landslide—on both Tires and Quick Detachable Rims—was not **ACCIDENTAL.**

There's an interesting story behind it all—of repair bills reduced—of tires making 15,000 to 20,000 miles each—of tire troubles of all kinds cut down, until those who insist on Goodyear equipment always start on a trip with confidence and return rejoicing.

It's a story you ought to hear in full.

Write for our helpful book, "How to Select an Auto-Tire," or call in at our nearest Branch Store. We'd like to tell the story to you by letter or in person. It will teach you how to save money and trouble.

THE GOODYEAR TIRE & RUBBER CO., Arthur Street, Akron, Ohio

BRANCHES AND AGENCIES—Boston, Mass., 261 Dartmouth St.; Cincinnati, Ohio, 317 E. 5th St.; Los Angeles, Cal., 932 S. Main St.; Philadelphia, Pa., Broad and Fairmont Ave.; New York City, 64th St. and Broadway; San Francisco, Cal., 506 Golden Gate Ave.; Chicago, Ill., 80-82 Michigan Ave.; Cleveland, Ohio, 2005 Euclid Ave.; Milwaukee, Wis., 188-192 8th St.; St. Louis, Mo., 3935-7 Olive St.; Buffalo, N. Y., 719 Main St.; Detroit, Mich., 251 Jefferson Ave.; Pittsburg, Pa., 5988 Centre Ave.; Omaha, Neb., 2010 Farnam St.; Washington, D. C., 1026 Connecticut Ave.; Atlanta, Ga., 90 N. Pryor St.; Louisville, Ky., 1049-51 Third St.; New Orleans, La., 706-16 Barrone St.; Memphis, Tenn., 181-5 Madison St.; Dallas, Tex., 111 N. Akard St.; Denver, Colo., 28 W. Colfax Ave.; Baltimore, Md., 991 Park Ave.; Kansas City, Mo., 16th and McGee Sts.; St. Joseph, Mo., 316-21 N. 2d St.; Indianapolis, Ind., 208-10 S. Illinois St.; Providence, R. I., 366 Fountain St.

GOODYEAR TIRES

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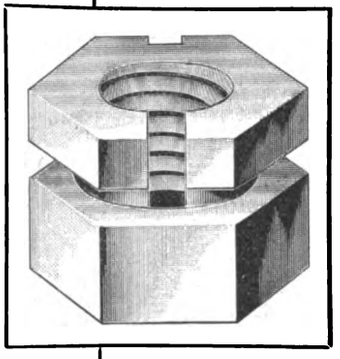
"Locking the door after the pony is stolen"

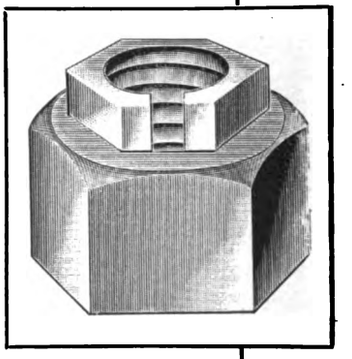
is a good deal like postponing the use of

Columbia Lock Nuts

Now

for it's only a postponement at best. Why not take a double-twist on the forelock of old Father Time and incorporate the use of Columbia Lock Nuts in your construction BEFORE you have occasion for regrets? Columbia Lock Nuts are in general use and are regarded as a necessity by some of the biggest railroad systems in the country. They ought to be a double necessity on automobiles. They are already used by many prominent makers. They should be used on every automobile everywhere.





¶ Columbia Lock Nuts simply cannot work loose. Vibration, even the constant vibration of solid tires, cannot affect or loosen them. They are automobile insurance of the very best kind and their cost is not a factor. Let us prove our case.

COLUMBIA NUT & BOLT COMPANY

Bridgeport, Connecticut

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THE
U. S. BRONZE CO.
CLEVELAND
OHIO

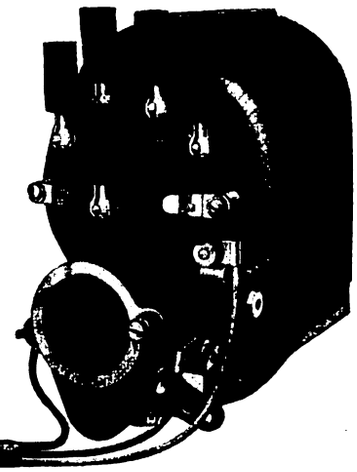
ALUMINUM
CASTINGS

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Why The Remy Magneto Is The Highest Grade Ignition System For American Motor Cars



American ingenuity has so simplified the design of ignition Magnetos that the highest grade product obtainable, particularly for American cars, is the American product.

The Remy 1909 High Tension Magneto easily proves this claim. Compare the Remy with any foreign product.

It has larger margins in its construction, electrically and mechanically, and does not have any delicate or sensitively adjusted parts.

It provides for a double ignition system, consisting of both Magneto and battery, in the simplest possible way, not requiring additional wiring of any kind, as do all imported Magnetos where double ignition is used.

What quality for satisfactory results has the imported Magneto that the Remy has not?

On the other hand, the Remy alone has the broad margin so necessary to ignition equipment of a car used in America, for neglect, abuse, oil, water, dirt, etc.

The Remy gives steady, dependable service, where the best of the delicately constructed, sensitively adjusted foreign Magnetos fail.

Simplicity is not only desirable—it is essential in ignition for use on American roads.

Magnetos from over the sea may give service when installed at the foreign factory—when constantly cared for by specially trained mechanicians, thoroughly familiar with their complications—and when used on the fine highways of Europe.

But the big majority of motorists in America cannot have the imported Magneto under any such favorable circumstances.

Remy

See It at The Chicago Show



The American motorist needs an ignition system that he or his chauffeur can understand—a system that doesn't get out of order—one that insures positive firing under any and all conditions—in the muddy country road—the rugged hill climb—the long tour far away from the garage or the protecting care of the expert.

THAT'S THE REMY.

Not a detail is slighted in Remy construction to make it the highest grade and most dependable Magneto equipment possible.

Yet the Remy can be sold for a lower price than foreign Magnetos.

This is due in part to the heavy duty on the imported Magneto. When you buy an imported Magneto, you pay the duty. Our lower price is also due to the better manufacturing methods in America. The highest class of work, and the more rapid work is done here.

More Remy Magnetos than all others—foreign and American combined—are in actual use on American cars.

More Remy Magnetos have been sold for this season than all others combined.

To date more than 20,000 Remy Magnetos have been contracted for on minimum specified deliveries for 1909 cars.

We are the oldest builders of High Tension Magnetos in the world.

The Remy Magnetos are used on the highest priced American cars, and also on the popular small runabouts.

There has never been a failure on the part of the Remy Magneto in a single racing event, hill climbing contest or endurance contest of any kind, to our knowledge.

In the recent Savannah Automobile Races the Remy Magneto took the place of imported Magnetos which had broken down, and gave perfect results.

Write us for illustration and full description of our new High Tension Magneto. We build Magnetos in such large quantities that we can make you very attractive prices.

ADDRESS DEPARTMENT 90

REMY ELECTRIC COMPANY, Anderson, Ind.

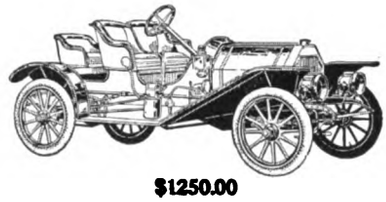
We have opened a branch office at Thoroughfare Bldg., Broadway and 57th St., New York City.

Chicago Coliseum Show, Gallery Space No. 65.

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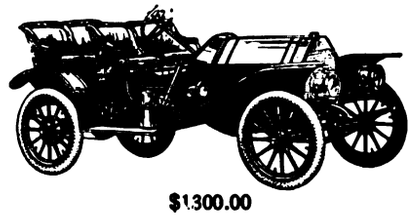
THE Overland LINE

MODEL 30.
Single Rumble Roadster, 4-cylinder, 30 H. P.



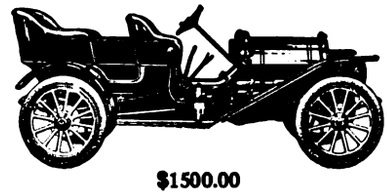
$1250.00

MODEL 30.
Double Bucket Roadster, 4-cylinder, 30 H. P.



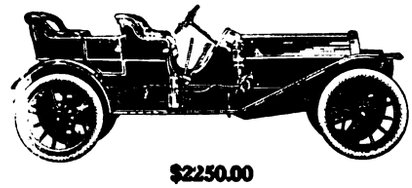
$1300.00

MODEL 32
Five Passenger Tonneau, 4-cylinder, 30 H. P.



$1500.00

WILLYS-SIX.
Four Passenger Toy Tonneau, 6-cylinder, 45 H. P.



$2250.00

MODEL 30 COUPE.
Price includes regular Single Rumble Roadster Body, 4-cylinder, 30 H. P.



$1650.00

WE shall Exhibit all these Models at the Chicago Show
SPACE TWO
THE ARMORY

OVERLAND AUTOMOBILE COMPANY
INDIANAPOLIS, IND.

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THE MEASURE OF TIRE QUALITY

is not alone length of service, but also kind of service.

A tire that has to be coaxed by frequent visits to a repair shop is an inferior tire, even tho it may last a total of three, five or seven thousand miles.

MORGAN & WRIGHT TIRES

are long-lived tires, but the length of service is secured in the making of the tires, and and not by frequent doctoring by the users. They stand up as only tires can that are made as Morgan & Wright tires are. And our rigid system of inspection protects you from any and all possible defects.

MORGAN & WRIGHT, Detroit

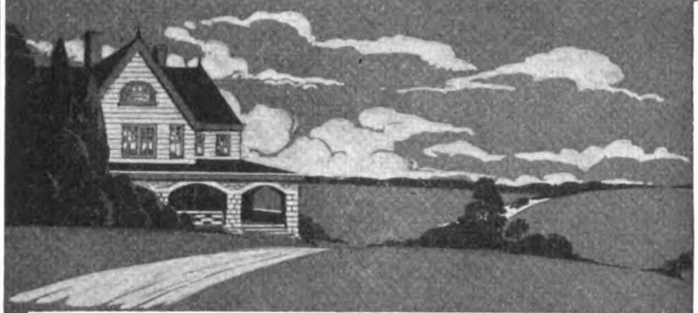
Branches, Agencies or Dealers Everywhere.

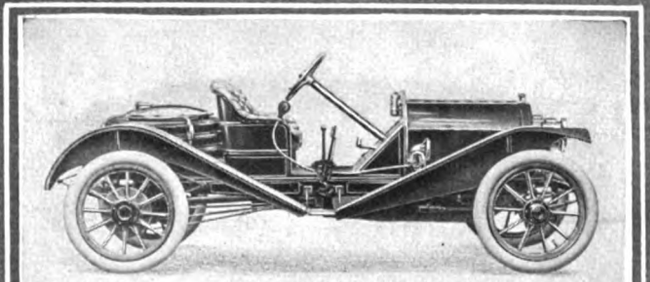
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THE MARMON

"A Mechanical Masterpiece"







The "Thirty-Two" Roadster, $2400

Proven, Not Prophesied

The sterling merit of Marmon construction, the durability of Marmon cars, and the reliability of Marmon service are well known throughout American motordom.

With these vital attributes carefully built in—not left to chance in mere assembling—the Marmon "Thirty-two" presents a notable value to the thoughtful buyer. Light, powerful, and embodying all the known best things in design and equipment, it invites the most critical comparison with anything on wheels at $3,500 or less.

Motor, 4 Cyl. 4½x4½. Water-cooled. 32-40 H. P. Three-point support. Ignition, Bosch H. T. Magneto, dual system. Lubrication, Marmon system of automatic force feed through hollow crankshaft. Drive, straight line shaft. Selective transmission and rear axle one compact unit, very accessible. Large brakes, effective and very durable. Materials, absolutely the best of everything, including Krupp and Chrome Nickel Steels. Hess-Bright imported ball bearings. Tires, Q. D.,34x4. Wheel base, 112 in. Weight, 2100 lbs. Equipment, complete and high-class. Bodies, Sheet Metal. Touring Car seats five; Suburban (detachable tonneau) seats four; Roadster seats two. Also Coupe or Limousine Town Car.

Marmon "Fifty" (Seven Passengers), $3,750.

Nordyke & Marmon Co. (Estab. 1851) Indianapolis, Ind.

Standard Mfrs. A. M. C. M. A.

At Chicago Show, February 6-13.

The Easiest Riding Car In The World

IT WILL PAY YOU TO INVESTIGATE

THE 1909 National

THE LINE IS BETTER AND MORE COMPLETE THAN EVER

Model 9-35, 4-cyl., 4¾ x 4¾,	**5-passenger Touring Car . . . . .**	**$2,750**
Model 9-40, 4-cyl., 5 x 5,	**5-passenger Touring Car . . . . .**	**$3,700**
Model 9-50, 6-cyl., 4½ x 4¾,	**7-passenger Touring Car . . . . .**	**$4,200**
Model 9-60, 6-cyl., 5 x 5,	**7-passenger Touring Car . . . . .**	**$5,000**

Each National has the well-known National Ball-bearing Motor with new crank case oiler, two ignition systems (Bosch Magneto and Storage Battery) and all other tried and proven features of high grade modern motor car construction. Any of the above models can be furnished with Baby Tonneau body or as a Roadster.

Write for distributors terms and full particulars.

NATIONAL MOTOR VEHICLE CO., 1007 East Twenty-Second St. INDIANAPOLIS, IND.

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Long Life is what every motorist wants in his car

If it is a

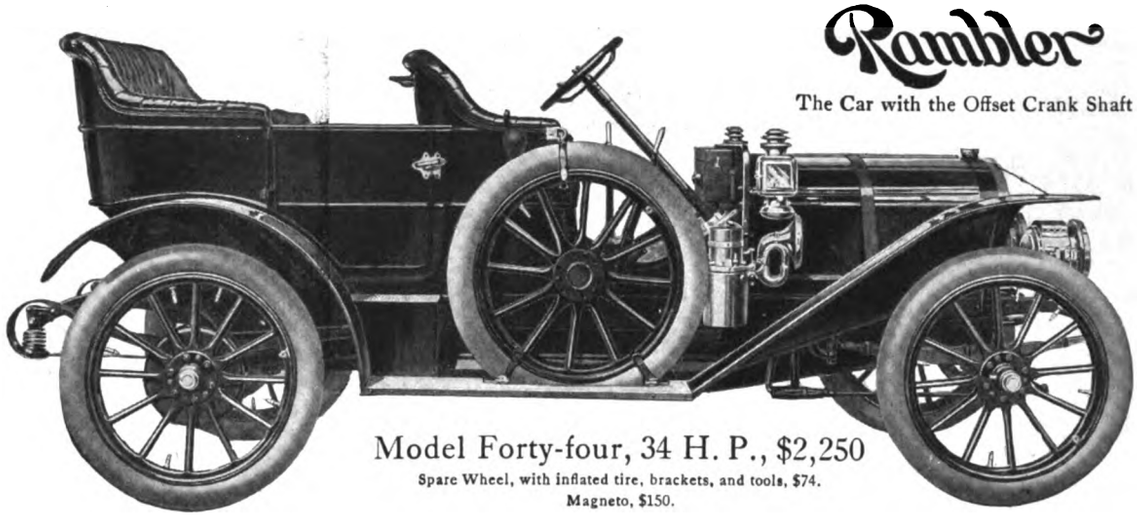
CORBIN

imported ball bearings, used wherever practical, assure him of this result. Ask owners of Corbin Cars how they stand up in every day use or write for our testimonial booklet.

THE CORBIN MOTOR VEHICLE CORPORATION, New Britain, Conn.

Members Association Licensed Automobile Manufacturers.

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Rambler

The Car with the Offset Crank Shaft

Model Forty-four, 34 H. P., $2,250

Spare Wheel, with inflated tire, brackets, and tools, $74.
Magneto, $150.

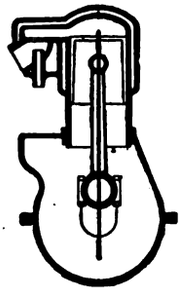
Why the Offset Crank-Shaft?

Notice a man about to mount a bicycle. He always adjusts the pedal in that position where it will receive to best advantage his full weight on the first downward stroke. This position for the pedal is just slightly forward of the center of the crank-shaft of the bicycle. If he mounted when the pedal was directly over the center of the crank-shaft, his weight would fall directly on the bearings and the first downward stroke would be retarded and therefore weak.

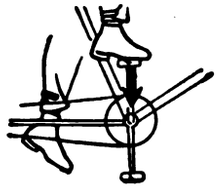
Now imagine the man's leg as the piston of an automobile engine, the pedal of the bicycle as the crank-pin, and the crank-shaft of the bicycle as the crank-shaft of the engine. In the ordinary engine the crank-pin and piston (the pedal and the man's leg) are directly over the dead center, and until the crank passes the turning point all effort is wasted. Thus when the explosion occurs the greatest force falls upon the bearings.

In the Rambler engine, at the instant the explosion occurs above the piston the crank-pin has moved past the dead center; the crank-shaft is in a position to receive the full pressure and turns without friction. No shock falls on the bearings; there is no side thrust, and wear on the cylinder walls is thus saved.

Because of this feature Rambler Model Forty-four can be operated smoothly and steadily at three miles an hour on high gear



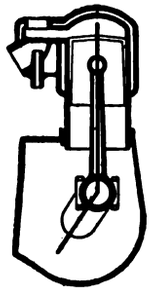
Ordinary Engine. Position of piston at explosion center.



Corresponds to position of piston in ordinary engine at explosion center.



Corresponds to position of piston in Rambler engine at explosion center.



Rambler Offset Crank-Shaft. Position of piston at explosion center.

Seven-passenger model, 45 horsepower, with offset crank-shaft, $2,500. Other models $1,150 to $2,500. A new Rambler catalog has just been issued. It describes and illustrates all distinctive features of new Ramblers--the offset crank-shaft, Spare Wheel, straight-line drive, etc. A copy on request.

THE CAR OF STEADY SERVICE

Thomas B. Jeffery & Company

Main Office and Factory, Kenosha, Wis.

Branches and Distributing Agencies: Chicago, Milwaukee, New York, Cleveland, Boston, San Francisco.

The new Rambler Models will be shown and demonstrated at the Coliseum, Space B-2, and at our Chicago Branch, 1462-1464 Michigan Ave., during the Chicago Automobile Show. Telephone Calumet 3000, give your address, and we will call for you.

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, February 4, 1909. No. 19

RAINIER PLANS FOR NEW START

Buys the Company's Name and Properties at Receivers' Auction—Will Resume Production at Early Date.

John T. Rainier, through his attorney, George C. Comstock, has bought the Rainier Motor Car Co., of New York City and Saginaw, Mich., from the receivers, into whose hands the concern was delivered last November as the result of a petition in bankruptcy. After several unsuccessful efforts on the part of the receivers to obtain what they considered a proper price, the assets of the company were put up at auction sale in New York City on the 26th ult., and Comstock, acting for Rainier and his associates, bid $20,000 for the property in Saginaw not covered by mortgage, the company's equity in the mortgaged property, and all the property in New York, including the firm name and the good will.

"We bought the company as a going concern," explained Rainier, when asked by the Motor World as to the purchase, "and we propose to act promptly and take advantage of the spring trade. It is the intention to have the factory at Saginaw operating as soon as possible and to have the new Rainier models out and on the market at the earliest possible date."

Steps have been taken to arrange an adjustment of all the various difficulties attending the fulfilling of the terms of the bond mortgage on the plant, the claims of the various creditors and the conditions imposed by the merchants' association in Saginaw when the site for the plant was given over to the company originally. It is probable that a slight change in the corporate title may be made necessary when the complete reorganization is effected, but the established value of the Rainier name is to be carefully conserved.

At the factory all the necessary parts for 35 cars are reported to be immediately available, while a large stock of extra parts will assist in the work of prompt production when actual manufacturing is resumed. The Saginaw interests give evidence of a desire to co-operate in the bringing of the plant into activity again and when the necessary court approval and orders have been obtained, work will commence in earnest.

Detroit Company to Move to Elwood.

Through the efforts of a business men's organization in Elwood, Ind., known as the factory fund committee, the Detroit Auto Truck Co., of Detroit, Mich., will move its plant to Elwood and will occupy the west building of the Pittsburg Plate Glass Co., which was bought by the business men's association for $15,000. By the terms of the agreement the plant must be put in productive operation by the first of May.

Seeks to Bar Recharging Gas Tanks.

Action has been brought against George L. Wilkinson, of Manchester, and Noyes B. A. Carrier, of East Hampton, Conn., by the Prest-O-Lite Co., of Indianapolis, Ind., seeking to enjoin them from recharging the company's tanks with acetylene gas. The defendants have been ordered to appear before Judge James P. Platt in the circuit court of the United States, on Wednesday, February 16, at Hartford.

Stearns to Manage Lockport Factory.

W. F. Stearns, who has had wide experience in the tire making field, has become identified with the Lockport Rubber Works, of Lockport, N. Y., in a financial way, and has taken the position of factory manager. He will have full charge of the manufacturing of the Lockport tire and other products.

Brown-Lipe to Add Complete Axles.

Complete axles are to be added to the products of the Brown-Lipe Gear Co., of Syracuse, N. Y., according to information which has recently leaked out. The company is one of the pioneers in the manufacture of differentials, change gear mechanisms, steering outfits and the like.

RECRUITS FROM CARRIAGE TRADE

More Big Makers of Horse Drawn Vehicles Preparing to Adopt the Motor—Plans for Experimental Outputs.

Like jumping sheep flocking to a new pasture, the makers of horse drawn buggies and carriages are hastening to take up the manufacture of motor vehicles, and the firms in the automobile trade who are able to supply motors and parts are being confronted with lines of customers representing in many cases some of the most prominent buggy and carriage concerns in the country. Among the prominent firms of this class that are making experiments with modest preliminary outputs in preparation for larger subsequent production, are the Fuller Buggy Co., of Jackson, Mich., which is planning to turn out 500 machines of the buggy type; the Jackson Buggy Co., of the same city, which is buying parts and materials for 25 cars; the Jewel Carriage Co., of Carthage, O., which has ordered 125 sets of parts for a four cylinder car; and the W. A. Patterson Co., one of the big companies in Flint, Mich., which is getting ready to manufacture motor buggies on a large scale.

Quotations on automobile material are also being asked for by the Flint Wagon Works, Flint, Mich., and by such concerns as the Richmond Mfg. Co., which was formerly the Richmond-Indiana Mfg. Co., of Richmond, Ind.; by the Parry Mfg. Co., Indianapolis, Ind., which is now making automobile wheels; and by the Criterion Motor Car Co., of Kent, O., each representing interests identified with the manufacture of horse drawn vehicles.

All of these concerns are recent converts, to be added to the already extensive list of buggy and carriage makers who have been in the field of motor vehicle manufacture for some time. Supplementing these later important recruits, the smaller experimenters, including blacksmiths and wagon builders,

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may be numbered by the hundreds. According to the purveyors of automobile parts, the rush of business from the buggy, wagon and carriage trade indicates a movement almost amounting to an invasion or a "landslide," though highly competitive and not at all concerted so far as its individual components are involved.

Presenting the carriage makers' view of the situation, R. D. Nibert, secretary of the Carriage Makers' Club of Cincinnati, told a reporter that according to the reports received by the club, the automobile has made important inroads into the carriage and buggy industry in the East, especially in the case of some of the factories that have been turning out the higher priced, fancy carriages, although the Western market for light, medium priced vehicles had not as yet been seriously affected.

"But I understand," Nibert continued, "that a number of carriage makers are contemplating the reconstruction of their factories into plants for the manufacture of low-priced automobiles. We rather expect the automobile industry to develop and grow along the lines of the bicycle industry. At the outset bicycles were very costly, but in time, as they became more and more popular and the demand for them grew and the factories for their manufacture multiplied, they became so cheap that everybody could have one. The automobile industry is likely to undergo the same stages of evolution. In contemplation of that sort of development, the carriage makers are on the alert, and their plans will unfold logically and reasonably."

France Raises Duty on Carbide.

Because the Bullier patent on the manufacture of calcium carbide expires in France on February 9, the French interests have obtained a raising of the import duty for that country. Hereafter instead of 5 per cent ad valorem, the duty on calcium carbide imported into France will be 6 and 9 francs per 100 kilos. ($1.16 and $1.74 per 220 pounds) under the general and minimum tariffs, respectively. Carbide imports from the United States are subject to duty under the general tariff.

Franklin Stockholders Elect.

At the annual stockholders' meeting of the H. H. Franklin Mfg. Co., Syracuse, N. Y., held January 27, H. H. Franklin was re-elected president and Giles H. Stillwell vice-president, while F. A. Barton was chosen secretary and treasurer. The following were re-elected directors: H. H. Franklin, S. H. Dann John Wilkinson, G. H. Stillwell, A. T. Brown, W. C. Lipe, and F. A. Barton.

Creet to be a Maxwell Manager

R. A. Creet has been appointed manager of the new branch which the Maxwell-Briscoe Motor Co. is to establish in Chicago. The branch will take over the business at present held by a local agent.

IMPORTS STEADILY SLUMPING

Remaining Strength Due to Introduction of Taximeter Cabs—Surprises of the Year's Figures.

Rapid decline in the value of the imports of foreign cars into the United States is shown by the returns for the year ending with December, 1908, and the extent of the slump is most apparent in the comparison of the year's total with that of 1906, the comparison showing a falling off amounting to almost $2,000,000. Oddly enough, the number of foreign cars imported during the past year was greater than in either 1906 or 1907, but so large a proportion of the more recent importations were low priced vehicles for commercial purposes, as to account for the phenomenon.

It is shown that 1,347 cars were brought in during the twelve months of 1908, as against 1,093 in 1907, and 1,295 during 1906. In 1906 the total imports of cars amounted to $4,416,048 and of parts $494,160. The returns for 1907 indicated for cars a total of $3,157,168 and of parts $650,403, while in 1908 the return is only $2,558,819 in cars and $650,563 in parts.

As might be expected, France shows the largest shipments to the United States, followed by Italy. Contrary to general impression, however, the United Kingdom sent more cars and more value in cars to the United States than did Germany at any time during the past three years. These four divisions were the chief sources of the imports, the others being grouped in the official figures as "Other countries."

The record reveals France as having sent over cars in 1906 to the number of 942, having a value of $3,225,507; in 1907 the cars numbered 835, valued at $2,317,843; and in 1908 the cars reached 947 in number but were valued at only $1,708,474.

Italy alone shows a gain in both number and value for the three years. In 1906 its cars brought in numbered 138, valued at $405,587; in 1907 the cars numbered 91, valued at $259,052; and in 1908 the number of cars was 271, valued at $524,653.

The United Kingdom's showing for the three years was 97 cars in 1906, valued at $349,984; in 1907, cars to the number of 91, valued at $298,629; and in 1908 only 77 cars, valued at $167,412. Germany's contribution in 1906 was 74 cars, $318,001; in 1907, cars to the number of 53, valued at $210,756; and but 32 cars in 1908, valued at $99,394. The group known as "Other countries" sent 44 cars, 23 cars and 20 cars in the three years, respectively, of which the values were $116,969 in 1906; $70,888 in 1907; and $58,886 in 1908.

The changed character of the import business is due to the fact that the importation of pleasure cars has dwindled mightily, while the taximeter cab importation has increased, owing to the activities of the operating companies in New York City and elsewhere. The record of the port of New York gives an illuminating analysis of the character of the importations of the year.

Following is a statement of cars imported into New York during the calendar year ending Dec 31, 1908:

	—By Individuals—		—By Dealers—		
Make—	Old. 2d imp.	New. In use.	Trucks.	New.	Total.
Fiat	15	6	..	157	181
Panhard	20	14	3	35	72
Renault	25	39	..	134	266
Mercedes	40	25	..	29	94
Isotta-Fras.	2	1	..	37	40
Lancia	..	..	..	27	27
Itala	3	2	..	17	25
Hotchkiss	2	..	..	20	22
De Dietrich	5	4	..	11	20
S. P. O. (Mass.)	1	1	7	2	11
Benz	..	..	..	6	10
Del. Bel.	4	3	..	8	17
Zust	..	1	..	8	9
Bianchi	1	2	..	6	9
C. G. V.	7	4	..	4	18
Rochet	6	1	.	4	11
Clement	..	2	..	4	7
Delahaye	..	..	..	3	65
Bollee	..	2	..	3	5
De Dion	..	1	10	3	15
Berliet	1	4	..	2	7
Maja	..	..	..	2	2
Darracq	1	4	..	1	418
Martini	1	1	..	1	3
Westinghouse	4	2	..	1	7
Eng. Daimler	..	2	..	..	2
Mors	1	2	..	1	4
Humber	1	1	..	1	3
Gob. Bril.	..	1	..	..	1
Napier	2	3	..	..	5
Rolls Royce	..	1	..	..	1
Cottin Des	..	1	..	..	1
Motobloc	..	..	..	..	1
Che. Walker	..	2	..	..	2
Saurer	..	..	5	..	5
S. P. A.	..	..	1	..	1
Aries	..	1	..	..	2
Argyll	..	..	..	..	1
Royal	..	1	..	..	1
Peugeot	..	2	..	..	2
Picard Pictet	..	2	..	..	2
Braisier	1	2	..	..	3
Miscellaneous	8	4	..	6	18
Total	151	144	19	533	1,416

For the calendar year of 1908 there entered at the port of New York 1,416 foreign automobiles, of which number:

Pleasure vehicles to dealers	533
Taxicabs	553
Trucks and buses	19
Cars in bond	16
New cars in use imported by individuals	144
Old and second-hand cars reimported.	151
Total	1,416

Imported in bond—Fiat, 3; Renault, 4; Itala, 3; Benz, 4; Del. Bel., 1; Motobloc, 1; total, 16.

Taxicabs imported—Renault, 64; Del. Bel., 1; C. G. V., 3; Clement, 1; Delahaye, 62; De Dion, 1; Darracq, 412; Aries, 1; Argyll, 1; total, 553.

Flames Consume the Comet.

The Comet Motor Co., of Montreal, on January 28 suffered a fire loss of $130,000. The conflagration destroyed the company's factory and warehouse together with forty completed automobiles.

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YEAR'S RECORD OF EXPORT TRADE

Almost $5,000,000 in American Cars and Parts Shipped to Foreign Countries—Europe Buys Freely.

With the completion of the year 1908, a view of the export activities for the twelve months is presented which shows shipments of American cars to foreign countries amounting to $4,346,293, which, while not quite as great as during 1907, is in excess of the volume of this business done in 1906. The same holds true of the parts exported, these amounting to $602,301, making with cars, a total exportation to the value of $4,948,594.

Biggest customer of all is the United Kingdom, whose purchases of American cars during the twelve months of 1908 came to $1,728,704, making a favorable comparison with the $1,738,488 in 1907 and the $1,138,264 in 1906. British North America is second on the list, with $1,115,540, as compared with $1,167,355 in 1907, and $878,885 in 1906.

France bought American cars to the value of $560,449 during the year just passed, although this total was not quite as great as during 1907, when the amount was $596,450. It is much larger, however, than the $336,273 of 1906.

Mexico continues as a good customer, being fourth, in spite of the fact that its buying has fallen off over 50 per cent. since 1906. Germany and Italy are not at all self-sufficient, so far as automobile production is concerned and are steady purchasers of the American product. Three of the fourteen divisions show gains for the year, these being Other Asia and Oceanic, Africa, and Other Countries.

Together with France and British North America, these three divisions also represent those who have made a gain for the month of December, the remaining divisions recording various losses. The record in detail follows:

	1907	1908	1906	1907	1908
Automobiles and parts of—					
Automobiles and parts of	.....	.....	*$2,356,110	.....	.....
†Automobiles	$259,341	$229,817	‡1,792,398	$5,120,963	$4,346,293
Parts of	42,091	34,354	260,768	636,009	602,301
Exported to—					
United Kingdom	66,808	66,730	1,138,264	1,738,488	1,728,704
France	8,564	12,166	336,273	596,450	560,449
Germany	5,064	175	132,214	175,250	158,979
Italy	12,500	11,000	251,636	255,160	248,519
Other Europe	15,921	12,994	214,119	288,211	217,172
British North America	21,791	40,174	878,885	1,167,355	1,115,540
Mexico	56,691	29,208	717,523	629,807	312,603
West Indies and Bermuda	44,248	38,492	240,989	293,885	198,078
South America	23,533	19,041	166,814	244,466	126,285
British East Indies	30	1,034	34,111	35,586	25,111
British Australasia	38,289	11,712	192,668	213,645	87,543
Other Asia and Oceania	7,847	11,477	79,542	99,009	129,968
Africa	146	7,402	16,100	8,194	14,993
Other countries	.....	2,566	10,048	11,466	24,650
Total	$301,432	$264,171	$4,409,186	$5,756,972	$4,948,594

* Figures are for six months, January to June, 1906. † Number not stated prior to July 1, 1906. ‡ Figures are for July to December, 1906, inclusive.

Issues Handbook of Licensed Cars.

Illustrating and describing the principal models of its members, the sixth annual edition of the handbook of gasolene automobiles issued by the Association of Licensed Automobile Manufacturers is now ready for trade and public distribution. An innovation is a page giving in tabular form the horsepower ratings of the various sized motors according to the A. L. A. M. formula. The handbook is sent from the Association's offices, No. 7 East Forty-second street, New York City on receipt of 6 cents to defray postage.

Overland Opening Western Branches.

With an eye to the rapidly increasing Southwestern trade, the Overland Automobile Co., of Indianapolis, Ind., has opened a distribution branch for Overland cars at Dallas, Tex., to be known as the Overland Automobile Sales Co. It will be in charge of Manager Funk, formerly of the Oklahoma Motor Car Co., Oklahoma City, Okla. The company also is operating a direct factory branch at 1413 Michigan avenue, Chicago under the management of Charles Price, assisted by F. E. Wilson.

Announces a Change of Lines.

The American Distributing Co., of Cleveland, O., has discontinued the sale of the product of the Long-Arm System Co., and will shortly announce a new connection. The sale of the Imperial Wheel Co.'s product has likewise been discontinued, the American company now having control of the output of the Hayes Wheel Co., of Jackson, Mich.

Owen Joins the Fickling Staff.

Wally Owen, one of the best known automobile men in the Metropolis, has joined the staff of Fickling & Co., 304-6 West Forty-ninth street, New York City. He will have charge of the second hand department which is to be opened as a clearing house for various automabile firms in New York.

NEW JERSEY DECLARES THEM DEAD

State Extinguishes the Corporate Life of Many Abandoned Automobile Projects—List of the Defunct.

Once a year the State of New Jersey wipes out a number of corporations which have been created under its laws, but which, by their failure to pay up their annual state taxes for the two years preceding, give evidence of having given up the ghost. The crop of "dead ones" with unpaid taxes for 1906, this year includes many concerns at one time either in or of the automobile trade. Among those to be repealed and concerning which all powers conferred by law have been declared inoperative and void are the following: Adams Storage Battery Co., American Darracq Automobile Co., Austin Automobile Co., Auto Leather Co., Beacon Automobile Co., Breeze Motor Mfg. Co., Century Auto Power Co., Commercial Electric Vehicle Co., Commercial Motor Co., Commercial Motor Vehicle Co., Fischer Motor Vehicle Co., Foye Hub-Motor and Automobile Co., Hub Motor Co., Hyne Motor Co., Inter-City Automobile Speed-Way Co., Manhattan Motor and Launch Co., Motor Construction Co., Moto Tractor Company of America, Prescott Automobile Mfg. Co., Reo Automobile Co., Standard Storage Battery Co., United Motor and Vehicle Co.; United Motor Car Co.

Bartholomew Elects Its Officers.

The annual election of the Bartholomew Co., Peoria, Ill., was held on January 20. It resulted in the re-election of the officers and the board of directors complete. The officers are are follows. J. B. Bartholomew, president; A. Y. Bartholomew, vice-president; O. Y. Bartholomew, treasurer; G. G. Luthy, secretary.

New Tires to Emanate from Newark.

The United and Globe Rubber Manufacturing Co., of Newark, N. J., has entered the field of automobile tire manufacture. Experimental tires of various types have been tried out for some time, and the concern will now begin actual market production.

Stearns and Leahy are Advanced.

E. Roger Stearns, manager of the Buffalo branch of the Ford Motor Co., has been appointed general representative of the company, with headquarters at Detroit. He is succeeded at Buffalo by M. R. Leahy, assistant New York City manager.

Houpt Has a Broadway Location.

Harry S. Houpt has secured quarters in the Rhinelander building, Sixty-eighth street and Broadway, New York City, as salesrooms for the Herreshoff and later for the new Houpt cars. The place will be ready for occupancy by February 15.

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THE WEEK'S INCORPORATIONS.

Wyalusing, Pa.—Auto Transit Co, under Pennsylvania laws, with $5,000 capital.

Anderson, Ind.—Speed Changing Pulley Co., under Indiana laws; capital increased from $60,000 to $300,000.

Fort Worth, Tex.—Reid Automobile Co., under Texas laws, with $15,000 capital. Corporators—R. T. Reid, H. H. Hunter et al.

Toledo, O.—Toledo Auto Dealers' Association, under Ohio laws, with $5,000 capital. Corporators—J. G. Swindeman and others.

Cincinnati, O.—American Auto and Sales Co., The, under Ohio laws, with $25,000 capital. Corporators—H. D. Anderson and D. M. Twombley.

Houston, Tex.—Auto Co., of Houston, The, under Texas laws, with $1,000 capital. Corporators—Harvey T. D. Wilson, H. S. Wilson and Van Curtis.

Boston, Mass.—Adams Motor Transfer Co., under Massachusetts laws, with $100,000 capital. Corporators—W. E. Eldridge, president and treasurer, et als.

Brooklyn, N. Y.—Jurinck Auto Company, under New York laws, with $5,000 capital. Corporators—M. F. Jurinck, Leroy R. Smith, Anna Jurinck and Ida Smith.

Minneapolis, Minn.—Minneapolis Automobile Show Association, under Minnesota laws. Corporators—H. E. Pence, Harry E. Wilcox and F. E. Murphy, Minneapolis.

Dubuque, Ia.—Wallis and Culbertson Co., under Iowa laws, with $10,000 capital; automobile business. Corporators—J. M. Culbertson, Jr., J. H. Wallis and J. A Wallis.

St. Louis, Mo.—Doyle-Curran Motor Car Co., under Missouri laws, with $2,000 capital. Corporators—Con P. Curran, Elise Gignoux, Edward M. Doyle, Lulu B. Doyle.

Dover, Del.—American Wagon Co., under Delaware laws, with $100,000 capital; to manufacture taximeter cabs and other vehicles. Corporators—Wilmington fiscal agents.

Cincinnati, O.—Eagle Automobile Co., The, under Ohio laws, with $10,000 capital. Corporators—R. D. H. Anderson, F. R. Flied, F. G. Stutzman, Fred Keife and E D. Woodward.

Fort Smith, Ark.—Ward-Harris Auto Co. of Fort Smith, The, under Arkansas laws, with $25,000 capital. Corporators—J. N. Ward, president; R. P. Harris, F. N. Ward, E. N. Ward.

Bridgeport, Conn.—Fairfield Auto Co., The, under Connecticut laws, with $15,000 capital. Corporators—William P. Hall and H. D. Gates, Bridgeport; Edward R. Hampton, Milford.

Boston, Mass.—Kennedy Ideal Carburetter Co., under Massachusetts laws, with $25,000 capital; to do a general automobile business. Corporators—J. C. Kennedy, W. E. Spear et al.

Far Rockaway, N. Y.—Rockaway Taximeter Cab Co., The, under New York laws, with $1,000 capital. Corporators—Edward Griffen, Patrick Griffen and Peter Murphy, Far Rockaway.

Toledo, O.—Roberts-Toledo Auto Co., The, under Ohio laws, with $10,000 capital. Corporators—Frank L. Mulholland, L. M. Colgan, A. D. Williams, Charles Hartman, C. M. Sherman.

New York City, N. Y.—Weaver-Ebling Automobile Co., under New York laws, with $25,000 capital. Corporators—R. H. Weaver, R. W. Ebling and H. H. Pennock, New York City.

Streator, Ill.—Streator Motor Car Co., under Illinois laws, with $30,000 capital; manufacturing automobiles. Corporators—J. C. Barlow, L. P. Halladay, P. R. Chubbuck, Streator, Ill.

Los Angeles, Cal.—Auto Air-Cushion Wheel Co., under California laws, with $1,000,000 capital. Corporators—G. L. Berger, J. H. Snowden, G. H. Langton, E. E. Powers and H. F. Armour.

Omaha, Neb.—H. E. Frederickson Automobile Co., under Nebraska laws, with $100,000 capital. Corporators—H. E. Frederickson, Sydney L. Edholm, William F. Kemp and Thomas Bromwell.

Los Angeles, Cal.—Los Angeles Vulcanizing Co., under California laws, with $10,000 capital. Corporators—C. A. Bennett, W. J. Bennett, George Bennett J. G. Bennett and C. S. Robinson.

Belleville, Ill.—Western Automobile and Electric Co., The, under Illinois laws, with $2,500 capital. Corporators—John L. Muren, A. L. Muren, H. L. Muren, E. Twenhoefel and Edmund Burke.

Chicago, Ill.—Motor Appliances Co., under Illinois laws, with $2,500 capital; to manufacture automobiles, motors and accessories. Corporators—J. W. Lindgren, E. H. Tillson, A. L. Ringo.

Chicago, Ill.—Skinner & Skinner Co., under Illinois laws, with $2,500 capital; to manufacture automobiles and accessories. Corporators—Stephen G. Skinner, Ada B. Skinner, Franklyn J. Mayo.

Newark, N. J.—National Association of Automobile Owners, under New Jersey laws, with $125,000 capital. Corporators—Thomas H. Ramsdell, J. Frederick Switzer and Frederick M. P. Pearce.

Minneapolis, Minn.—Northwestern Automobile Co., The, under Minnesota laws, with $100,000 capital. Corporators—W. E. Wheeler and William Eggleston, Minneapolis; George Dorr, St. Paul.

Belleville, Ill.—Modern Automobile & Garage Co., under Illinois laws, with $2,000 capital. Corporators—I. H. Wangelin, Joseph Schwarz, Edward L. Schwarz, Ludwig L. Carl, Mrs. Louise W. Wangelin.

Monmouth, N. J.—William McKinley & Co., under New Jersey laws, with $10,000 capital; to deal in farm implements, automobiles, etc. Corporators—William McKinley, James Ralph Firoved, Roscoe William McKinley.

Brooklyn, N. Y.—Kunkel-Lebman Co., under New York laws, with $3,000 capital; to manufacture automobiles. Corporators—Josepr Kunkel, Charles F. Lebman, Katherine K. Kunkel, 269 Clifton place, Brooklyn.

Waterville, Me.—Waterville Motor Co., under Maine laws, with $20,000 capital; to do a general garage and automobile livery business. Corporators—Ira L. Belyea, president; treasurer, John J. Hennings, both of Waterville.

Evansville, Ind.—Traveller Automobile Co., The, under Indiana laws, with $25,000 capital; to manufacture and sell automobiles. Corporators—Harry Stinson, Jacob Haas, Adam Bromm, Fred Bockstage and Paul C. Bietz.

New Haven, Conn.—New Haven Taxicab Co. The, under Connecticut laws, with $25,000 capital; general taxicab, automobile livery and transportation business. Corporators—George G. Nesbit, Peter C. Nesbit, Robert C. Nesbit.

Salt Lake City, Utah—Sharman Automobile Co., under Utah laws, with $2,000 capital; to deal in automobiles. Corporators—Samuel H. Sharman, president and treasurer; Frances A. Sharman, vice-president, and Anna Schneider, secretary.

New York City, N. Y.—Carter Garage Co., under New York laws, with $5,000 capital. Corporators—W. Gibbs Whitney, 27 Williams street, New York; William S. Walsh, 116 Prospect place, Brooklyn; Josephine Caldwell, 487 Tenth street, Brooklyn.

Oklahoma City, Okla.—Citizens Motor Car Co., under Oklahoma laws, with $25,000 capital; to do a general automobile business. Corporators—Weston Atwood, president; Guy Blackwelder, vice president; Ray Colcord, treasurer; A. H. Denham, secretary.

New York City, N. Y.—Bilbro Auto Co., under New York laws, with $20,000 capital; to manufacture automobiles, conduct garage, etc. Corporators—James E. Troy, 412 St. Nicholas avenue, New York; William L. Brown, Westfield, N. J.; Ernest Mayer, 300 East Sixth street, New York.

Patchogue, N. Y.—Bellman Auto Co., under New York laws, with $10,000 capital; garage business and dealing in motors. Corporators—Edmund R. Bellman, Bayport, N. Y.; Charles S. Skinner, 16 West 127th street, New York City, N. Y.; Brockholst K. Miller, Plainfield, N. J.

Brooklyn, N. Y.—Bath Beach Garage & Machine Co., under New York laws, with $2,500 capital; to manufacture and deal in automobiles and maintain garages. Corporators—George E. Reiners and Leonie F. Reiners, 1929 Eighty-sixth street; William H. Geiffin, Twenty-second avenue, corner Bath avenue, Brooklyn, N. Y.

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IN THE RETAIL WORLD.

The Howard Automobile Co., Los Angeles, Cal., is among that city's newcomers. It is housed at 1806 South Main street.

C. F. Smith is a new agent in Wichita, Kan. At his garage, 156 North Fmporia avenue, he will handle the Franklin exclusively.

The P. L. Abel Cycle Co., which handles the Franklin in El Paso, Tex., has moved to a new garage. The building is at 324 Texas street.

The Mitchell Automobile Co., 282 Halsey street, Newark, N. J., has changed its name. It will now be known as the Crawford Automobile Co.

E. C. Eads, of Leavenworth, Kan., started a garage and automobile salesroom on February 1. He will have the agency for Rambler, Ford and Mitchell.

The Morristown Motor Co., of Morristown, Tenn., is to build a pretentious garage. Sam Welch, a Ford agent, is the leading spirit in the enterprise.

In Cedar Rapids, Ia., a new automobile concern, known as the Chicago Motor Car Co., has opened for business. It occupies the old Republican building.

Elwood City, Pa., is to have an automobile repair shop and garage. A local machinist by the name of Blackburn is building the establishment on Spring avenue.

The Hamilton Auto Co., of Allentown, Pa., has taken possession of the former Rink property on Hamilton street. William Weaver has charge of the concern.

The Kansas Motor Car Co., of Wichita, Kan., has taken a location at 217 South Main street. D. A. Wallace, of Hutchinson, has been engaged as manager of the garage.

Harry Cunningham has been appointed manager of the Everitt-Metzger-Flanders Co.'s retail branch in Detroit. Previously he had charge of the Ford Motor Co.'s store in the same city.

F. L. Smith, manager of the Waverly and Elmore salesrooms in Cleveland, O., has moved his establishment to new quarters. He is now located at East Nineteenth street and Euclid avenue.

I. Stubley & Sons, of Newburgh, N. Y., have decided to engage in the automobile garage and repair business. A new building for their use is being erected in Broadway, opposite Lander street.

Nevada, Iowa, is to have a new garage, to be erected by a company of which ex-Judge Stevens, of Boone, is a member. The company has secured options on a number of Lynn street frontages.

R. W. Sturges, of Meridian, Miss., is taking a course in automobile instruction and expects to assume the agency of one or two companies in Meridian within a few weeks. The town has never before harbored motor cars.

Lucas & Christenson, of Cleveland, O., have taken new quarters at 2139 East Eighteenth street. A general garage and storage business will be conducted in addition to the sale of Mitchell cars.

The Davis Square Auto Co., of West Somerville, Mass., has been sold by its proprietor, Winsor L. Snow, to Frank C. Tuckey, of Reading. The new owner will take possession in a few days.

R. D. & C. O. Britton have nearly completed the remodeling of their building on Allyn street, Hartford, Conn. It now includes, besides the four-story garage, a large salesroom with show windows.

The Paegel-Allen Co., Minneapolis, Minn., handling the Schacht cars, has secured more commodious quarters, which bring the concern nearer "Automobile Row." It has moved to 1405-7 Hennepin avenue.

The Standard Auto Co., of Rockford, Ill., will inaugurate its business career within a few days, by a reception to local automobile owners. The company's garage is located at Charles and Sixth streets.

C. A. Stotlar, who left the automobile business in which he was engaged at Devils Lake, N. D., to become train dispatcher on the Great Northern Railway, has decided to resume his Devils Lake enterprise.

C. R. Talbott's garage and farm implement store, occupying a three-story brick building in Springfield, Ill., was burned January 2. Five automobiles were destroyed. The loss is placed at $40,000.

The Speedwell Motor Car Co., of Dayton, Ohio, has secured a lease for a term of years of the store and basement at 2002 Broadway, New York City. It will be the New York headquarters for the company.

The Ideal Auto Co., Des Moines, Ia., owned by G. D. Ellyson, has been bought by Dr. Lewis Schooler and his son, Dean Schooler, of Madrid, Ia. The new proprietors were in the banking business until recently.

John N. Taylor has bought the Selby & Figgins garage in Moberly, Mo., in additionto which he will also open a garage in Columbia. Taylor aquired his capital in the music store and furniture business in Huntsville, Mo.

The Great Western Motor Car Co. has opened headquarters at 1326 Michigan avenue, Chicago, under the management of Phillip A. Miller. The concern is to handle the line produced by the Model Automobile Co., of Peru, Ind.

Seeley, Van Zandt & Crackel, 938 South Main street, Los Angeles, Cal., have been added to the list of distributors for the Continental Caoutchouc Co., of New York. They will distribute Continental tires, demountable rims and accessories in lower California.

V. A. Charles, who for several years has been identified with the automobile trade in New England, has taken charge of the automobile department of the S. M. Supplies Company, of Boston. The new Inter-State line of cars will be handled.

Lexington, Ky., is housing another automobile agency, S. E. Drake & Co. having rented a new store and arranged to handle the Oakland and the International in that city. The latter is a high-wheel buggy manufactured by the International Harvester Co.

The Continental Caoutchouc Co. has appointed the Columbus Buggy Co., 810-14 Walnut street, Kansas City, Mo., as one of its western distributers. The latter concern will distribute Continental tires and material in western Missouri and Oklahoma.

C. J. Conolly, for many years a bicycle and automobile agent in Rochester, N. Y., and later on the traveling force of the Motor Car Equipment Co., of New York City, has joined the forces of the Mutual Auto Accessories Co. He will cover his old territory.

Having recently purchased a 50x96 foot lot on Mt. Royal avenue, Baltimore, Md., Arthur Stanley Zell, president of the Zell Motor Car Company of that city, will erect a 3-story brick garage on the premises. The new garage will be occupied exclusively by the Zell company.

The American Automobile Co., Cincinnati, O., has been organized by H. D. Anderson and D. M. Twombley, to handle American cars in that city and its vicinity. For the present the new company will be located at 630 Walnut street, but will later erect a fire-proof garage downtown.

The Philadelphia headquarters of A. G. Spalding and Bros. have been moved to 202-204 North Broad street. The building, which has been refitted for the purpose, will be the Quaker City home of the Stevens-Duryea, for which the company has the New York and Philadelphia agency.

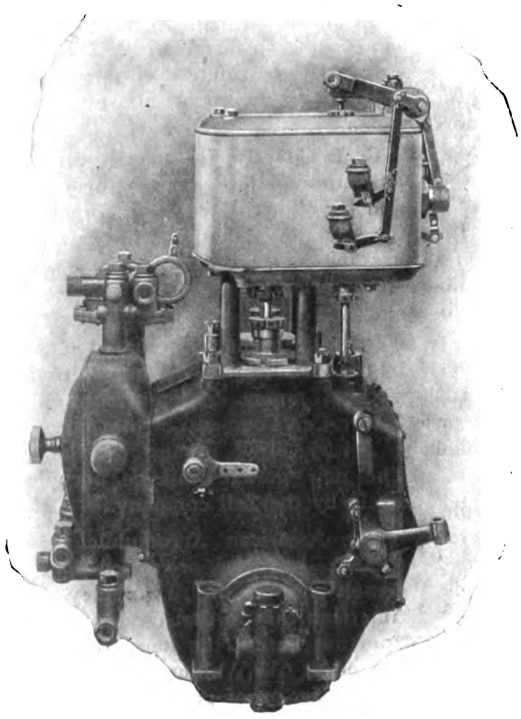
The New Brunswick Garage, with J. Weigel as proprietor, has opened for business at 146 Church street, New Brunswick, N. J. In the new fireproof building a general garage and repair business will be conducted when a special apparatus for charging electric cars has been installed.

The Cedar Valley Auto Co. has opened an office in the First National Bank building, Waterloo, Ia., pending the completion of its garage on Sycamore street. The company, of which A. N. Miller, Panora, Ia., is president, and J. W. Place, secretary and manager, will handle the Studebaker lines.

The Indiana Carriage and Automobile Co. is a newly incorporated concern which succeeds the Indiana Carriage Co., of Indianapolis. C. E. Wilson is president, F. R. Bernard secretary and M. G. Beckner, treasurer and general manager. The first floor and basement of the four story building at 27-33 North Capitol avenue, will be devoted to automobiles.

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THE SIMPLICITY OF
The White Steam Engine



Rear View of Engine

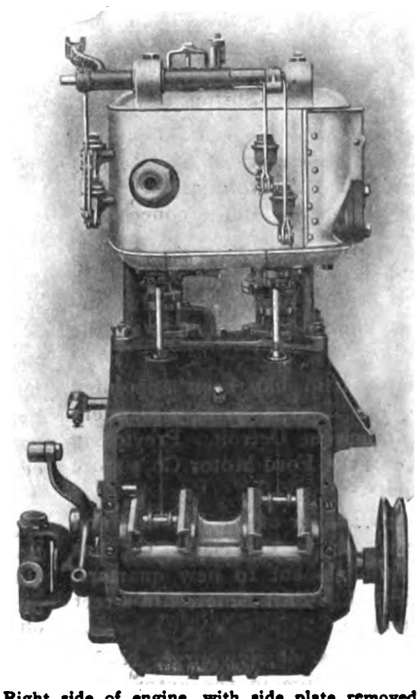
THE accompanying illustrations show the simplicity of construction of the engines used in the 20 horse-power and in the 40 horse-power White Steamers (the power plants of the two models are identical except as regards size). The White engine is more compact, weighs less and has fewer parts than any other automobile engine of similar power rating.

Each cylinder of the White engine is delivering power all of the time; that is, there is steam pressure back of each piston, pushing it in the direction in which it is going, whether moving up or down. In other words, each of the two cylinders of the White engine is equal to four cylinders of a gasoline engine, as regards continuous application of power.

It will be noted that there is no fly wheel on the White engine and that it is attached positively to the driving shaft without the use of a friction clutch. The engine is reversed simply by changing the tilt of the valve guide, shown in the lower illustration.

The crank-shaft of the White engine is a short one-piece forging with but two main bearings. The valves are driven from the connecting rods, this construction being known as the Joy valve motion. There is but one valve for each of the two cylinders. The valves are of the piston type and, the steam pressure being the same on all sides of them, the power necessary to operate them is negligible.

The White engine is the only automobile engine which develops great power at very low speeds, and even when starting. The driver of a White can operate his car at any rate of speed desired —from a "crawl" to the highest speed of which the car is capable —simply by varying the speeds of the engine. This is done by means of the throttle, the action of which is to vary the amount of steam admitted to the cylinders.



Right side of engine, with side plate removed from crank-case, showing the valve-guide

Write for catalog.

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PHILADELPHIA, 629-33 N. Broad St.

PITTSBURG, 138-48 Beatty St.
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CHICAGO, 240 Michigan Ave.
SAN FRANCISCO, Market St. at Van Ness Ave.
ATLANTA, 120-122 Marietta St.

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Significance of the Chicago Show.

What is generally looked forward to as an epoch-making year in the industry so far as the middle and western sections of the country are concerned at least, is inaugurated by the eighth annual automobile show which opens in Chicago on Saturday of this week. Following a year in which market conditions have been affected only by financal considerations and with the producing sections of the country in a condition of eminent prosperity, the present season has opened with every prospect that the western farmers and townsmen will have plenty of money to supply their needs. More than this, it is significant that to a greater extent than ever before, the automobile makers are going after this particular section of the field, both in the manufacturing and sales ends of the business. Several makers, in fact, are marketing models directly designed for the farmers' needs, while these and others are known to have instituted a most thoroughgoing campaign for the harvesting of any possible trade which may lie afield in the districts whence the real prosperity of the nation is drawn.

The Chicago show figures conspicuously in this connection alike as a convenient rendezvous for the partial and final producers of the industry who are massed to so great an extent in the centre of the continent and for the buying class and their local representatives to whom Chicago represents the ideal of all that a general mart should be. To a much greater extent than is true of either of the other big annual shows, Chicago draws from the surrounding and even from the distant country for its visiting contingent of buyers and possible buyers, and therefore it secures a sort of practical and very characteristic atmosphere which is totally at variance with that of any other show. In fact, to the close observer it is noticeable that the attitude of the average show-goer is of a much more practical sort than is that of the average visitor at the New York shows, and that his questions indicate a far shrewder disposition and a desire to secure his full dollar's worth, which in the other case is sometimes lacking altogether. On this account, quite as much as because it draws from the manufacturing field a large number of makers who for one reason or another seldom or never venture to the coast to exhibit, the National aspect of this great show is a thing to be studied and approved.

Growth of the Foreign Trade.

Rewarded adequately in money profits, no doubt, the manufacturers who have most largely participated in the export trade during the past year have but little need of outside congratulation, gracefully as they might accept it, but the American automobile industry as a whole is to be felicitated on the fact that the year's record shows a splendid "balance of trade" for the United States so far as the interchange of motor cars with other countries is concerned. The imports of cars, exclusive of parts, during 1908 amounted to $2,558,819, while the exports came to $4,346,293, making a cash difference of $1,787,474, a neat little bundle calculated to serve as convincing evidence that the real headquarters of automobile production may now be found on this side of the ocean.

It may be that language uniformity accounts for the greater success which American cars enjoy in the United Kingdom than elsewhere abroad. With the vast continent from the Atlantic to the Pacific speaking the one tongue, Americans have ever been reluctant to undertake the labors of learning the languages of Europe, so that probably the best and most effective export work has been chiefly confined to the English-speaking countries. Further successes in France, Germany, and in other Continental divisions may be expected, however, as larger forces of trained men, linguistically equipped, are directed to these fields.

When a manufacturer is busy with a domestic market big enough to engage all his productive energies, it requires particularly far-seeing qualities on his part to tempt him into the bothersome field of export. Yet there are makers of whom it is known that they could sell in the domestic market every car they make, who nevertheless set aside a portion of their output each year for foreign countries. It broadens the foundations on which their business is built and gives them the security of a wider average of business conditions. As shown by the figures, there are great outside markets for American cars. The fruits of these markets is for the manufacturer who cultivates them.

Influence of the Parts Maker.

Viewed in the important light of consulting engineers to the industry at large, the parts makers begin to assume a degree of prestige which is entirely new to them so far as the general public is concerned. Yet those comprising the better and more successful class of parts makers have earned for themselves just this distinction and are entitled to practically all that it involves. Ever since the appearance of the first all-assembled cars, there has been a general feeling that the parts makers as a class were part and parcel of a tendency to cheapen the automobile product as a whole; that they represented a phase of the process of standardization not wholly to be desired.

Instead it is a fact very much appreciated by many a manufacturer, that the parts makers themselves have been directly responsible for numerous improvements in car construction which have been of a general and sweeping nature, and which have affected not simply the assemblers, but also the proud standbys whose slogan it has been from the very beginning that they produce from 90 to 100 per cent. of their entire product. For the parts maker, in the guise of specialist, is placed in the enviable position of the expert who is able to isolate

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for his own consideration the particular problem upon which he is engaged and to give it the very best of his concentrated effort. This the manufacturer who is attempting to establish the perfection of his whole product simultaneously or as nearly so as possible, cannot do and the result is that through the entire range of accessories to structural parts, and from tires and springs to radiators and fenders, there are many parts which are commonly regarded as best produced as well as most economically produced by the makers who concentrate upon those lines to the exclusion of all others.

But the influence of the parts maker is even broader than this would indicate. For in the highest development of the class are found makers who see the wisdom of refusing to install their products except under circumstances which they themselves are assured will afford a reasonable guarantee of excellence in performance. In order to determine whether or not the proposed buyer is capable of using their products to the best advantage, they act in a sort of self-constituted advisory capacity, going over the preliminary designs of the assembler, checking up his ideas with their own, getting his viewpoint and incidentally extending their own scope of vision, and finally condescending to sell him only when they are convinced that the use of the parts will redound to their own credit. As a result of this policy, those parts makers who have adhered to it rigorously have come to number among their clients some of the best known and most prosperous makers and have themselves secured an amount of business which is equally enviable in quality and in quantity.

In thus assuming a degree of responsibility for the final product, which at first sight appears to be of an entirely charitable nature, but which on analysis is seen to be of the most interested breed, the parts producers have become the economic mainstay of the American industry. Furthermore, so long as they continue to follow the lines of procedure which characterize the efforts of the most successful of their number, there can be small question of their continued prosperity.

Much is being said just now of the inaccuracy of the common methods of expressing the power of the motor, of the impossibility of securing a close yet simple rating formula, and of how the average motorist is absolutely unable to tell the horsepower output of his machine except by quoting the figures given in the makers' catalogues, these, in turn, being admittedly inexact in very many cases. Granted that all this is so, one who is able to recall experiences with the older motors in the days when every motorist must be his own engineer, is moved to inquire "What's the use?" Whether he knows to the last foot pound what power his motor will develop, or whether he can only approximate it, the fact remains that as a means of vehicular propulsion it performs its expected function in quiet, unostentatious fashion, and it would almost seem that the question of its power, like that of the area of its valves, might now be turned over entirely to the tender mercies of the builder, and with perfect trust and confidence.

Contracts for complete upkeep and maintenance at a fixed sum per month are being tried in the case of both pleasure cars and commercial vehicles, and they appear to have an attraction for the user that is destined to give them no little popularity. The garage proprietor attempting to handle any business on this basis can advantageously take a leaf from the book of the pioneers' experience. This experience shows that the price asked must be fairly high and that correspondingly the service given must be thorough, painstaking and liberal, in order to be profitable on the one side and satisfactory on the other.

One of the New York "auto editors" gravely and with considerable prominence states that novelty will be given to the Florida speed carnival by the employment of "the cylinder displacement" formula in certain handicap events. When they begin to displace the cylinders, or when the cylinders begin to displace anything the novelty certainly will be so great as to command the attention of the civilized world. It is hoped that the details of the marvelous formula will not be too long withheld.

In discussing the appropriation for the purchase of automobiles for the incoming President, Congress almost has measured up to the standard of a board of aldermen. The narrow-gauge opinions expressed by some of the opposing "statesmen" make it easier to understand the conditions prevailing and the lack of progress of those portions of the country which they represent.

COMING EVENTS

February 6-13, Chicago, Ill.—National Association of Automobile Manufacturers' show, Coliseum and First Regiment Armory.

February 15, Detroit, Mich.—Detroit Automobile Dealers Association's show, Wayne Pavilion.

February 15-20, St. Louis, Mo.—Automobile Manufacturers and Dealers Association's annual show.

February 15-20, Bangor, Me.—Eastern Maine automobile show, Auditorium.

February 16-18, Denver, Co.—Denver Motor Club's first annual show, Auditorium.

February 17-20, San Jose, Cal.—Automobile show, Auditorium Rink.

February 20, 21, 22, New Orleans, La.—New Orleans Automobile Club's Mardi Gras carnival 3 days race meet.

February 20-27, Newark, N. J.—New Jersey Automobile Trade Association's show.

February 20-27, Hartford, Conn.—Automobile Dealers Association's show.

February 22, Omaha, Neb.—Omaha and Council Bluffs dealers' show, Auditorium.

February 22, Cleveland, O.—Cleveland Automobile Dealers Company's show, Central Armory.

February 22-27, Portland, Me.—Automobile show.

February 24-27, Baltimore, Md.—Automobile Club of Maryland's show, Fifth Regiment Armory.

March 1-6, Buffalo, N. Y.—Buffalo Automobile Club's 7th annual show, Convention Hall.

March 1-6, Providence, R. I.—Automobile show.

March 2-6, Rochester, N. Y.—Automobile and Motor Trades Association of Rochester show, Convention Hall.

March 6-13, Boston, Mass.—Boston Automobile Dealers Association (Inc.) seventh annual show, Mechanics Building.

March 8-13, Kansas City, Mo.—Kansas City Automobile Dealers Association's show, Convention Hall.

March 8-13, Portland, Ore.—Portland Automobile Club's show.

March 10-13, Memphis, Tenn.—Automobile show, Auditorium building.

March 13-20, Minneapolis, Minn.—Minneapolis Automobile Show Association's show, National Guard Armory.

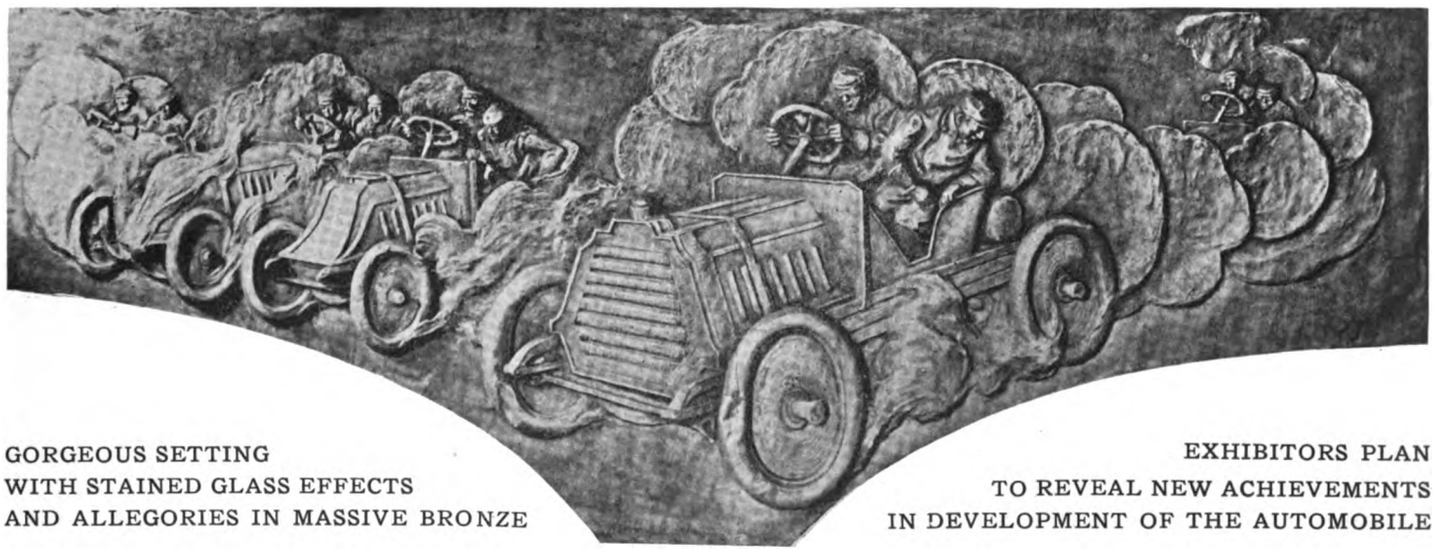
March 15-20, Rochester, N. Y.—Rochester Automobile Dealers Association's show, Convention Hall.

March 27-April 3, Pittsburg, Pa.—Automobile Dealers Association's show, Duquesne Garden.

April 15-17, Louisville, Ky.—Louisville Automobile Association's show, Coliseum.

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CHICAGO PROMISES GREATEST SHOW



GORGEOUS SETTING
WITH STAINED GLASS EFFECTS
AND ALLEGORIES IN MASSIVE BRONZE

EXHIBITORS PLAN
TO REVEAL NEW ACHIEVEMENTS
IN DEVELOPMENT OF THE AUTOMOBILE

Despite its traditional, breezy and—at show time—usually frigid atmosphere, Chicago always manages to accord a welcome to those who visit its show, which is in no way tempered by conditions of climate, but is wholesome and hearty. The reasons for this are manifold. But outside the purely temperamental one of the cordiality, which is due to its geographical location, the principle reason probably is that Chicago is proud of her boast that she harbors the only truly national automobile show. The Chicago show, as is observed from year to year, is of more nearly national character than any other, first, because it is free from the factional tenencies of the exhibitions which are conducted by one or the other of the two great opposing associations of manufacturers, and second, because its central location affords it an advantage to the possible buyer who is anxious to learn what the market holds for him personally, and so is in many respects an even more attractive proposition to the maker than either of the New York displays.

The show which opens in the Coliseum on Saturday afternoon of this week will be no exception to the rule. In fact, it will be, if anything, more national in character than any which has preceded it, because of the generous attendance of many of the smaller makers of the Middle West who have not before exhibited this year. It will differ from last year's show in that there will be no separate exhibition of commercial vehicles, and thereby the visitor will be in a measure encouraged. For it means that his travels up and down the booths of the exhibitors will be confined to the Coliseum and the First Regiment Armory, which is but a step off, and that he will not be forced to pioneer his weary way through several blocks of desolation to the ancient Tattersalls wherein the commercial section was displayed a year ago. Nevertheless, the commercial element of the industry will not be dormant so far as the show is concerned, as many of those who produce commercial as well as pleasure cars have arranged to place samples of this portion of their product on the stands with their other cars. The number of those displaying commercial cars exclusively, however, will be reduced to 2.

In preparation for this, the eighth national show, to be held under the auspices of the National Association, which, by the way, is the eleventh which has been held in Chicago under one management or another, due attention has been paid to the important matter of decorations. Last year, the element of staff work was introduced liberally into the decorative scheme with good effect, and this year its use is to be increased, but with the material addition here and there of an element to show decorations in the shape of stained glass panels. These, it is hinted by the management, are to be tried out in an experimental way, in order to determine their full value with an eye to future shows. For it is the custom of show managements to study their decorations as far in advance as possible.

For the main floor of the Coliseum much the same general plan as that adopted for last year will be employed. That is to say, the booths will be divided by elevated arches supported on more or less ornamental columns, the effect being to break up the barrenness of the floor area, thus affording a background for each of the individual exhibits. Instead of the whitened or tinted tone of the staff, as was used last year, liberal use will be made of bronzing with the result that the entire ornamentation of the show will bear an aspect of metallic stability entirely different from anything before attempted.

The floor will be divided into four main groups with aisles of equal size forming a cross. Down the centre of each island will be a main dividing structure, whose pillars, rising to the height of 15 feet, will bear representations of the various phases of automobiling—sport, utility and commerce—bronze statuary in different heights and varying motives furnishing the medium. At the centre of each group of a huge wheel, some six feet in diameter, will be represented, and below it the representation of a man of heroic stature, bent in the effort of giving it impetus. Stretching to the right and left an outwardly curving arch will afford a backing for two paintings of automobile scenes, and four stained glass windows, two on either side, one pair being rectangular and the other round. The remainder of the structure will be backed with green silk and gold trimmings.

The lettering of the exhibitors' names will be in white and gold with raised characters mounted on a red silk background. The signs will run along the top of the sections, while above them will be a row of flower boxes filled with real ferns and flowers.

The principle of uniformity in decorations, of course, will be carried out in all parts of the show. The walls are to be concealed by wooden panels, raised to a height of 10 feet from the floor, and in Mission finish, while in the arena of the Coliseum the balcony fronts will be treated in panelling of lighter shades. The same effect will be carried over the entire roof. For illumination, generous use will be made of flaming arc lights, while the usual profusion of incandescent bulbs—some concealed, some of large size and placed more with regard to their illuminating value than their ornamental effect, will serve to dispel the gloom from the otherwise obscure corners.

The complete roster of exhibitors, corrected to date, includes a grand total of 252 displays. Of these no less than 92 will be devoted to the exhibition of complete cars. Twenty-one booths will be given over to the display of motorcycles, while the ex-

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hibitors of parts, accessories, materials and supplies of various sorts, will occupy no less than 130 booths, with a prospect of an additional number squeezed into odd corners sub-let from those whose names regularly appear on the list.

Having seen a great proportion of the cars, as of the other exhibits, at one or the other of the New York shows, the eastern visitor always is tempted to the belief that Chicago will present little that is really new to his eyes. And in this he is as constantly disappointed. For it is the habit of many automobile makers to bring out new body mountings especially for the Chicago exhibit—sometimes even new models as well—while occasionally exhibits which have been completed too late to appear in New York appear there. Furthermore, the flood tide of accessory novelty never lets up, and invariably there are a number of surprises ready to be disclosed when the doors open—even among those who have exhibits at the Palace or Garden. In this respect the forthcoming show promises to be in no wise behind its predecessors.

In the matter of cars produced by makers who have not shown before this season, the visitor will find ample opportunity for investigation in studying the construction of the 23 different types of vehicle on view for the first time this year. In fact no less than 11 of them have not been shown before in Chicago, and if at all, only in purely local shows. The makers of these new cars are as follows:

American Locomotive Co., Auburn Automobile Co., Bartholomew Co., Bendix Co., The: Berliet Import Co., Buick Motor Car Co., Chicago Coach & Carriage Co., Clark-Hatfield Auto Co., Columbus Buggy Co., Dorris Motor Car Co., Fort Pitt Motor Mfg. Co., Jeffery & Co., T. B.; Meteor Motor Car Co., Mier Carriage & Buggy Co., Model Automobile Co., Olds Motor Works, Randolf Motor Car Co., Ricketts Auto Works, Rider-Lewis Motor Car Co., Staver Carriage Co., Streator Motor Car Co., Owen Thomas Motor Car Co., Zimmerman Mfg. Co.

As being essentially a product of the central portion of the country, the high wheeled motor buggy in all its phases will be displayed to particularly good advantage. There will be on view the products of no less than 10 makers devoted exclusively to this field. Furthermore, 6 of them will be of particular interest as being included in the list of those who have not exhibited previous to the Chicago show.

In this connection it is noteworthy that the list of newcomers is by no means confined to any particular class or type of vehicle, however. Among the cars staged for the first time will be found examples of practically every type of motor vehicle in common use from the light high wheeled vehicle up to and including the rather elaborate six cylinder machine. Nor will these cars be found lacking in the elements of novelty and originality which constitute the spice of the show study. Several of them, in fact, embody details of construction which are more or less remarkable in their construction or operation.

It has been observed frequently enough that the period of noticeable and noteworthy trends in the industry is long past. Matters of detailed construction no longer possess the fascination for the average showgoer that they used to have. Nevertheless, if one marked tendency is to be observed, it may be set down as residing in the quarters occupied by the cars of medium power



DECORATIVE DETAIL IN STAINED GLASS

and price. These middle-class vehicles are fast assuming the proportions of a majority in the industry just now, and their presence at the two New York shows constituted their most remarkable feature in many respects. Chicago, as the Mecca for makers catering to the demand of the masses, however, seems likely to prove an even more important revelation in the matter of the growing production and the growing popularity of these vehicles of the so-called popular type.

The Cars Not Shown in New York.

A. L. Co.	Halladay
Auburn	Meteor
Bendix	Mier
Berliet	Oldsmobile
Buick	Owen Thomas
Clark-Hatfield	Pittsburg Six
Columbus Electric	Randolf
Dorris	Ricketts
Duer	Rambler
Emancipator	Rider-Lewis
Glide	Staver
Great Western	Zimmerman.

It has been observed that the accessory sections will be in no wise lacking in novel features, even among those exhibitors who already have shown in New York. In addition to these, however, there will be a substantial contribution of new things shown by makers who are exhibiting for the first time this season, and who will be present to the number of 35. They are as follows:

Eugene Arnstein, Bower Roller Bearing Co., S. Breakstone, Central Rubber Co., Chicago Pottery Co., Chicago Recometre Co., Commercial Battery Electric Co., Duplex Coil Co., Fellock Auto Mfg. Co., Fok Metallic Tire Belt Co., Fulton & Zinke, Emancipator Automobile Co., Goshen Rubber Works, Hancock Mfg. Co., Imperial Brass Mfg. Co., C. P. Kimball & Co., Limousine Carriage Mfg. Co., Lougdin-Brugger Co., Long Mfg. Co., London Auto Supply Co., McCanna Mfg. Co., Edward Neeley & Co., Pfanstiehl Electrical Laboratory, Rochester Safety Lock Co., Ross Gear & Tool Co., Fred Smith, F. E. Sparks, Standard Varnish Works, Twentieth Century Motor Car Co., Triple Action Spring Co., Universal Tire Protector Co., Vehicle Top & Supply Co., Vivax Storage Battery Co., Westinghouse Co., Whiteley Steel Co.

The official list of exhibitors at the Coliseum and Armory, their locations and the wares which they will display, corrected to date, is as follows:

AUTOMOBILES.

Coliseum—Main Floor.

American Locomotive Co., New York, F-1—Locomotive gasolene cars.

Apperson Bros. Automobile Co., Kokomo, Ind., E-1—Apperson gasolene cars.

Apperson-Toledo Motor Co., Toledo, O., E-4—Toledo gasolene cars.

Babcock Electric Carriage Co., Buffalo, N. Y., B-3—Babcock electric cars.

Baker Motor Vehicle Co., Cleveland, O., B-4—Baker electric cars.

Bartholomew Co., The, Peoria, Ill., H-1—Glide gasolene cars.

Buick Motor Co., Flint, Mich., E-2—Buick gasolene cars.

Cadillac Motor Car Co., Detroit, Mich., D-3—Cadillac gasolene cars.

Corbin Motor Vehicle Corporation, New Britain, Conn., F-4—Corbin gasolene cars.

Dayton Motor Car Co., Dayton, O., D-2—Stoddard-Dayton gasolene cars.

De Luxe Motor Car Co., Detroit, Mich., J-1—De Luxe gasolene cars.

Elmore Mfg. Co., Clyde, O., A-6—Elmore 2 cycle gasolene cars.

Everitt-Metzger-Flanders Co., Detroit, Mich., C-2—E-M-F gasolene cars.

Franklin Mfg. Co., H. H., Syracuse, N. Y., D-6—Franklin gasolene cars.

Haynes Automobile Co., Kokomo, Ind. C-6—Haynes gasolene cars.

Holsman Automobile Co., Chicago, Ill., E-3—Holsman motor buggies.

Jeffery & Co., Thomas B., Kenosha, Wis., B-2—Rambler gasolene cars.

Knox Automobile Co., Springfield, Mass., G-2—Knox gasolene cars.

Locomobile Co. of America, Bridgeport, Conn., D-5—Locomobile gasolene cars.

Lozier Motor Co., New York City, H-2—Lozier gasolene cars.

Matheson Motor Car Co., Wilkes-Barre, Pa., G-1—Matheson gasolene cars.

Maxwell-Briscoe Motor Co., Tarrytown, N. Y., D-4—Maxwell gasolene cars.

Mitchell Motor Car Co., Racine, Wis., K-1—Mitchell gasolene cars.

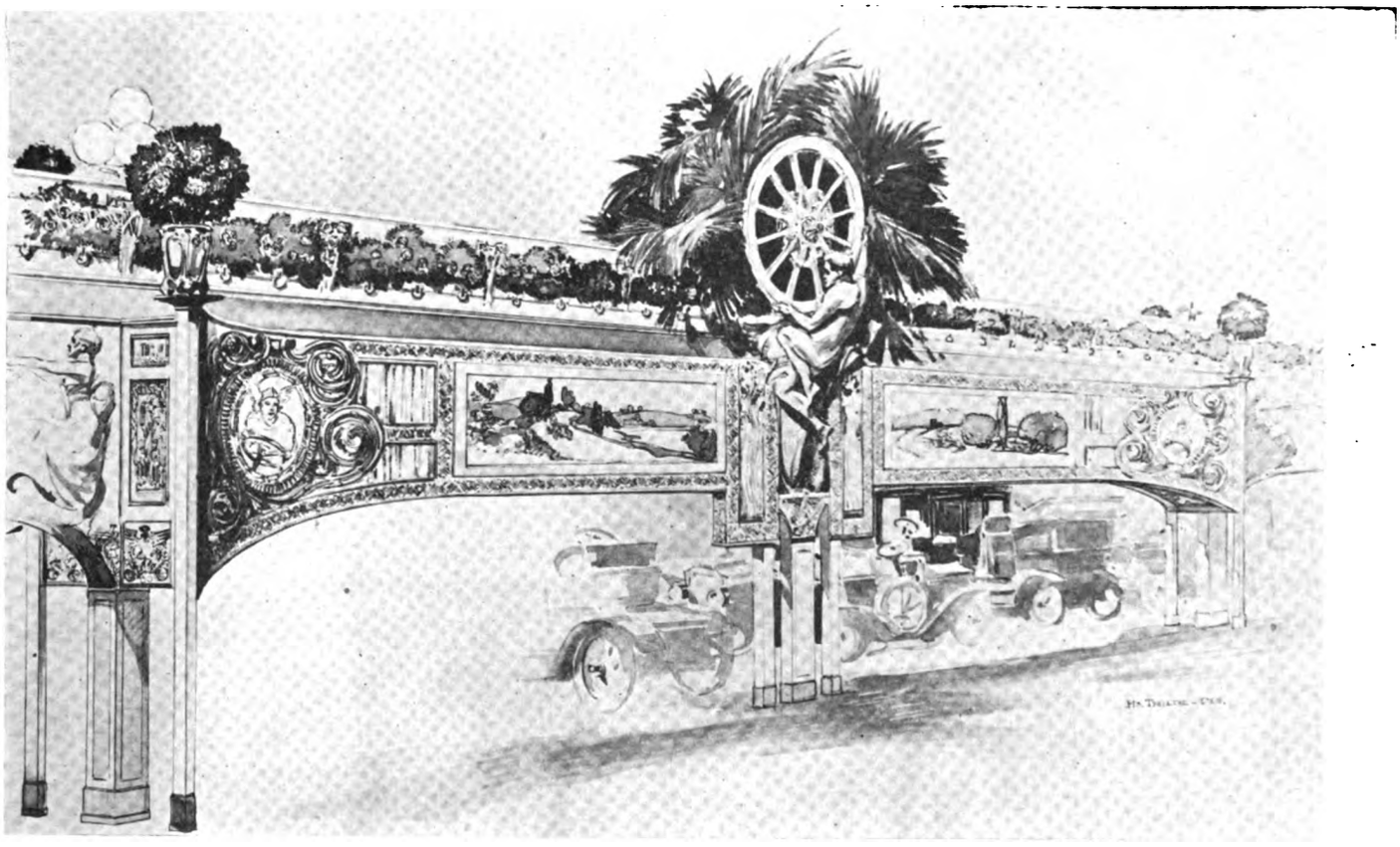
National Motor Vehicle Co., Indianapolis, Ind., C-5—National gasolene cars.

Olds Motor Works, Lansing, Mich., F-3—Oldsmobile gasolene cars.

Packard Motor Car Co., Detroit, Mich., C-1—Packard gasolene cars.

Peerless Motor Car Co., Cleveland, O., A-5—Peerless gasolene cars.

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SCHEME OF THE DECORATIVE ARCHES WHICH WILL DIVIDE THE EXHIBITS

Pierce Co., George N., Buffalo, N. Y., F-2—Pierce gasolene cars.

Pope Mfg. Co., Hartford, Conn., A-2—Pope-Hartford gasolene cars.

Premier Motor Mfg. Co., Indianapolis, Ind., C-3—Premier gasolene cars.

Reo Motor Car Co., Lansing, Mich., B-6—Reo gasolene cars.

Ricketts Auto Works, South Bend, Ind., L-1—Ricketts gasolene cars.

Stearns Co., F. B., Cleveland, O., B-5—Stearns gasolene cars.

Stevens-Duryea Co., Chicopee Falls, Mass., A-4—Stevens-Duryea gasolene cars.

Studebaker Automobile Co., South Bend, Ind., C-4—Studebaker gasolene cars.

Thomas Motor Co., E. R., Buffalo, N. Y., A-3—Thomas gasolene cars.

White Company, The, Cleveland, O., D-1—White steam cars.

Winton Motor Carriage Co., Cleveland, O., A-1—Winton gasolene cars.

Woods Motor Vehicle Co., Chicago, Ill., B-1—Woods gasolene and electric cars.

Coliseum Annex—First Floor.

Austin Automobile Co., Grand Rapids, Mich., O-2—Austin gasolene cars.

Chalmers-Detroit Motor Co., Detroit, Mich., M-1—Chalmers-Detroit gasolene cars.

Midland Motor Co., Moline, Ill., Q-2—Midland gasolene cars.

Oakland Motor Car Co., Pontiac, Mich., P-1—Oakland gasolene cars.

Pennsylvantia Auto-Motor Co., Bryn Mawr, Pa., Q-1—Pennsylvania gasolene cars.

Simplex Motor Car Co., Michawaka, Ind., N-1—Simplex 2-cycle gasolene cars.

Welch Motor Car Co., Pontiac, Mich., Q-3—Welch gasolene cars.

York Motor Car Co., York, Pa., O-1—York Pullman gasolene cars.

Coliseum—Basement.

Bendix Co., The, Chicago, Ill., 32—Bendix motor buggies.

Cameron Car Co., Beverley, Mass., 58—Cameron gasolene cars.

Clark-Hatfield Auto Co., Oshkosh, Wis., 51—Motor buggies.

Emancipator Automobile Co., Chicago, Ill., 15—Emancipator gasolene cars.

Grabowsky Power Wagon Co., Detroit, Mich., 40—Grabowsky commercial trucks.

Interstate Automobile Co., Muncie, Ind., 30—Interstate gasolene cars.

Mier Carriage & Buggy Co., Ligonier, Ind., 57—Motor buggies.

Randolph Motor Car Co., Chicago, Ill., 20—Gasolene cars.

Rider-Lewis Motor Car Co., Muncie, Ind., 24—"Excellent Six" gasolene cars.

Schacht Mfg. Co., Cincinnati, O., 16—Schacht motor buggies.

Thomas Motor Co., E. R., Buffalo, N. Y. 34—Thomas gasolene cars.

Thomas Motor Car Co., Owen, Janesville, Wis., 35—Owen Thomas gasolene cars.

Zimmerman Mfg. Co., Auburn, Ind., 1—Zimmermann motor buggies.

First Regiment Armory—Main Floor.

Anderson Carriage Co., Detroit, Mich., F-1—Detroit electric cars.

Anderson Carriage Mfg. Co., Anderson, Ind., E-1-1½—Anderson motor buggies.

Atlas Motor Car Co., Springfield, Mass., B-3—Atlas 2-cycle gasolene cars.

Auburn Automobile Co., Auburn, Ind., D-4—Auburn gasolene cars.

Berliet Import Co., Chicago, Ill., G-4—Berliet gasolene cars.

Black Mfg. Co., Chicago, Ill., E-4—Black motor buggies.

Buckeye Mfg. Co., Anderson, Ind., A-3—Lambert gasolene cars.

Brush Runabout Co., Detroit, Mich., H-1—Brush gasolene cars.

Cartercar Co., Pontiac, Mich., C-2—Cartercar gasolene cars.

Columbus Buggy Co., Columbus, O., B-1—Columbus electric cars.

Dorris Motor Car Co., St. Louis, Mo., B-4—Dorris gasolene cars.

Fiat Automobile Co., New York City, G-1—Fiat gasolene cars.

Fort Pitt Motor Mfg. Co., New Kensington, Pa., W-½—Pittsburg "Six" gasolene cars.

Gaeth Automobile Co., Cleveland, O., G-3—Gaeth gasolene cars.

Jackson Automobile Co., Jackson, Mich., A-4—Jackson gasolene cars.

Kimball & Co., C. P., Chicago, Ill., G-6—Bodies.

Kissel Motor Car Co., Hartford, Wis., A-1 Kisselkar gasolene cars.

McIntyre Co., W. H., Auburn, Ind., C-4—McIntyre gasolene cars.

Meteor Motor Car Co., Bettendorf, Ia., E-5—Meteor gasolene cars.

Model Automobile Co., Peru, Ind., F-2—Great Western gasolene cars.

Moline Automobile Co., East Moline, Ill., D-3—Moline gasolene cars.

Moon Motor Car Co., St. Louis, Mo., B-2—Moon gasolene cars.

Mora Motor Car Co., Newark, N. Y., D-1—Mora gasolene cars.

Nordyke & Marmon Co., Indianapolis, Ind., D-2—Marmon gasolene cars.

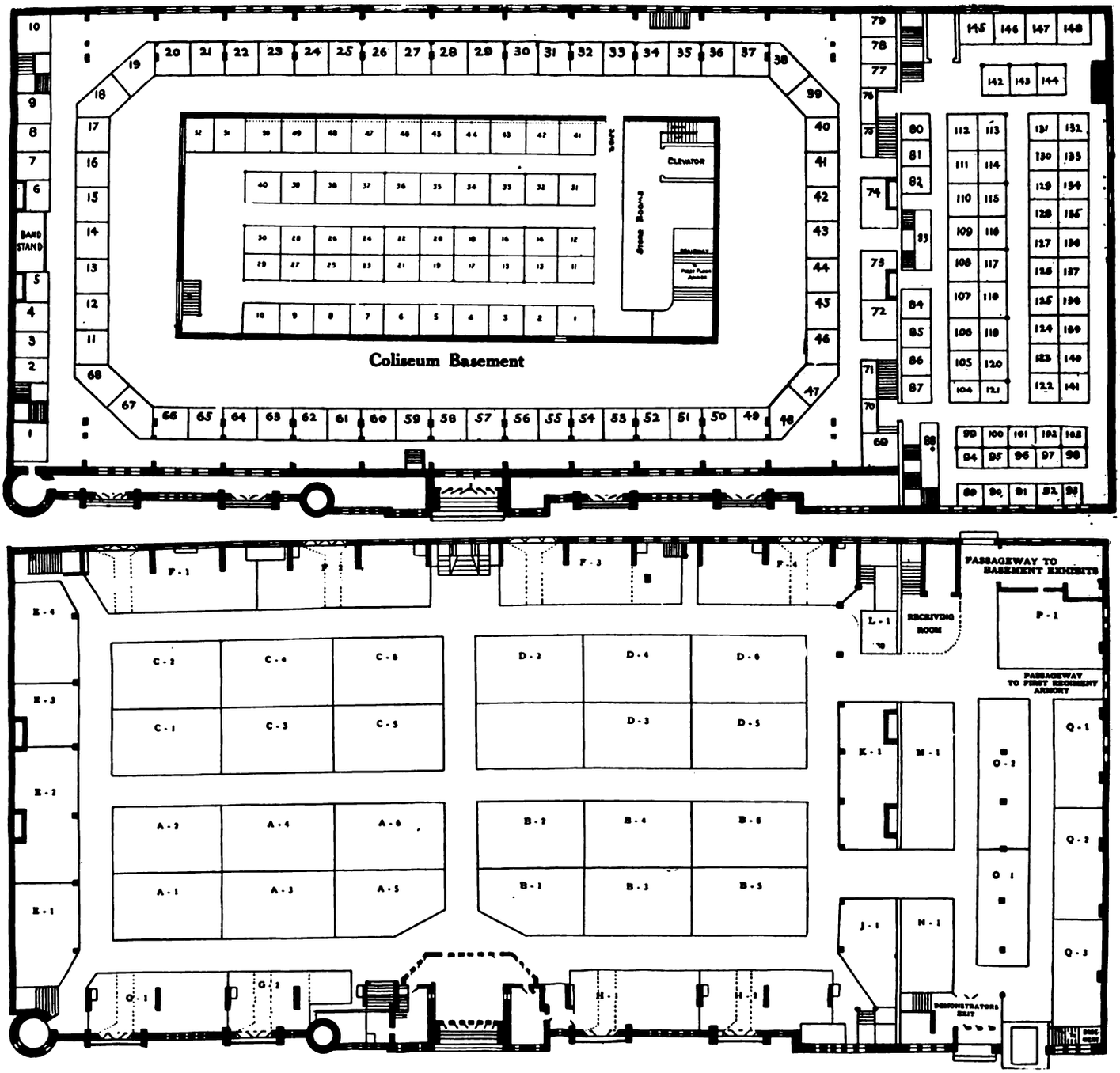
Overland Automobile Co., Indianapolis, Ind., C-1—Overland gasolene cars.

Rapid Motor Vehicle Co., Pontiac, Mich., E-3—Rapid gasolene trucks.

Rausch & Lang Carriage Co., Cleveland, O., G-5—Rausch & Lang electric cars.

Speedwell Motor Car Co., Dayton, O., A-2—Speedwell gasolene cars.

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CHICAGO SHOW—COLISEUM AND ANNEX, MAIN, GALLERY AND SECOND FLOORS, BASEMENT SUPERPOSED

Staver Carriage Co., Chicago, Ill., E-E—Staver motor buggies.

Streator Motor Car Co., Streator, Ill., E-6—Halladay gasolene cars.

Waverley Co., The, Indianapolis, Ind., C-3—Waverley electric cars.

Wayne Works, Richmond, Ind., G-2—Richmond gasolene cars.

MOTORCYCLES.

Coliseum Annex—Second Floor.

American Motor Co., Brockton, Mass., 139—M-M motorcycle.

Armac Motor Co., Chicago, Ill., 97—Armac motorcycles.

Aurora Automatic Machinery Co., Aurora, Ill., 135—Thor motorcycles.

Auto-Bi Co., Buffalo, N. Y., 137—Auto-Bi motorcycles.

Consolidated Mfg. Co., Toledo, O., 131—Yale-California motorcycles.

Excelsior Motor & Mfg. Co., Chicago, Ill., 129—Excelsior motorcycles.

Harley-Davidson Motor Co., Chicago, Ill., 127—Harley-Davidson motorcycles.

Hendee Mfg. Co., Springfield, Ill., 126—Indian motorcycles.

Hornecker Mfg. Co., Genesee, Ill., 96—Torpedo motorcycles.

Magnet Motor Co., Chicago, Ill., 102—Magnet motorcycles.

Merkel-Light Motor Co., Pottstown, Pa., 93—Merkel-Light motorcycles.

Minneapolis Motor Cycle Co., Minneapolis, Minn., 89—Minneapolis motorcycles.

New Era Gas Engine Co., Dayton, O., 98—New Era motorcycles.

N. S. U. Motor Co., New York, 141—N. S. U. motorcycles.

Ovington Motor Co., New York, 133—F. N. motorcycles.

Pierce Cycle Co., Buffalo, N. Y., 90—Pierce motorcycles.

Reading Standard Co., Reading, Pa., 100—Reading Standard motorcycles.

Thiem Mfg. Co., Minneapolis, Minn., 136—Thiem motorcycles.

Wagner Motor Cycle Co., St. Paul, Minn., 130—Wagner motorcycles.

ACCESSORIES.

Coliseum—Gallery.

Atwater-Kent Mfg. Co., Philadelphia, Pa., 17—Igniters and timers.

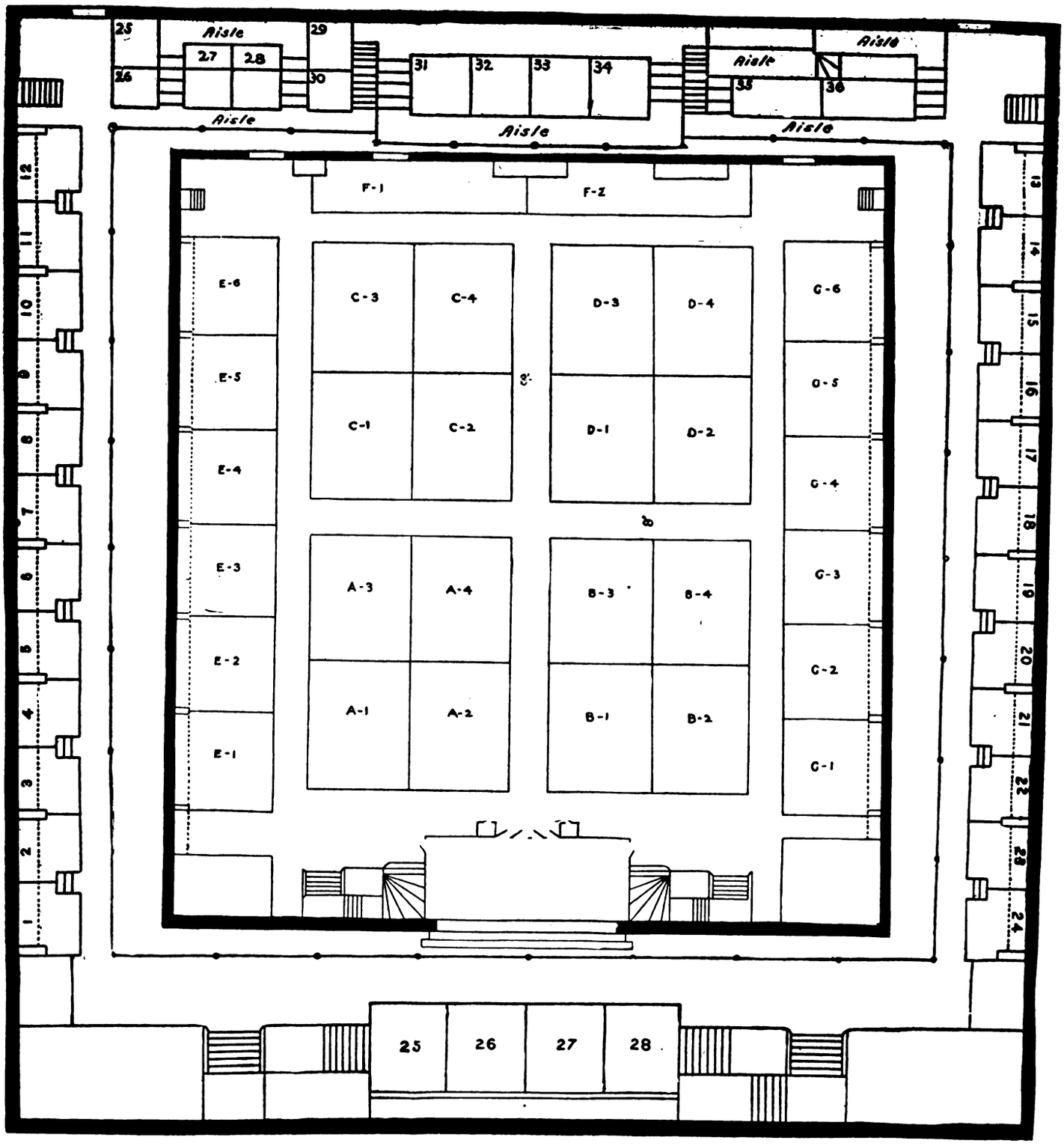
Auto Improvement Co., New York City, 14—Self-starters and specialties.

Badger Brass Mfg. Co., Kenosha, Wis., 40—Solar lamps.

Baldwin Chain & Mfg. Co., Worcester, Mass., 64—Baldwin chains and recoil check.

Bowser & Co., S. F., Fort Wayne, Ind., 73—Tanks and gasolene storage systems.

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CHICAGO SHOW—FIRST REGIMENT ARMORY, GALLERY WITH MAIN FLOOR SUPERPOSED.

Brown-Lipe Gear Co., Syracuse, N. Y., 36—Gears and transmissions.

Byrne-Kingston & Co., Kokomo, Ind., 76—Kingston carburetters.

Chicago Battery Co., Chicago, Ill., 33—Batteries.

Cooks Standard Tool Co., Kalamazoo, Mich., 5—Tools.

Cramp & Sons Ship & Engine Building Co., Wm., Philadelphia, Pa., 59—Bronze castings and parts.

Diamond Chain & Mfg. Co., Indianapolis, Ind., 58—Axles, chains, transmissions and sprockets.

Diamond Rubber Co., Akron, O., 35—Diamond tires.

Dietz Co., R. E., New York City, 28—Lamps.

Duff Mfg. Co., Pittsburg, Pa., 66—Jacks.

Edmunds & Jones Mfg. Co., Detroit, Mich., 74—Lamps and specialties.

Electric Storage Battery Co., Philadelphia, Pa., 61—Accumulators.

Firestone Tire & Rubber Co., Akron, O., 67-8—Firestone tires.

Fisk Rubber Co., Chicopee Falls, Mass., 38—Tires.

G & J Tire Co., Indianapolis, Ind., 45—G & J tires.

Gabriel Horn Mfg. Co., Cleveland, O., 50—Gabriel horns and cut-outs.

Goodrich Co., B. F., Akron, O., 48—Goodrich tires.

Goodyear Tire & Rubber Co., Akron, O., 52—Goodyear tires.

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Gray & Davis, Amesbury, Mass., 43—Lamps.
Hancock Mfg. Co., Charlotte, Mich., 16—Oilers.
Hardy & Co., R. E. New York City, 56—Spark plugs.
Harris Oil Co., A. W., Providence, R. I., 25—Lubricants.
Hartford Rubber Works, Hartford, Conn., 31—Hartford tires.
Hartford Suspension Co., Jersey City, N. J., 8—Truffault-Hartford shock absorbers.
Heinze Electric Co., Lowell, Mass., 63—Coils and ignition equipments.
Imperial Brass Mfg. Co., Chicago, Ill., 7—Pumps and fittings.
Jones Speedometer, New York City, 55—Jones speedometers, annunciators, odometers, speed regulators and specialties.
Kokomo Electric Co., Kokomo, Ind., 75—Ignition specialties.
Long Mfg. Co., Chicago, Ill., 53—Hoods, radiators.
McCord Mfg. Co., Detroit, Mich., 32—Radiators.
Morgan & Wright, Detroit, Mich., 27—Morgan & Wright tires.
Motsinger Device Mfg. Co., Pendleton, Ind., 24—Ignition systems.
National Carbon Co., Cleveland, O., 46—Batteries.
Never-Miss Spark Plug Co., Lansing, Mich., 70—Spark plugs.
N. Y. & N. J. Lubricant Co., New York City, 19—Lubricants.
Oliver Mfg. Co., Chicago, Ill., 71—Jacks and accessories.
Pantasote Co., New York City, 79—Top and upholstering materials.
Pennsylvania Rubber Co., Jeannette, Pa., 62—Pennsylvania tires
Pratt Mfg. Co., Wm. E., Chicago, Ill., 1
Rands Mfg. Co., Detroit, Mich., 10—Tops.
Remy Electric Co., Anderson, Ind., 65—Magnetos.
Republic Rubber Co., Youngstown, O., 13—Republic tires.
Shaler Co., C. A., Waupum, Wis., 9—Electric vulcanizers.
Shelby Steel Tube Co., Pittsburg, Pa., 60—Steel tubing.
Smith Mfg. Co., A. O., Milwaukee, Wis., 6—Gears and parts.
Spicer Universal Joint Co., Plainfield, N. J., 37—Universal joints, magnetos and dynamos.
Splitdorf, C. F., New York City, 49—Timers, distributors, coils and ignition specialties.
Sprague Umbrella Co., Norwalk, O., 4—Tops and windshields.
Swinehart Clincher Tire & Rubber Co., Akron, O., 54—Swinehart tires.
Timken Roller Bearing Axle Co., Canton, O., 29—Bearings and axles.
Valentine & Co., New York City, 11—Varnishes.
Veeder Mfg. Co., Hartford, Conn., 42—Odometers and speed indicators.
Vesta Accumulator Co., Chicago, Ill., 22—Accumulators.
Warner Gear Co., Muncie, Ind., 57—Gears and transmissions.
Warner Instrument Co., Beloit, Wis., 18—Warner auto meter.
Weed Chain Tire Grip Co., New York City, 77—Anti-skid chains.
Wheeler, F. H., Indianapolis, Ind., 21—Schebler carburetters.
Whitney Mfg. Co., Hartford, Conn., 23—Whitney chains and keying systems.

Coliseum Annex—Second Floor.

Ajax-Grieb Rubber Co., New York, 86—Ajax tires.
Avery Portable Lighting Co., Milwaukee, Wis., 118—Gas tanks.
Brandenburg & Co., Chicago, Ill., 146—
Bower Roller Bearing Co., Dayton, O., 148—Bower roller bearings.
Chase Co., L. C., Boston, Mass., 111—Rubber cloth, imitation leather robes.
Connecticut Telephone & Electric Co., Meriden, Conn., 106—Spark coils, switches and ignition specialties.
Continental Caoutchouc Co., New York City, 104 and 121—Continental tires.
Cooks Sons, Adam, New York, 88 B—Lubricants.
Dixon Crucible Co., Joseph, Jersey City, N. J., 87—Graphite lubricants.
Empire Automobile Tire Co., Trenton, N. J., 144—Empire Tires.
Fox Metallic Tire Belt Co., New York City, 116—Anti-skid bands.
Gemmer Mfg. Co., Detroit, Mich., 145—Steering gears and parts.
Globe Machine & Stamping Co., Cleveland, O., 114—Metal stamping specialties.
Gray-Hawley Mfg. Co., Detroit, Mich., 83—Mufflers and exhaust horns.
Ham Mfg. Co., C. T., Rochester, N. Y., 81—Lamps.
Hoffecker Co., The, Boston, Mass., 115—Speedometers.
Limousine Carriage Mfg. Co., Chicago, Ill., 120.—Bodies.
Leather Tire Goods Co., Newton Upper Falls, Mass., 105—Non-skid covers and leather inner tubes.
Michelin Tire Co., Milltown, N. J., 112-113—Michelin tires.
Milwaukee Motor Co., Milwaukee, Wis., 147—
Mosler & Co., A. R., New York City, 82—Spit-Fire spark plugs.
Motz Clincher Tire & Rubber Co., Akron, O., 108—Clincher tires.
National Battery Co., Buffalo, N. Y., 110—Accumulators.
National Coil Co., Lansing, Mich., 88-A—Spark coils.
Pittsfield Spark Coil Co., Dalton, Mass., 119—Ignition systems.
Randall-Faichney Co., Boston, Mass., 117—Oil guns.
Ross Gear & Tool Co., Lafayette, Ind., 88—Gears and tools.
Sager Co., J. H., Rochester, N. Y., 84—Supplementary springs.
Stewart & Clark Mfg. Co., Chicago, Ill., 80—Speedometers.
Whiteley Steel Co., Muncie, Ind., 109—Steel castings.
Witherbee Igniter Co., New York. 107—"Wico" ignition specialties.

Coliseum Basement.

Bosch Magneto Co. Chicago, Ill., 54—Magnetos.
Buda Foundry & Mfg. Co., Chicago, Ill., 55—Jacks.
Burrowes, Co., E. T., Portland, Me., 49—Wind shields and spare wheels.
Champion Ignition Co., Flint, Mich., 48—Ignition systems.
Chicago Recometre Co., Chicago, Ill., 4—Recording devices.
Chicago Wind Shield Co., Chicago, Ill., 43—Wind shields.
Fellwock Auto & Mfg. Co., Evansville, Ind., 42—Bodies, wind shields and tops.
Flentje, Ernest, Cambridge, Mass., 8—Shock preventers.
Fulton & Zinke, Chicago, Ill., 10—Gasolene motors.
Garage Equipment Co., Milwaukee, Wis., 7—Specialties.
High Wheel Auto Parts Co., Muncie, Ind., 47—Parts for motor buggies.
Longdin-Brugger Co., Fond du Lac, Wis., 46—Tops.
Nadall Mfg. Co., Chicago, Ill., 56—Demountable rims.
Norton Co., The, Worcester, Mass., 3—Drill grinders.
Pfanstiehl Electrical Laboratory, North Chicago, Ill., 5—Coils.
Royal Equipment Co., Bridgeport, Conn., 52—Raybestos friction facing.
Sparks, F. E., Chicago, Ill., 37—Supplies.
Triple Action Spring Co., Chicago, Ill., 6—Spring leaves, supplementary springs.
Troy Carriage Sun Shade Co., Troy, O., 41—Wind shields.
20th Century Motor Car Co., South Bend, Ind., 44—Wind shields.
Vanguard Mfg. Co., Joliet, Ill., 50—Wind shields.
Vehicle Top & Supply Co., St. Louis, Mo., 45—Tops.

First Regiment Armory—Gallery.

Arnstein, Eugene, Chicago, 24.—Accessories and supplies.
Austro-American Separator Co., Cleveland, O., 3—Gasolene funnels.
Breakstone, S., Chicago, Ill., 14.—Hand soap.
Central Rubber Co., Chicago, Ill., 8—Tires and rubber goods.
Commercial Battery Electric Co., Chicago, Ill., 10—Storage batteries, magnetos.
Dayton Rubber Co., Dayton, O., 35—Airless tires.
Elite Mfg. Co., Ashland, O., 34—Jacks and pumps.
Ennis Rubber Mfg. Co., Newark, N. J., 28-B—Tires.
Excelsior Supply Co., Chicago, Ill., 28—Batteries, lamps, plugs, lubricants.
High Frequency Ignition Co., Los Angeles, Cal., 31—Ignition systems.
Knight & Co., H. C., Chicago, Ill., 32—
K-W Ignition Co., Cleveland, O., 2—Ignition specialties.
Legnard Bros., Inc., Waukegan, Ill., 15—
London Auto Supply Co., Chicago, Ill., 1 and 2—Tops.
McCanna Mfg. Co., Boston, Mass., 19—Lubricators, oil pumps.
Monitor Mfg. Co., Boston, Mass., 20—Timers and distributers.
Morrison-Ricker Mfg. Co., Grinnell, Ia., 12—Gloves and gauntlets.
Neeley & Co., Edward, Chicago, Ill., 4—Pressure feed lubricators.
Quincy, Manchester, Sargent Co. Plainfield, N. J., 27-B—Auto Cle wrenches.
Rochester Safety Lock Co., Rochester, Ind., 7—Steering locks.
Rochford & Co., Chicago, Ill., 33—Wind shields.
Smith, Fred, Aberdeen, S. D., 30—
Standard Tire Protector Co., Saginaw, Mich., 25—Tire protectors.
Standard Varnish Works, Chicago, Ill., 18—Paints, enamel and varnishes.
Stromberg Motor Devices Co., Chicago, Ill., 16—Carburetters.
Universal Tire Protector Co. Angola, Ind., 36.—Non-skid bands, tire protectors.
Vivax Storage Battery Co., Chicago, Ill., 9—Storage batteries.

The Season of Local Shows.

The season of local shows now being well under way, announcements of these small reproductions of the great national events are constantly coming to notice. Among recent show datings are those of Portland, Ore., and Portland, Me., March 8-13 and February 22-27, being the days set; Baltimore, Md., February 24-27; Providence, R. I., March 1-6; Bangor, Me., February 15-20; San Jose, Cal., February 17-20, and Rochester, N. Y., March 2-6.

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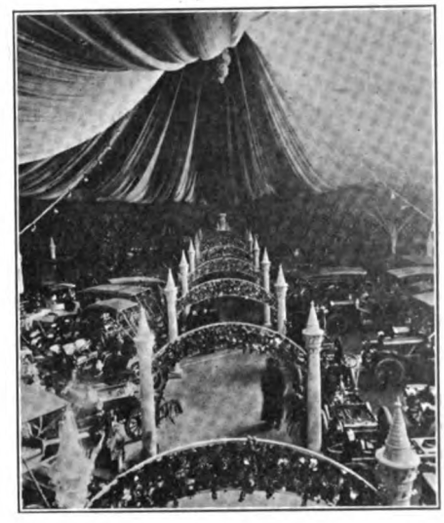
SHOW DAZZLES PHILADELPHIA

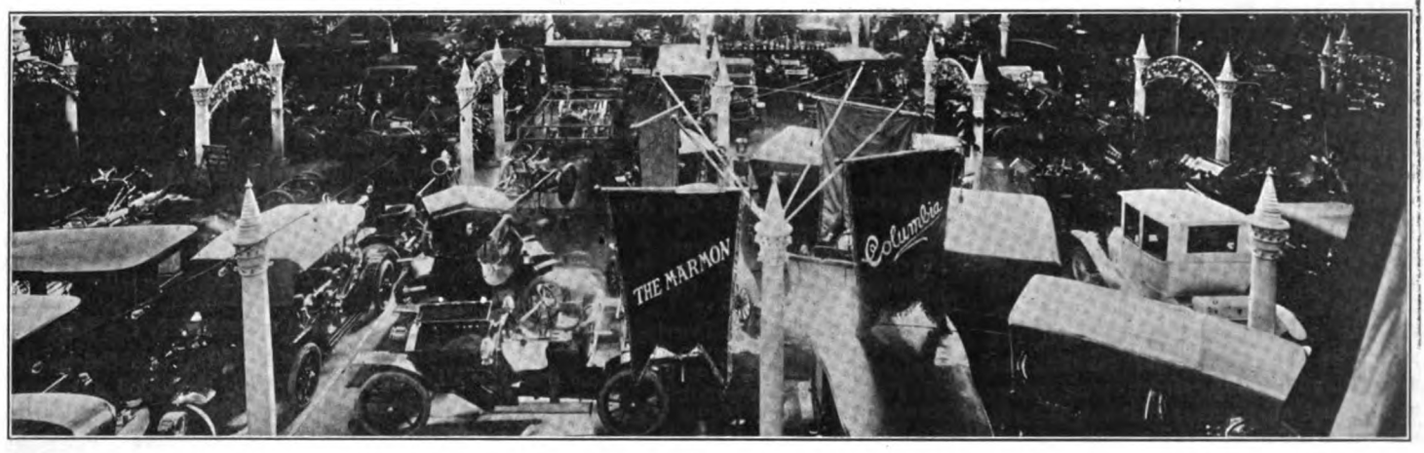
Picturesque Setting the Chief Novelty of the Big Display—Exhibits Include 150 Cars and Many Accessories.

An altogether unprecedented degree of prosperity marked the passage of Philadelphia's eighth annual show, which under the able handling of Manager Beck and his associates ran from Wednesday to Wednesday, Jan. 27th to Feb. 3d. Unusual in its mid-week commencement and ending, staged in a novel manner in a new location and with the additional floor space which the quarters in the Second Regiment Armory made available more than filled, it was a local show which its management well might be proud of. It was not without its embarrassments, however, as was discovered early in the season, when the many eager visitors who had "lotted" on seeing the moving pictures of the Vanderbilt and other famous contests, learned that they were to be deprived of the spectacle. It all came about through the efforts of the management to utilize all the space which the armory provided, for the purposes of the show proper. In consequence of this laudable desire, an adjoining vacant lot was requisitioned for the picture show and a huge circus tent erected. The first difficulty encountered was that of heating the extemporized auditorium to a degree commensurate with the demands of public comfort. The second arose when a high wind wrecked the tent on Tuesday night previous to the opening of the show. When it was found that it would be impossible to secure another which would be guaranteed to withstand the exigencies of winter weather, the idea of a supplementary entertainment under canvas was abandoned.

The circus tent effect was by no means lacking to the show despite this curtailing of its ambitious scheme. Indeed for the purposes of exhibition the interior of the armory itself was given the full semblance of a huge tent by the great masses of bunting which were festooned from the walls to the ceiling, where they were gathered up at the centre in a peak ornamented with a huge sunburst electrolier from which radiated strings of incandescent lamps. The color scheme of cerise and Nile green was effective—to say the least. The vivid background which it formed was somewhat toned down by the detail of the floor setting, however. This consisted in the marking off of the main aisle with a series of white pillars connected by arches over whch the golden grapes in plenty trailed in theatrical profusion, while at the posts which marked the separation between the various booths were other white posts, from which radiated light staves as from the ordinary back-yard variety of clothes pole. In this particular instance, the "wash" hung out to air comprised a series of very ornamental banners bearing in letters plain the names of the exhibitors.







VIEWS SHOWING THE NOVEL ADORNMENT OF THE SECOND REGIMENT ARMORY FOR THE PHILADELPHIA SHOW

As a show, there was practically nothing on view not already seen at one or the other of the two great shows of the season held in New York. Even the brilliant array of prize cups and other trophies, which figured at the Palace and Garden, were not lacking, and they made their mark with the visitors too. The floor space was divided into 39 spaces, while other exhibits were ranged about the walls and in the various ante-rooms of the building. The 60 different exhibits included no less than 150 cars, some 40 or more being gasolene, 5 steam and 2 electric. A dozen accessories stands were tucked away in convenient locations, while a lively corner of the show was given over to the display of motorcycles.

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SHOW WEEK STIRS LOS ANGELES

Historical Pageant Precedes Opening—Nearly 100 Cars Brilliantly Staged Amid Elaborate Decorations.

Preceded by a lengthy parade which took twenty minutes to pass a given point, one which was supposed to denote the progress of transportation methods in America, Los Angeles's second annual automobile show was inaugurated with considerable pomp on Saturday evening, 23d ult. The doors of the big Hamburger building, where this year's exhibition held forth, did not open until the evening, the gigantic parade being the afternoon's "curtain raiser." The show continued all the week.

Headed by Show Manager Ferris, the procession traversed the principal streets of the city, and its novelty was such that it was little wonder that the show was crowded soon after the doors opened Saturday night. First in the line of march was a brass band, followed by a tribe of Indians on horseback to denote the method of transportation employed by the aboriginal tribes of North America. Next in the line of procession came an old canvas topped prairie schooner, followed by the historic Banning stagecoach, and an interesting array of old-time surreys, "democrats" and other early forms of horse-drawn vehicles. Several bicycles intervened between the horse vehicles and the section of automobiles, both of old and modern types, a presentation of an important phase in the evolution of the horseless vehicle which was fully appreciated by those who watched the pageant.

The show proper opened with the usual speech by Mayor Harper. Although in beauty and in the magnitude of exhibits this year's Los Angeles show far surpasses the exhibition of a year ago, the basement of the Hamburger building, at Broadway and Eighth street, was inadequate to house all the cars that might have been shown. Because they could not secure sufficient space several agencies held private shows in their salesrooms, among them being the Schwaebe-Atkinson Motor Co., with the Premier; the Big Four Automobile Co., representatives of the Marmon, Regal and Rapid, and the Renton Motor Car Co., agents for the Overland and Great Smith.

The decorating scheme was upon a far more elaborate scale than last year and completely disguised all evidence of the fact that the exhibition was held in the basement of the Hamburger building. The walls were lined with stucco work, embossed in winged automobile wheels, chauffeurs and chauffeuses in costume, automobiles and other appropriate designs, while white pillars, topped with large frosted globes, and festooned with natural greens divided the large hall into exhibition spaces. The floor was carpeted in green, while 12,000 frosted incandescent bulbs were deftly concealed in the ceiling and among the greenery. A great shell supported by urns was over the entrance to the facade, and over the latter an immense conchoidal, the interior of which was finished to represent the interior of an abalone shell, studded with vari-colored lights. At the foot of the stairs leading into the exhibition hall was an electric fountain, a lighting arrangement beneath a glass pyramid, giving the water the appearance of being on fire.

Of the 99 cars shown 92 were fully equipped for the road, the remainder being chassis. Of the total number 90 were gasolene cars; seven had electric power, and two—the White—use steam as the motive power. Accessories as shown by local agents and jobbers were in the usual generous proportions. The exhibitors of complete cars were as follows:

Auto Vehicle Co., Tourists, Reo and Kissel Kar.
Thomas Motor Car Co., Thomas Flyer.
H. O. Harrison, Peerless, Oldsmobile and Apperson.
Western Motor Car Co., Packard, Stevens-Duryea and Chalmers-Detroit.
W. F. Bush, Pierce-Arrow.
Buick Motor Car Co., Buick.
White Garage, White.
Maxwell-Briscoe Motor Co., Maxwell.
Standard Motor Car Co., Ford.
American Berliet Locomotive Co., American Locomotive.
Lord Motor Car Co., Studebaker and E-M-F.
Woodill Automobile Co., Haynes and Oakland.
Lee Motor Car Co., Cadillac.
W. R. Ruess Motor Car Co., Pope-Hartford.
W. K. Cowan, Rambler.
Lozier Motor Car Co., Lozier.
American Motor Car Co., American Traveler.
Duro Mfg. Co., Durocar.
Gregory Automobile Co., Moline.
Elmore Motor Car Co., Elmore and Baker.
William Bosbyshell, Dorris.
Roy Forsythe, Auburn.
Ralph C. Hamlin, Franklin.
R. H. Leavitt, Locomobile.
Stoddard-Dayton Motor Car Co., Stoddard-Dayton.
Charles H. Thompson, Jackson.
Greer-Robbins Co., Mitchell.

Private Shows in Chicago Auditorium.

Space limitations in connection with the allotment of locations to those desiring to exhibit at Chicago, have resulted this year as in the past, in the crowding out of one or two late applicants, with the result that they have had recourse to the establishment of "private" shows of their own. In this particular instance the hospitality of the Auditorium has been called upon to house two of them, and the many visitors at the show in the Coliseum who also patronize that spacious hostelry, will have ample opportunity to study the construction of the Columbia and Palmer & Singer cars, which thus will be displayed under exceptionally favorable circumstances.

CINCINNATI FLOCKS TO THE SHOW

Second Annual Exhibition Proves a Social Magnet—Many Well Known Cars Amid White and Gold Settings.

Cincinnati's second annual automobile show, which closed in the First Regiment armory Saturday last 30th ult. was responsible for many wearwell smiles that graced the streets of the Queen City this week. In fact, this year's show made last year's record of both actual and prospective sales appear insignificant in comparison. The Cincinnati Automobile Dealers' Association, under whose auspices the exhibition was held had decorated the immense drill hall lavishly, white and gold being the color scheme, and the armory was made the rendezvous for society, besides the object of attraction for many out-of-town dealers, with whom considerable business was transacted. Among the exhibitors were the following:

White Steamer Co., White; Jungclas Automobile Co., Mitchell; Cincinnati Automobile Co., Peerless, Pope-Hartford and Winton; Croethers Automobile Co. Royal Tourist and Elmore; George C. Miller Sons' Co., Stevens-Duryea; Hanauer Auto Co., Locomobile, Pierce Great Arrow and Corbin; J. H. Ratliffe Automobile Co., Chalmers-Detroit; Oldsmobile Co., Oldsmobile; Merchants' Garage Co.; Queen City Auto Co.; Stevens Automobile Co. Sid Black Automobile Co., Thomas, Franklin, Detroit, Electric and E-M-F.; Evanston Automobile Co.; Miami Vulcanizing Co.; American Motor Car Co.; Churcher Electric Co.; Coughlin-Davis Co.; Dealers Auto Supply Co.; F. J. Engert, and Special Motor Vehicle Co., Premier, Marion, Atlas and Maxwell.

Paris Salon a Possibility for 1909.

There may be a 1909 Paris Salon after all, despite the widely heralded agreement between a number of the more prominent French makers to the contrary. According to press despatches received this week, it appears that the notorious agreement, which was supposed to carry a heavy penalty for any party to it who should venture to display his product at the French capital before July, 1910, contained a joker clause in the shape of a proviso to the effect that it could be abrogated in case the English manufacturers could not be induced to follow suit. It is further understood that the committee of the Automobile Club of France is going ahead in expectation of holding the Salon next year as usual. All of which being so, it would further appear that the French manufacturers have succeeded in placing themselves in the enviable position of being able to show or not as they may see fit when it comes case in hand, and of standing on their dignity or as much of it as they can command, in either event.

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THE PARTS MAKER

His Influence and the Responsibilities It Involves

Standardization, duplication, specialization. These three elements in the development of production are the stepping stones which lead to the goal of the excellent, low-priced and popular product. Because any single part of a machine can be produced better and more economically if made in quantities than if evolved by individual labor, and because these advantages accrue with the increasing adoption of automatic mechanical processes, the tendency of any industry is to concentrate upon the assemblage of interchangeable units which are applicable to a wide variety of purposes. Because the limits of specialization cannot be accomplished with the highest degree of success by the producer of the finished article, the tendency to concentration in time gives rise to the specialist in the production of components who forms an added link in the chain which stretches between the raw material and the finished product.

In any industry, these parts specialists constitute a powerful factor of industrial economy. But the danger that their function may be abused constitutes a huge menace to prosperity and to progress. According to circumstances, they exert either an elevating or a depressing influence on the industry. More truly than is generally appreciated, they exercise a guiding function in shaping the strength of the business to which they are allied.

Position of the Parts Maker.

Because of the complex nature of the automobile, the position of the parts maker has become particularly strong in this industry. Not only this, but the extremely rapid and impulsive growth which has characterized it has created a demand for finished components which is much greater, relatively speaking, than that of other lines. In consequence, the parts maker is to-day, one of the mightiest elements in the business of motor car production.

Upon the parts maker rests the burden of choosing whther his product shall be disposed of merely as so much stock merchandise, to be utilized by the purchaser as he may see fit, or whether it shall be employed in such a way as to insure reliability to itself and to the aggregation of which it is an integer. His responsibilities may be considered to go further than the details attendant upon the fabrication of the parts and the development of uniform quality and quantity adequate to the demand. They may be held to reach out into the shops of the assembler—the final producer—and require the placing of parts that are not simply up to the standard of uniform production, but which are suitable in every way for the purpose to which they are to be devoted.

This principle, of course, applies not merely to complete organs like axles, change speed gears, motors and ignition apparatus, but also to the smaller parts, such as bolts, rods, fittings, and minor attachments. Where simplicity and universality of application have made possible the acceptance of a general system of standardization, as is true in general of the smaller units as the test, the only opportunity of affecting the quality of the finished product lies in the choice of materials and, occasionally, in the thoroughness with which heat treatment may be carried out. But in the more complicated parts, such as the complete units, it is not sufficient to produce a good part, well designed, thoroughly built and properly put together. It must be assembled only in machines of such size that it is certain to be suitable for the work assigned to it.

Aspects of Quantity Product.

Whatever the origin or class of the parts maker, the tendency always is to quantity production, not only because big volumes mean extended profits, but because production costs are reduced as the turnover is increased. The successful parts maker is not simply a specialist in design, he is a specialist in construction. Beginning with a leverage on the market which may depend upon proprietary rights or upon geographical or mechanical advantage, continued experience develops a special aptitude in the performance of the limited series of operations which are involved in producing a small number of similar articles. The greater the number of parts produced, the better they may be made and also, the lower their actual cost.

Many familiar examples in plain arithmatic teach that where the tool cost on a certain job is $10,000, the pro rata charge on each of 100 pieces is $100; on each 1,000 it is $10; on each of 10,000, it is $1.

Thus with the increase in the number of duplicate parts produced, the only important variable item in the producing cost is proportionately sub-divided, and it goes on being spread out thinner and thinner to the ultimate limiting point, which is the life of the tools. Under ordinary circumstances, however, this is prolonged sufficiently so that the manufacturing cost continues to be reduced just as long as there is a demand for a given model. The attractions which a growing market for his wares holds out to the parts maker are thus very great, and the temptation to adopt the policy of building on a quantity basis alone, tremendous. Furthermore, as increases in quantity involve reduction in costs, the producer of large outputs is enabled to improve the quality of his product in precision as well as in general uniformity by the installation of improved machinery and tools.

It does not invariably follow, however, that the maker is willing to take advantage of the opportunity offered by a growing market to increase its quality or—what is of equal importance—to assure himself of its suitability for the work for which it is employed. Quantity production means cheapening the processes of manufacture. Cheapening in one direction, may, however, tempt him to cheapen in others; to reducing the quality of the materials employed, reducing weight, eliminating steps in the process of manufacture which may appear to be non-essential and finally in increasing the scope of the product's use without fortifying it properly to meet the additional requirements.

While thoretically multiplying the product may tend to improve it, it may, on the contrary, open the door to shoddy work and degeneration to a state of absolute unreliability. This is the great danger against which the thoughtful parts maker guards as against his own ruin. But perhaps a greater danger is that of attempting to accomplish too much with a single design. This danger is all the greater because the use of the parts is not entirely in his control, and because of the temptation to dispose of his product on a catalogue rating, leaving it to the assembler to determine how closely it fits his own requirements, and how well suited it is for his purposes.

Dangers of Multiplied Product.

A stock rear axle, for example, may be rated for horsepower up to 30, and may be of excellent design. In making the rating, the assumption is that the assembler will not design his car in such a way as to throw an excessive amount of weight on the rear, simply because that would throw more work upon the motor than it could comfortably handle. In the hands of experienced designers, therefore, the stock article is fairly safe with even so general a rating as this. But in the hands of a new maker, it may be overloaded, or equipped with improper spring suspension, or abused in any one of a number of other possible ways. The inevitable result of such treatment must be more or less unsatisfactory performance, and this, in turn, must reflect discreditably not simply on the faulty con-

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struction of that particular machine and upon its maker, but also upon the entire product of the parts maker himself. As a result of improper installation in a single type of car, the reputation of that particular part may be jeopardized for all purposes and for all machines, even though in itself it may be well suited to the restricted purpose for which it was originally calculated.

The danger from improper use of otherwise valuable parts, however, is not confined to the careless or ignorant assembler. The advantages of multiple production appeal so strongly to the parts maker, that he is tempted strongly at times to increase the scope of his product by broadening its application. While with suitable methods of standardization this may be possible to a very wide degree, the over-eager parts maker may be led into the error of vending parts for uses to which he may be reasonably certain they will never properly apply. The careless parts maker is thus as great a menace to the industry at large as is the careless assembler to the parts maker. It is possible to double the output on a certain part by increasing the range of its nominal applicability. At the same time, unless the material is capable of withstanding all the stresses which it is possible to foresee, the advantages of the increased income from extra sales are liable to be offset by a corresponding loss in prestige when the product shall have seen a season or so of actual service.

The Maintenance of Prestige.

This evil, it lies within the power of the parts maker himself to forefend. With close attention to the field and a systematic method of administration in the sales department, it is possible to safeguard the product from abuse at the hands of the assembler, and this a number of stronger and better-equipped firms in the industry are now doing. Furthermore, that this method of handling the parts business has its own reward in upbuilding a solid reputation for the product is well illustrated in a number of typical instances where the maker is at some pains to watch the manner in which the product is handled after leaving his factory.

To take a remote instance, it is comparatively well known that the fame of the Lemoine axles which have figured for so long in French motor car practice, is attributable to the fact of their extreme reliability in service. That that reliability is due almost as much to the fact that the makers refuse to sell their parts without knowing exactly where and under what circumstances they are to be mounted, as to the excellence of the material employed, is not so generally appreciated. As a matter of fact, however, the would-be purchaser of these parts must assure the maker that his specifications are such as to suit the requirements of the product, before his order is accepted.

Similarly, a well-known American firm which caters exclusively to the assembling trade, producing no finished vehicles itself, issues a blank form of specification on request for quotations, which none but a competent engineer can fill satisfactorily. Furthermore, it is only upon receipt of these complete specifications of the machine including such apparently insignificant points as the sizes and types of the tires to be employed, the rates of vehicle speed contemplated and the general mechanical details of the chassis, that prices are issued. Then quotations are given for a certain equipment which is guaranteed satisfactory, only when employed under the conditions originally laid down.

In another instance, the importer and manufacturer of a line of fittings which enjoy wide use, insists upon seeing blue prints of the installation before coming to terms of sale, and further checks up all load strains and himself determines upon the sizes of his parts which are to be used before permitting a single shipment to be made.

Advantageous to all Concerned.

The advantages of such methods require no exposition. When the purchaser in addition to receiving a product whose maker he knows will stand back of it at all times, has the benefit of his advice in consultation, obtains his broad criticism of design, and finally is assured of as careful supervision in the production of the parts as is exercised in their sale, he gains a degree of confidence in his own product, be it wholly or only partially assembled, which enables him to do much more with it than if it were put together under slipshod and careless methods. Indeed, the very service of parts makers of this stamp to the assembler are well worth the high price which sometimes is asked by them for the partial product.

The term assembler is here used advisedly as applying alike to the maker who builds little or nothing of his car, or to him who actually produces 80 or 90 per cent. of it, but reasons that there is economy in buying certain components direct from a specialist. This latter class may be made to include practically all of the better known makers of high grade cars, and because of their success, the use of the term should carry no reproach. That the influence of the parts maker thus is felt in practically every automobile factory in the country is apparent. That it works no discredit to the finished car where both partial and final producer are actuated by a desire to follow only the lines of the best practice, is only sufficient evidence that the parts industry may be used to the upbuilding of the industry as a whole if properly guided.

Parts Maker's Influence Broad.

Indeed there is not a single branch of the industry which is not under dominion of the parts maker, and subject to his influence, be it good or band. In those instances where parts are sold on the open plan of a stock rating by power or weight of car for which they are adapted, the responsibility for their use, of course, rests solely with the purchaser. It is not the fault of the producer if the parts fail to come up to the expected requirements, when misused or misapplied. At the same time, the parts producer who continues to manufacture components, knowing that they may be subject to abuse at the hands of the purchaser, is working his own undoing. Even the machinist who builds merely to the specification of the car maker has it in his power to govern the use and in some cases even the design of the component to a certain extent and thus is a factor in the shaping of the final product.

The extent of this influence is not limited by the mere strength and suitability of the mechanical parts of the machine, but reaches out into the moulding of even the externals of the cars to a surprising degree. Trends observable from year to year in the changing shapes of mud guards, radiators, springs, tops and equipment in general are traceable directly to the activities of the specialists in those lines. The mystery of how a dozen makers may hit upon practically the same pattern in any of these particulars at practically the same time, becomes no mystery at all, but merely an example of creditable enterprise on the part of the manufacturers of components, when it is seen that these as well as other parts are purchased ready-made. Nor is the fact any reflection on the enterprise of the makers of the cars, since in many cases the result is even more successful and attractive than if the details had been wrought out by the factory designer. It is a happy circumstance that the parts maker, from his intimate knowledge of the problems affecting that particular part and his association with a large number of car manufacturers, acquires a breadth of appreciation which could be attained by no man compelled to cover the entire field of car design from his limited coign of vantage behind a drawing bench.

Some Present Tendencies.

Always, the parts makers are the exponents of progress in the industry, as of economy in its administration. Always their influence is manifest in practically all its ramifications, and always it works toward the advancement or retardation of the product from the standpoint of serviceability, according to whether the parts industry is governed by motives of straightforward business acumen or simple indifference to results. Just now its influence is particularly strong, as the production of low and medium priced cars is increasing, and with it the requirement of parts production on a large and economical scale. On this account the outlook for the producer of components is particularly bright, but his opportunity for influencing the quality as well as the quantity of the total output of cars is equally important.

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DEVELOPMENT IN CHANGE GEARS

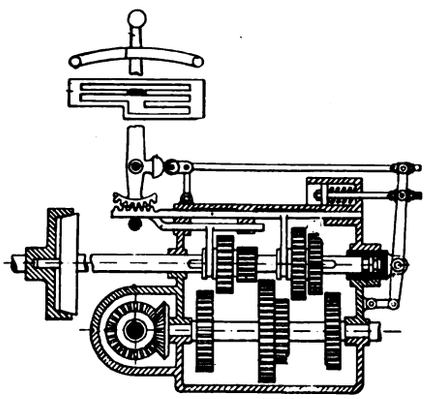
Perhaps because the average motorist regards what is popularly known as the gear box as the transmission, and all the transmission there is in his car, he is unable to appreciate the difficulties attendant upon transmission design nor to recognize the advances which have been made in that puzzling subdivision of the evolution of the motor car. Frequently though the attempt has been made, it appears to be a practical impossibility to teach the man in the street that the term transmission includes the entire mechanism which connects the motor and the driving wheels, and all that is in any way involved in the communication of power between the source and its point of application. Nevertheless thus is the transmission defined, and when so considered, the crudest devices in present use are made to appear wonderfully successful, more especially when it is understood that they are called upon to perform a most intricate and trying function.

From the very earliest attempts at mechanizing the road vehicle, the question of varying the speed of the driving wheels at the absolute option of the operator was recognized as of almost as great importance as that of starting and stopping ability. With the steam-driven vehicle, this problem worked itself out readily enough. Where the internal combustion motor was involved, however, it was a very different matter. Consequently the problem then, as it does even in the present advanced stages of the art, presented one of the most difficult studies the designer has had to face.

The most elementary form of transmission mechanism available to the early constructors was the plain belt running over a pair of pulleys and tensioned by means of an idler held against the slack side by means of an arm. Varying the position of the arm, naturally varied the speed of the driven pulley within limits, because of the alteration in the belt tension. Releasing the tension to its limits, naturally provided means for stopping the vehicle whenever that might be required.

In the early Benz vehicles this plan was utilized, refinements adopted in these and their successors of other makes, including the use of stepped pulleys and so of varying ratios; numerous intricate systems of control, and finally, as the use of the belt alone began to be more or less deplored, even the use of spur and bevel gears arranged to be clutched or clashed together to produce varying speeds, but still with a belt as the main driving connector.

It must be borne in mind that the transmission change speed gear was clearly an innovation brought about by the adoption of the internal combustion engine. Cugno's steam vehicle—the earliest motor car of which there is authentic record—was driven directly, and others of the steam type also had more or less direct, but always inflexible connections between the prime mover and the wheels. On this account its development proceeded pretty closely along



EARLY DAIMLER PATTERN

the lines of that of the gas engine as applied to automobile construction. In the early days, no divisional units were recognized and every part of each machine was built directly into the machine itself. Furthermore, as the pioneer constructors worked quite independently at first, there were as many different transmission systems on the early cars as there were motors, and as many different types of motor as there were cars.

It should here be noted that Gottlieb Daimler, whose success in building the first really successful type of high speed motor in connection with his experiments in automobile construction, also was indirectly responsible for the evolution of the first known example of the type of change gear to follow the general lines now accepted as common practice. Indeed, the early Cannstadt-Daimler transmission went a step further than to do the transmissions of the day in that it permitted absolute, single lever control together with selective operation of the gearset.

The general arrangement of the gearset, which is shown in the accompanying illustration, was that of a plain cone clutch driving a splined shaft on which were mounted two sliding sets of two gears each. The gears on the lay shaft below were fixed, and drove the countershaft through bevel pinions. Final transmission was through side chains after the fashion which later became universal. The method of actuating the gears was peculiar in that the movement of the gear shifting lever caused the clutch to be unseated whenever the lever was brought into the central or neutral position, the movement being brought about by means of a cam fixed to the lever and actuating a rod through which a rocker arm was made to pull the entire clutch shaft backward bodily and away from the fly wheel. By moving the lever transversely and drawing it into one or another of the three slots in the segment, a rack on the lower end of the lever was made to select the proper pull-out rod in order to mesh the desired sets of gears.

The method of clutch construction was the same as that later employed on the Panhard-Levassor cars, and continued up to within a very few years. As in the Daimler gearset, this system involved the use of the plain cone clutch, the lay shaft being below the driving shaft and transmitting movement directly to the countershaft. The Panhard type, however, instead of employing the two sliding sets, was progressive. That is to say four gears were grouped in a single unit, their diameters being so contrived that they meshed successively with their mates as the group was moved along its shaft. In this, then, the prototype of the second type of change gear in present use was developed.

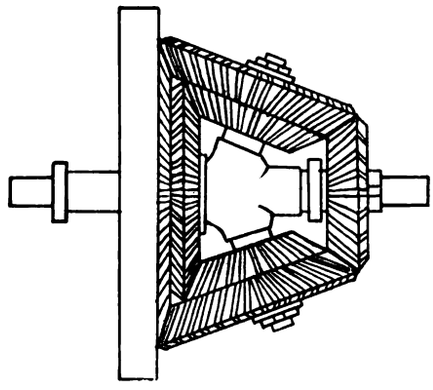
The line of evolution to the present day systems was not as direct as might be imagained from this superficial review, however. It has been observed that each of the early constructors worked pretty much alone. Therefore the automobile had long ceased to have been an experiment in the fullest sense of the word, before the process of borrowing ideas which in polite language is called standardization began to gather

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headway. From the primitive belt, designers branched off in every conceivable direction, and to attempt to follow their eccentricities would in no sense be a means of tracing the development of transmission systems, however diverting it might prove. With a very few exceptions the earlier forms came to be merged in one of the two types already outlined. But here and there an idea cropped up which later became embodied in these same types and which led directly toward the styles in present use.

Thus as far back as 1898 appeared the Humpage epicycloidal gear in which a nest of bevel gears mounted on a central carrier member, were made to revolve about the axis common to two sets of bevels which faced one another but were mounted on the ends of independent shafts. The aggregation resembled the present form of bevel differential gear except that the floating pinions were not mounted at right angles to the main line of shafting. By applying a brake to a floating ring which was driven by the bevel pinions the nest was made to rotate about its axis, while the revolution of the pinions themselves caused the driven shaft to be actuated at a different rate of speed from that taken by the driver. Thus was conceived and put into operation the first recognizable type of planetary gear. Its development since that period has resulted in the use of spur instead of bevel members, and in a multitude of minor refinements which have not in the least altered the principle which was in the vision of the original inventor.

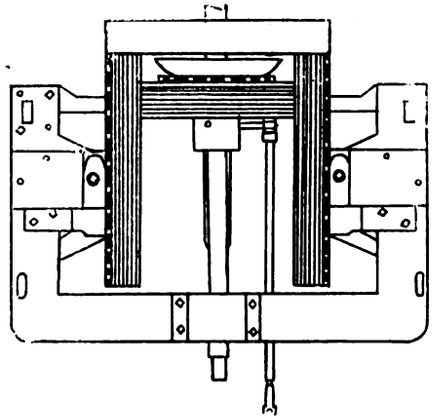
Another land mark in the late 90's was the construction of the DeDion voiturette, in which the single cylinder vertical engine was mounted under the rear seat while transmission was accomplished through short shafts running, one to either rear wheel and coupled through two universal joints. In this machine, crude as it was, appeared the first properly constituted rear axle drive of the floating type, and also the first system in which the change speed gear was incorporated directly in the driving mechanism at that point. Though the principle of the floating drive was here put into successful operation, it was not until some years later that the first of the true live axle constructions came into vogue, and



HUMPAGE EPICYCLOIDAL

then in the form of the revolving axle which was only superceded by the semi-floating methods of drive in the later developments which have taken its place during the past decade.

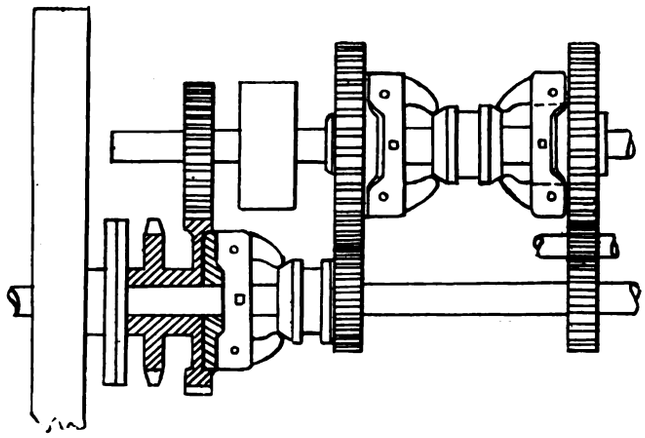
Another principle utilized in the early De-Dions which later found considerable favor with designers abroad, and also in America,



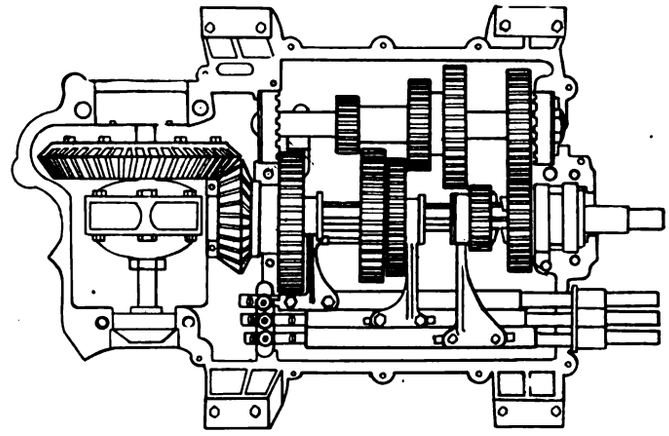
FRICTION DISC TYPE

was that of the individual clutch. The clutches employed in the type in question were of the expanding ring type, actuated by worm connections. This form, together with the plain cone, were most in use up to 1900, when other developments began to appear. With the beginning of the discussion of the relative merits of single and multiple clutches which later waxed so strong, the study of the clutch problem received an amount of attention which none of the designers had had liesure to give it up to that time.

In the early Haynes models which were the most successful of their immediate period were a series of stepped gears, each gear in one of the two intermeshing banks containing a clutch operated by means of a sliding key telescoped within the shaft. In the Winton car, however, which was in successful use for many years, another principle appeared as applied to the high speed member, in which two flat surfaces were pressed together with great force through the medium of toggle joints, the resulting friction effecting the desired driving relation. In this system may be discerned a logical forerunner of the plate clutch, and also of the multiple disc type, although the latter system was of foreign origin and is of later growth.



WINTON INDIVIDUAL CLUTCH



MODERN SELECTIVE TYPE

The sliding pinion method of change gear having been firmly established, and clutch design having been pretty well standardized, methods of mounting in the frame and of connecting the change gear group to the driving wheels began to be considered more seriously than before. The true shaft drive did not make its appearance until 1901 or 1902 and is therefore a comparatively recent development. As was the case with so many other systems which have since become crystalized into current practice, it was a foreign innovation and a legitimate successor of other systems—notably that of the old, belt-driven DeDietrich, in which a sliding change gear and bevel drive with shaft connection had been used for each of the driving wheels.

Change gear mechanisms in the early cars were found in almost every conceivable place from the fore part of the vehicle to the very rear where, as in the case of the DeDietrich system just referred to, the entire mechanism was mounted on an over-

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hanging support at the rear of the car. With the beginning of the period of standardization, however, the central mounting came into favor, following the lead of the Panhard and Daimler builders, and with it the use of the sub frame for carrying engine and change gear groups became prevalent. In order to secure a proper length of driving chain, the position of the countershaft with respect to the back axle was relatively fixed, so that in machines of very long wheel base, it was sometimes necessary to separate the change gear and differential mechanisms. In other cases the same effect was secured by placing the entire group well to the rear and neatly concealing it under the body.

The introduction of the three-point suspension principle followed rapidly upon the conviction taking root that it was impossible to safeguard the entire chassis against weaving when in service, and with this, the idea of the unit mounting for the plant rapidly came into vogue. First the engine and change gear groups were kept independent and mounted on a sub frame which was distinctly intended to yield to frame movements without straining the parts which it carried. Later the principle of the complete unit was evolved.

Paralleling this development, and of a degree of importance which is unquestionable, came the introduction into general use of the axle-mounted change gear which was first successfully employed in this country during the year 1903, or thereabouts, and which has since been granted a continually increasing use in this country, though abroad it is still but little known save on American cars.

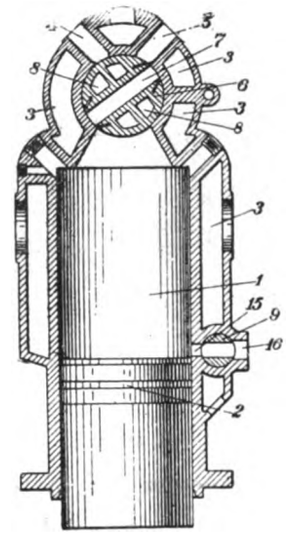
On the supposition that mechanical development of any sort must lead to a single ultimate conclusion where a given purpose is to be served, it appears that the development of the automobile tranmission must proceed further along one of four lines, or upon all of them, should it come to be considered that no single system is applicable to every type of motor vehicle. The four systems which may be considered as still in rivalry are the side chain and shaft drives; and the engine mounted and axle mounted change gear. In each case, cars are to be found which are built according to the best accepted practice in all other respects.

Still another system, which though successful in the products of a few makers is regarded with more or less suspicion by others, is the friction type, in which use is made of pure rolling contact instead of tooth contact as in the more familiar patterns. This is an altogether recent development along ideal lines, which has been questioned because, like all other mechanical novelties, it presents a host of unforeseen difficulties. As yet, its acceptance has not become sufficiently general to warrant its classification as a rival of the geared systems, though in many quarters it is regarded as likely to supplant them in time.

EVOLVING THE ROTARY ENGINE

Application of the Principle in the Frayer-Howard System of Valve Construction —The Patent Specifications.

It is a remarkable fact that despite the great amount of attention which already has been given the subject no thoroughly practical type of internal combustion motor having rotary valve construction has yet been put upon the market. Nevertheless, numerous efforts have been made in this direction, and it is known that more than one motor car builder has his eye upon designs which he is eager to put before the public



FRAYER-HOWARD ROTARY VALVES

so soon as they shall have been proven practicable in the ordinary run of test practice. In this connection it is noteworthy that patents have been granted recently on a rotary valve construction which embodies at once a combined inlet and exhaust member operating in the cylinder head, and a supplementary exhaust port in the cylinder wall at the lower end of the piston stroke, regulation of the opening of this port also being accomplished by means of a rotary valve. The fact that the patents have been issued to Lee A. Frayer and Charles O. Howard, of Columbus O., gives some inkling as to what direction may be looked toward in expectation of possible future developments in this line

The construction involved is made plain by the accompanying illustration taken from the patent specifications and showing the arrangement called for in the second of the two patents mentioned, in which the principle of the rotary auxiliary exhaust valve is protected. The arrangement of the head end and ports is practically the same as in the first patent, and the principle of distribution involved is precisely the same. As will be observed from the picture the valve member forms a complete obstruction for both intake and exhaust ports, a diametrical port in the rotary part being arranged to register in turn with the cylinder head and one of the ports, a bridge between them and the other of the ports successively, in the course of each half revolution. The ports being arranged at an angle to the axis of the cylinder, it follows that the amount of angular movement of the valve in order to accomplish the distribution involved in the complete cycle is very small. Thus, 1 is the cylinder. 2 the piston, 3 the water jacket, 4 the intake port, 5 the exhaust port, 6 the valve proper having the open diametrical port, 7, and the cooling spaces, 8, for which provision is made in one of the claims allowed. The auxiliary outlet for the exhaust gases is provided at 15. where the valve 9 is made to register with the opening in the port twice for each revolution thus permitting the discharge of the waste products of combustion through the outlet 16, as shown.

While complete details of the method of safe-guarding against the escape of the gases at the ends of the valve are not given, it is specified that the valve is journaled adjacent to its ends in such a manner that it is kept out of contact with the walls of the valve chamber. It is further provided that suitable packing rings be mounted on the valve adjacent to the port for the prevention of leakage.

The patents, which are numbered 908,656 and 908,657, respectively, were filed September 12, 1907, and August 31, 1908, and were assigned, the former fully and the latter in one-third amount, to Moses W. Kouns, of Columbus. They were issued simultaneously under date of January 5, 1909.

The rotary principle always has been looked upon as the simplest conceivable method of controlling both inlet and exhaust movements of the cylinder gases with a single valve member. As presenting a simplification of the valve mechanism with but slight increase in the complication of the cylinder casting, it is a development very much to be desired were it possible to obtain it in practical form. Against the advantages which it brings, however, the designer must wrestle with the two problems of preventing leakage of the gases without at the same time imposing an undue amount of friction on the valve mechanism, and of providing adequate cooling means so that the valve shall not tend to clog itself under the influence of the high temperature in which it is forced to work. Hitherto these difficulties have proved more than the practical manufacturer cared to undertake in a design which was to be put into the hands of careless and inexperienced users

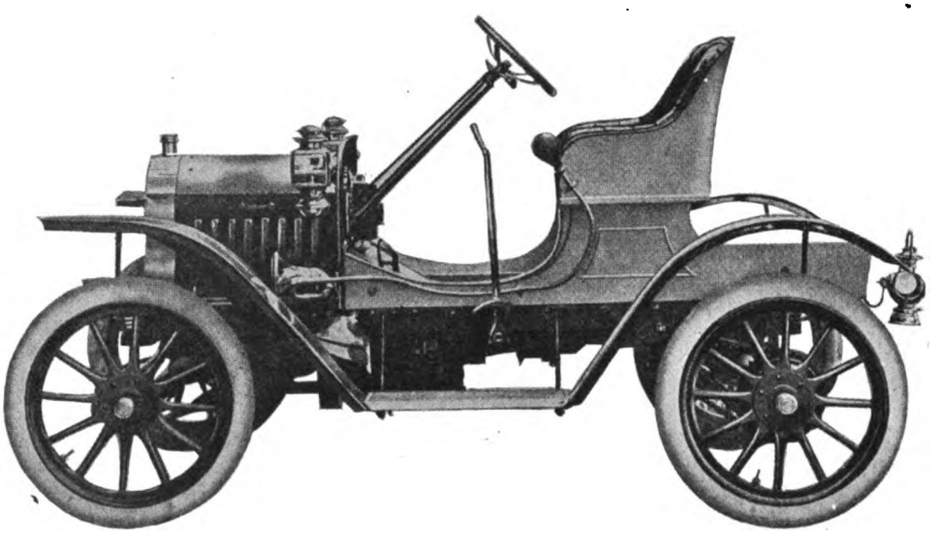
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For remedying leaks in stuffing boxes of water pumps, asbestos string well coated with black lead will give excellent results. It will remain water tight longer than any other packing, insuring freedom from a leaking pump, and frequent renewal of the stuffing box packing.

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Brush Runabout

$500——$550



The excellence of a car lies in how well it runs.

How well it runs is determined by *its design* and *the way it is made.*

The Brush is *well designed.* Brush did it. All of Brush's work has not only been successful, but has been particularly remarkable for durability and simplicity. That Brush in designing this car was two years ahead of the times is now shown by the fact that most of the biggest and most reliable French makers are this year showing models that look like plagiarism from the Brush Runabout, only less graceful in appearance and less thoroughly worked out.

The Brush is *well made.* For liberality of bearings, excellence of materials, fineness of limits and general carefulness in both work and material, we doubt that any car made excels the Brush.

Because of all these things, *the Brush Runabout runs well.*

That it *does run well* is learned not only from such things as the transcontinental trip, but more especially from the testimony of owners. Ask them.

One town of 1200 inhabitants has taken 22 cars since August. A western dealer who contracted for 100 cars in September for the coming year has already taken 51 of them. Another dealer who contracted for 200 cars in August has so far had 85.

From the standpoint of both owner and dealer, isn't this the kind of car to tie up to?

BRUSH RUNABOUT CO., Detroit, Mich.

Members A. M. C. M. A.

N. B.—See the Transcontinental Brush at the Chicago Show

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SMITH CONQUERS SNOW AND ICE

Marvelous Performance by Sole Survivor of Hartford-Pittsfield-Hartford Run—Four Daring Rivals Fail to Finish.

It is not likely that there will be any protest over the award of two cups to Ben Smith for covering 156 miles of snow and ice covered roads in Connecticut and Massachusetts on Thursday last, 28th ult., in a Mitchell roadster. Smith was the sole survivor of the endurance run from Hartford to Pittsfield and return via Springfield, promoted by a local newspaper with apparent small regard for human life. That every driver in the race was not killed or maimed was neither the fault of the promotors nor of the treacherous roads. Despite the fact that it was one of the most fatuous mid-winter contest ever promoted it does not, however, detract from the glory of Smith and his mechanician for guiding their sturdy car over well nigh impassable roads with death traps lurking at every turn. That any of the five starters managed to finish is marvelous.

Five drivers, in charge of as many cars, dabbled with death by starting from Hartford at 7 o'clock Thursday morning last, 28th inst. They were Lieutenant Herbert S. King, Maxwell; J. F. Humphreys, Holsman; F. L. Mills, Mitchell; J. F. MacDonald, Maxwell, and Ben Smith, Mitchell. Two test cars containing officials started but were soon put out of the running by mishaps.

The first leg of the course was to Canton, the next checking station being at Winsted, and Mills's Mitchell met with a mishap before reaching the latter place Mills had taken the wrong road out of Hartford and when he discovered his mistake returned to the starting point and tried to melt the snow in an effort to overtake the other competitors. An interfering tree caused a broken wheel, and after this was replaced it was so late that the car returned to Hartford after reaching Collinsville.

The entire run was a succession of accidents and hairbreadth escapes. Lieutenant King's car went out early on Avon mountain when it skidded into a ditch, and the other Maxwell, driven by MacDonald, first had axle trouble at New Hartford, and finally went out of commission, when it skidded, ran into a tree and broke a wheel at West Becket, Mass. It remained there over night and finally completed the course, but one day late and therefore out of the running for either of the cups offered. Morally it finished second, as the beautiful simplicity of the rules provided a minimum time limit of about eight hours and a maximum time limit from the start until doomsday. Humphreys was laid up with a mishap within a few miles of Pittsfield. One of the official cars jammed in the bridge just beyond Sheffield, while the other turned turtle near Stockbridge, throwing out the driver and referee of the contest.

Nor was the winning Mitchell without its share of thrilling incidents. Soon after leaving Hartford Smith got into trouble. He negotiated the slippery road up Avon mountain without accident, but in going down the other side the car ran onto a patch of ice that was obscured by snow. An uncontrollable skid and a telegraph pole beguiled fate and before they knew it Smith and his mechanic of the same name were lying in the road, the latter being wedged in between the car and the ground. F. A. Law came along in a big car and helped right the car, when it was found that the front axle was bent badly and the running board smashed to smithereens. Despite the dangerous wobbling of the front wheels Smith proceeded until he came to one of the official cars, jammed into a bridge near Sheffield. Smith hooked his Mitchell to the disabled car and tried to extricate it, but was unsuccessful and finally had to make a detour through the mountains into Great Barrington, for a loss of 15 miles. He reached Great Barrington at 10:23 a. m., and rolled into Pittsfield at 11:20, having covered about 90 miles in 4 hours 20 minutes. As his mechanician was slightly injured Smith stopped in Pittsfield long enough to have his helper fixed up and to eat dinner.

At Pittsfield Smith was urged to take the route over Peru mountain instead of attempting the dangerous ascent of Jacob's Ladder which, at its best in summer, is a heart-breaker in more respects than one. Smith, however, would not listen to counsel of the natives and said that he would take his car over the prescribed route or "bust." The ascent was a perilous one on low gear and several times the engine had to be cooled with snow, as the rear wheels spun around without resistance. Fortunately the ascent was made without accident and then began the descent, which was accomplished by binding rope to the rear wheels. From Chester to Westfield the run was over ties, on the road and through the snowbanks thrown up by the trolley sweepers, but Smith and his brave mechanic managed to reach Springfield at 5:10 p. m., where they were accorded an ovation. The homestretch run from Springfield to Hartford was made without incident, the latter place being reached at 6:52 p. m., Smith having been on the road 11 hours 52 minutes.

Automobiles Prompt at Fire Call.

The value of automobile fire apparatus was demonstrated to the satisfaction of the salvage corps in Newark, N. J., during the storm of Saturday night, 16th ult. Within a period of less than two hours the automobile of the corps responded to four alarms of fire, and proved its great superiority over horse drawn apparatus.

QUAKER CITY CONTEST CONTINUES

Three-Cornered Squabble Over Award—The Promoting Club Appeals from Decision of A. A. A. Contest Committee.

If ever was a muddled affair the three-cornered controversy now going on between the contest board of the American Automobile Association, the Quaker City Motor Club and the Premier Motor Mfg. Co., is entitled to the laurel wreath for being the most complicated. It all is over the result of the two days' endurance run promoted by the Quaker City Motor Club from Philadelphia to Wilkes-Barre and return, January 1st and 2d. The Premier company, on advice of the Quaker City Club which refused to entertain its protest, turned to the contest board with its petition for a reversal of the award. This was granted as was told in last week's Motor World, and the result is so distasteful to the members of the Philadelphia organization that an appeal has been taken to the executive committee of the A. A. A., claiming that the contest board was without jurisdiction.

In the protest of the Premier representatives it was pointed out that during the evening prior to the run a meeting was called to explain the rules to the contestants, and that R. G. Johnston, Philadelphia agent for the Premier, and McNamara, the driver, asked Dr. Overpeck if it would be permissible without penalty to unload passengers if it were necessary to secure traction. It is stated that Dr. Overpeck said this would be allowable, which statement, so far as is known has not been contradicted by the Philadelphia club.

It was during the second day of the run that the alleged infraction of the rules by the Premier car occurred. Before the Premier car began the climb up Giant's Despair a blockade of cars occurred. One of the blockading cars, according to the testimony, slipped one of its non-skid chains and started to skid down hill, so that McNamara for protection had to back his car down. Some of the passengers became frightened and got out of the car. McNamara then drove around the blockade and stopped as soon as he thought it safe, which was 25 feet beyond the last car. The passengers got in the car and it proceeded up the hill without trouble.

The protest of the Premier people came before the contest committee of the American Automobile Association on January 21st, and there seems to be considerable mystery surrounding this meeting. Those present were Chairman Frank B Hower, Frank G. Webb, E. P Chalfant, Alfred Reeves, appearing in the capacity of an advisory board. S. A. Miles, also a member, was unable to be present on account of illness. Others present were H. O. Smith with a lawyer, representing the Premier in-

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terests; G. Douglass Bartlett, counsel for the Quaker City Motor Club, and Richard Sellers, chairman of the club's contest committee. The decision of the Philadelphians was reversed and the Premier car declared entitled to the trophy. It is not known whether this ruling was made by the contest board of the A. A. A., or whether it was Chairman Hower's individual ruling.

Although it refused to accept the protest of the Premier people and advised them to file a protest with the American Automobile Association, the Quaker City Motor Club refuses to abide by the decision of the contest board—or of Chairman Hower—claiming that the contest board of the American Automobile Association has no jurisdiction whatever over the interpretation and enforcement of rules for the government of the endurance run promoted by the Quaker City Motor Club.

The petition presented to the executive committee of the A. A. A. recited that the Quaker City Motor Club, as an affiliated club of the American Automobile Association, always has conducted its events in accordance with the rules of the racing board, which gave the affiliated clubs promoting endurance contests the right to make rules to govern them. That on or about December 3d, 1908, the Quaker City Motor Club had received notification from Secretary Elliott that the racing board had been abolished and its function vested in the contest board, but before receiving this notification the rules for the Philadelphia-Wilkes-Barre endurance run already had been formulated. No new rules for the conduct of endurance runs had been sent it by the contest board, and therefore it did not know that the latter had any jurisdiction whatever over endurance runs, but following a letter from Chairman Hower it applied for a sanction, which was granted.

The petition alleges that when the hearing was held in New York City Chairman Hower refused to hear argument on the question of jurisdiction of the contest board to reverse the decision made by the contest committee of the Quaker City Motor Club. Three days before the New York hearing was held the Quaker City Motor Club received a letter from Chairman Hower, the following portion of which is quoted in the petition to the executive committee: "If, however your club takes the stand that it cannot err in judgment and will not abide by the judgment of the contest board of the A. A A., there is no use of our going further into the matter, and to so state to the contestant protesting." It was after receiving this letter that the Philadelphia people decided to argue the question of jurisdiction but claim that their representatives were not allowed to bring up the point at the meeting. The latest reports from the City of Brotherly Love are to the effect that unless the executive committee of the American Automobile Association clears things up it will be less one large club.

ECONOMY TEST FOR GLIDDEN TOUR

Addition of a Fourth Trophy to Prize List —Best Showing in Fuel Consumption to Determine the Award.

For the first time in the history of the Glidden tour the feature of economy will enter into this year's contest, to be held next July, a cup having been offered by the Chicago Motor Club to the car making the best showing in the matter of fuel consumption. Heretofore it has been sufficient for competitors in the contest to make the controls on time and not to use any of the spare parts, and the introduction of economy will be a valuable as well as interesting phase of the forthcoming contest.

The idea of offering a cup for the car showing the best fuel consumption originated with David Beecroft, chairman of the technical board of the Chicago Motor Club and while in New York he held a conference with the Glidden tour officials, with the result that his plan was accepted. Thus fortified Beecroft returned to Chicago and brought the matter before the board of directors of the Windy City organization, which gave him authority to carry out his plans.

The trophy will be in the form of a cup, for which the members are now subscribing, and will make the fourth prize to be contested for in the 1909 Glidden tour, the other prizes being the Glidden trophy for touring cars; the Hower trophy for runabouts, and a trophy for miniature tonneau and double rumble cars, which is a new one, the name of the donor being withheld.

No formal rules have been adopted by the American Automobile Association to govern competition for the Chicago Motor Club trophy, but it is understood the plan to be operated will be the one successfully used by the Chicago Motor Club's 1,000 miles reliability run last year. The formula employed considered the weight of the car with load in pounds divided by the fuel consumption in ounces, which proved to be a satisfactory test in that it did not permit the carburetter to be adjusted for unusually close economy and at the same time allow the car to be able to maintain a close schedule.

Advocates Penalizing Tire Troubles.

In casting the rules for the forthcoming contest for the Glidden and Hower trophies, exception has been made of tire troubles in providing the list of penalizations. In the past it has been generally conceded that such an omission was justified since tire troubles, like poor roads, belonged to a class of evil to which all motorists fall heir with equal impartiality. The idea is gaining ground in some quarters, however, that the design of the car has more to do with the rate of tire wear than used to be imagined. Taking this view, H. H. Franklin, voices the opinion that the Glidden rules for 1909 ought to include penalizations for tire as well as other difficulties. For, as he points out, "tire troubles are the cause of 90 per cent. of the road stops of the average car."

"The man who is interested in automobiles and automobiling wants to know how much trouble he is likely to have with his tires as he does with any other part of the automobile," says Mr. Franklin. "In fact, he needs to be more certain of the tires, for when he is out on a run the first thing he knows he finds himself stranded with a flat tire, and he must wait for repairs.

"In contests like the Glidden tour penalties should be imposed for tire troubles. They are to a considerable extent the result of heavy construction, and poor material accounts for more. They should be judged like any other part of a motor car. For the endurance and reliability of the vehicle are dependent just as much or more, upon them as upon the various parts concerning which penalizations are scheduled.

"It might be a good plan to farther extend the scope of the list of penalties and make it cover batteries As in the case of the tires there is no reason for overlooking battery defects and failures while the perfection that endurance and reliability contests are intended to demonstrate is required of all other parts. Batteries are on the wane, magnetos taking their place, but if they are used they should be made to stand the test.

"The Glidden tour is a reliability test and an important one, and it is intended to demonstrate accurately how much trouble of any and every kind the motor cars entered have. If it fails to do this in any degree it fails to that extent short of its purpose.

"Those in charge of endurance tests have of late been working toward greater rigidity of requirements. They have been sending the contestants over hard roads, purposely chosen to secure the weeding out of as many entries as possible before the technical committee is asked to give a ruling. The time is not far distant when in competitions like this the whole structure of the automobile will have to show that it can stand the strain or a penalty be imposed for its defects."

Automobiles Again May Cross Frontier.

Automobiles from the United States may now get into Canada in the vicinity of Niagara Falls and baby carriages may do likewise, but horse-drawn vehicles will not be permitted to cross the border for some months to come. Last summer, on account of an epidemic of hoof and mouth disease among cattle and horses, an embargo was established by the Canadian authorities at the Niagara port, barring all vehicles and the order included automobiles. On January 4, however, that portion of the restriction relating to motor cars was removed.

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INVITE CRITICISM OF TERRY BILL

Commissioners on Uniform Law Holding Series of Conferences—Objections to Absence of Speed Limit.

Far distant as the time may be when a majority of the important states will have uniform automobile laws, the efforts in this direction are being made with persistence, the campaign at present having its center in the sessions of the New York, New Jersey and Connecticut commissioners of uniform State laws who are meeting about once a week in an endeavor to reach a final agreement as to the exact provisions in the proposed law which they are to present to their respective legislatures. Last Saturday, 30th ult., another conference of this sort was held in New York City at the office of Charles Thaddeus Terry, who is chairman both of the New York board of commissioners on uniform state laws and of the legislative committee of the American Automobile Association. The lawyers participating in the conference were Frank Bergen, Woodrow Wilson and John R. Hardin, commissioners from New Jersey; Talcott H. Russell, Walter E. Coe and Erliss P. Arvine, commissioners from Connecticut; and William H. Hotchkiss and Francis M. Burdick, who together with Terry, represent New York State.

The basis of the deliberations was the bill drafted by Terry as the result of some two years experience in fighting for uniform automobile laws, the provisions of which were printed in last week's Motor World. While the features of the bill met with the general approval of the conferees, there was some discussion as to the provision abolishing "miles-per-hour" specification for city and country, respectively, some of the commissioners favoring limits of 12 miles per hour in the city and 25 miles per hour elsewhere, to meet the demands of legislators who insist upon definite speed limits. The bill as it stands at present provides that "No person shall operate a motor vehicle upon the public highways of this State recklessly or at a rate of speed greater than is reasonable and proper having regard to width, traffic and use of the highway, or so as to endanger property or the life or limb of any person."

"We are receiving and welcoming suggestions from every possible source," said Terry, after the conference, "and so far as we can judge public opinion from the many letters we get, the bill as it stands is almost ideal. When the commissioners agree definitely on its final form, it will be presented to their respective legislatures, and their duties as state officers will bind them to follow it up vigorously and try and secure its passage, a task which will be made easier through their official positions and the backing of their governors. Where the complete bill cannot be put through, such modifications in the existing law as will make the latter more nearly conform to it will be insisted upon.

"It will probably be necessary for us to hold several more conferences," he continued, "before we can all agree on the exact form the bill will take, but once we have reached such an agreement, the fight will be waged before the legislatures of the three states with all possible vigor. Meanwhile, we shall be glad to receive any criticisms of the bill that anybody may care to make. These criticisms may either be sent to my office, 100 Broadway, New York City, or to any of the other commissioners."

Proposed Exclusion Laws in Maine.

Maine legislators were called upon yesterday to consider the question of whether or not automobiles should be excluded from the precincts of Bar Harbor—sacred to the summer boarder—by the terms of a bill which has been filed at Augusta and upon which a public hearing was held. This is the first time the long fight between the wealthy summer residents of Bar Harbor, Southwest Harbor and Tremont and the automobile enthusiasts has been brought before the legislature. For four years, local restrictions have prevented the use of motor cars on three-quarters of the highways on Mount Desert Island, and also have prevented the entrance of machines from the main land. The present bill would exclude them etirely. Similar bills are being promulgated in two other instances—one in the case of Sullivan, which would isolate the summer resort of Sorento from the automobile nuisance, as it is locally regarded; and the other in the case of Solon, a little town in Sumerset county, well inland, which would exclude machines from the town except on three days a week.

Mellen Wants Automatic Speed Checks.

Massachusetts is wrestling with the old problem of the feasibility of regulating the speed of motor cars by means of automatic self-stopping regulators. A bill providing for such restriction, but not specifying exactly how it shall be brought about, has been introduced in the House by Representative Mellen, of Worcester, upon his own petition. The bill provides that when such an attachment shall have been approved by the board of highway commissioners, all automobiles shall be equipped with it at the owner's expense.

Bill to Authorize Insurance of Automobiles.

A bill at present before the Maine legislature is intended to extend the privileges accorded to insurance companies authorized to do business within the state and enable them to insure automobiles. It authorizes them to insure automobiles under such form of policy as may be agreed upon between them and parties insured.

OVERHAULING FRELINGHUYSEN LAW

Three Bills Embodying Radical Amendments Before the New Jersey Legislature—Scope of Proposed Changes.

After a prolonged preliminary campaign lasting over many weeks, the fight of the New Jersey motoring interests for less drastic legislation, reached a climax when, on Tuesday of this week, February 2d, Col. Austin Colgate, personal aid on the staff of Governor Fort, introduced in the House of the Assembly the amendments to the odious Frelinghuysen law, as drawn up and approved by the New Jersey Automobile Trade Association and the Associated Automobile Clubs of New Jersey, and endorsed by the Newark Board of Trade. The measures are embodied in three separate bills.

One of the propositions is for a ten day privilege to automobilists from other States without a local license. This, however, will be amended in deference to the wishes of Senator Frelinghuysen by making a nominal license fee of $1. Another bill makes it a misdemeanor for any person to operate an automobile while intoxicated or in wilful violation of the automobile registration laws, and a third fixes a penalty of $10 for failure to display a white light at night visible in all directions at least 250 feet.

A general synopsis of the proposed legislation reveals amendments to the present law to the effect that every motor vehicle must have a plainly audible signal trumpet; must carry exhaust pipes directly parallel to the ground or turning slightly upward; that the commissioner of motor vehicles shall receive all complaints for violation of the speed laws, the same to be in writing and verified.

Such complaints shall be investigated within 30 days from receipt, and if in his judgment a case is made out, he shall cause a warrant to be issued and placed in the hands of the officer to execute. The party so summoned shall be brought before a justice of the peace in the municipality in which the violation occurred.

It further forbids the use of a muffler cut out in cities or towns or within 500 feet of another vehicle; changes the speed limit to thirty miles per hour, and exempts drivers from penalties regarding maximum speed limit unless the excessive speed shall be proved to have been made for one full mile.

The proposed legislation provides that any person driving a motor vehicle without the positive consent of the owner, or while in an intoxicated condition, or for any debt or wager, or for the purpose of breaking any speed record, or after his license has been revoked, or failing to display his registration number, shall be guilty of a misdemeanor.

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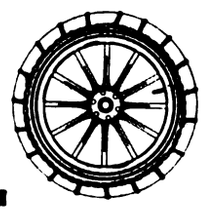
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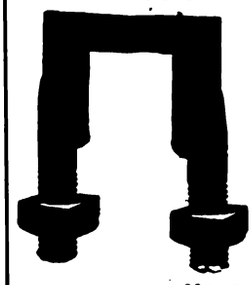
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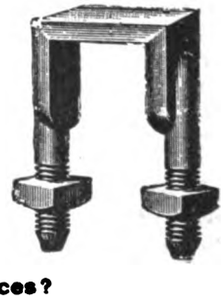
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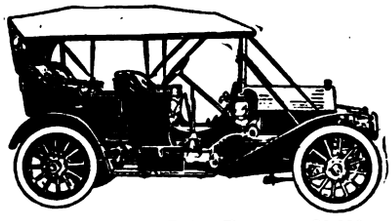
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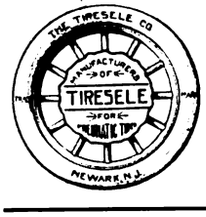
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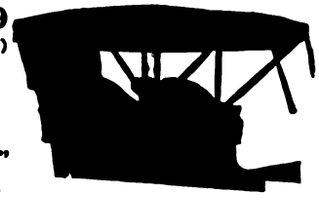
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561 A—Fixed Hub Type. Front View



561 B—Fixed Hub Type. Rear View

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562—Floating Hub Type. Top View

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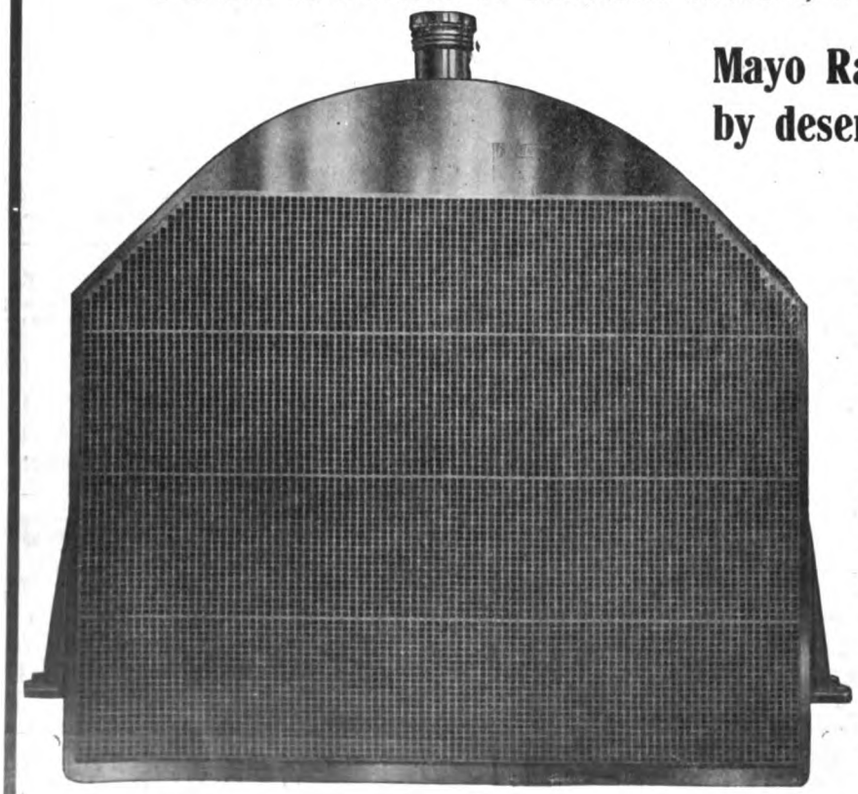
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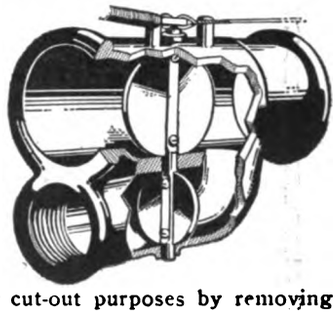
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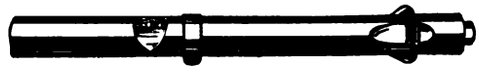
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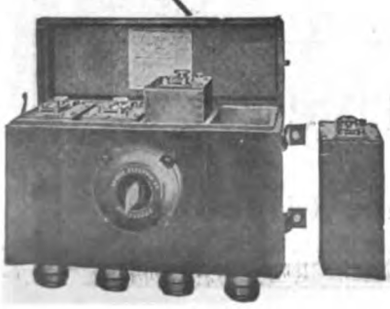
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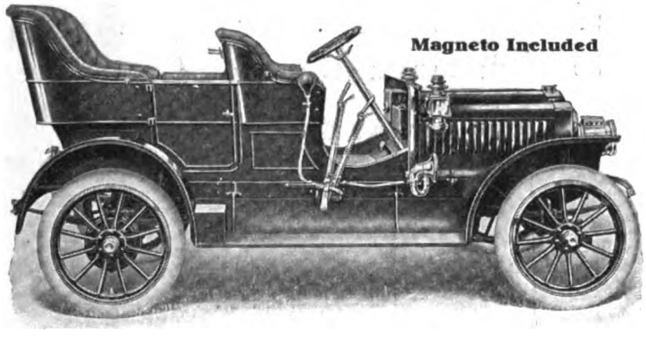
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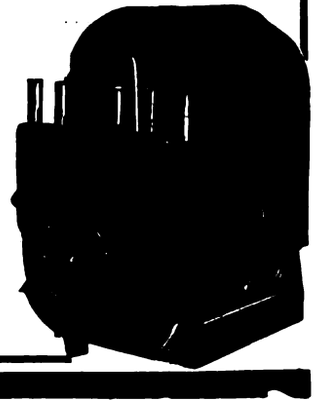
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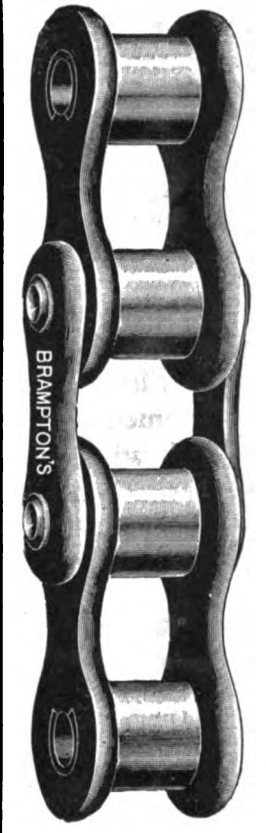
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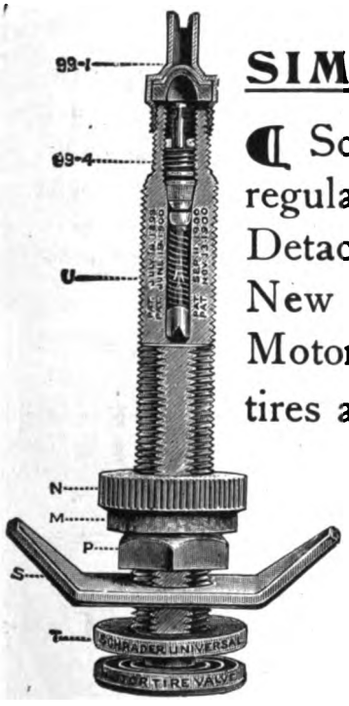
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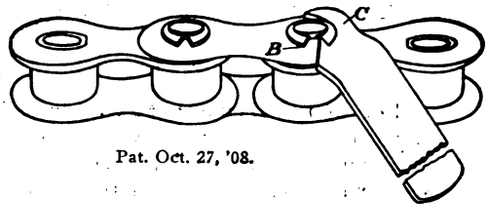
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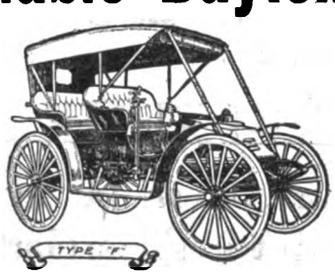
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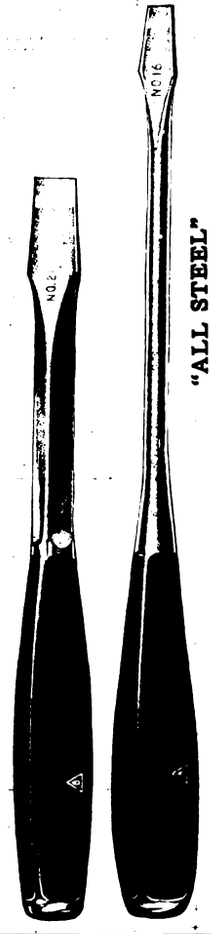
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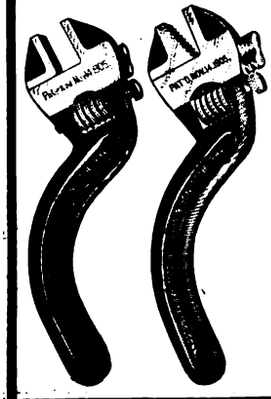
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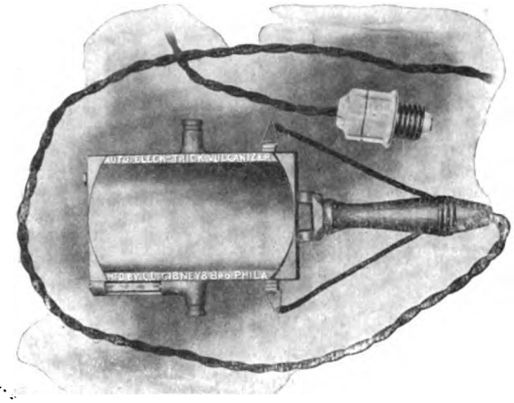
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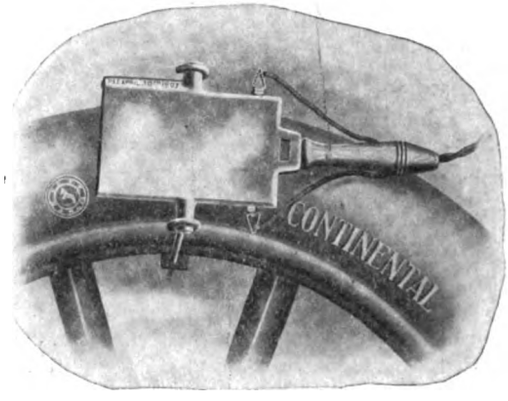
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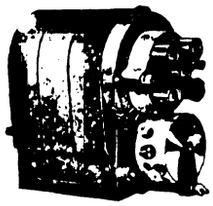
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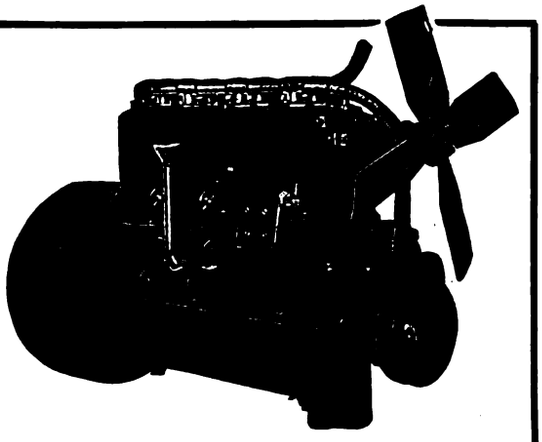
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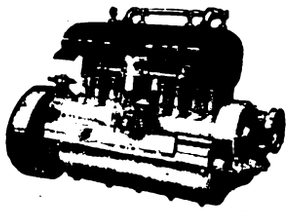
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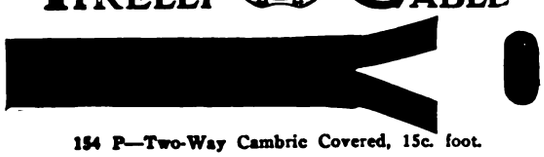
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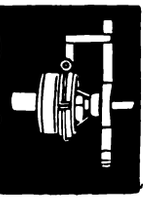
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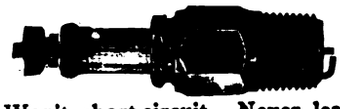
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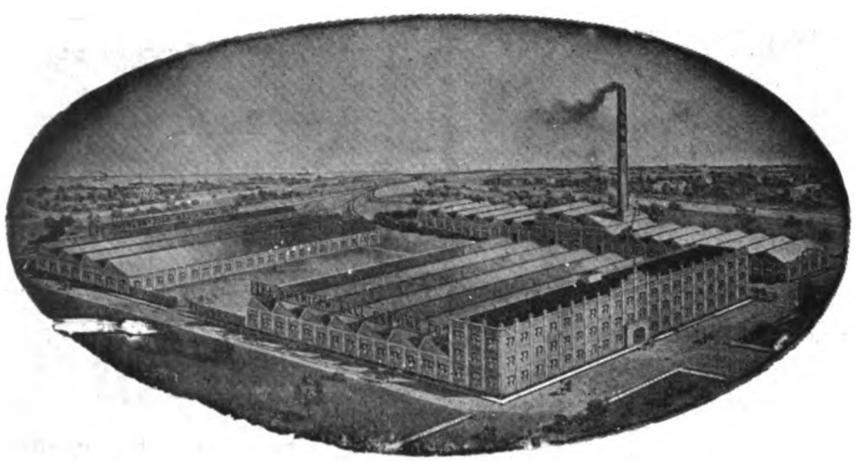
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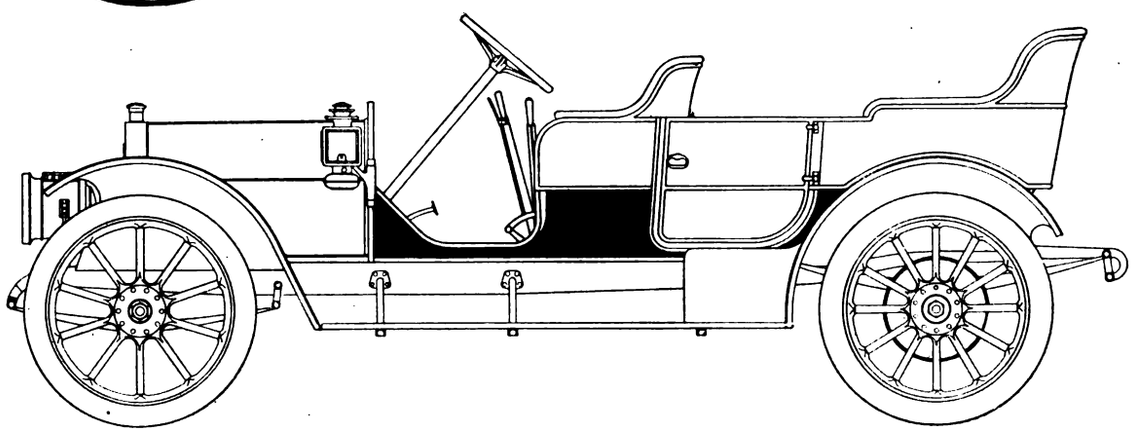
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GOOD design; a careful selection of scientifically tested materials; the exercise of greatest care in the manufacture of component parts; painstaking skill in their assembly, and a system of final inspection so comprehensive and complete that anything under 100 per cent. perfect cannot get through—that's Stearns production.

¶ Our new 15-30 is for those who would have a strictly high quality car at price and of power somewhat under the 30-60 horsepower model.

¶ Catalogued at 15-30 it develops close to 40 horsepower and, while of comparative light weight, is so staunch and sturdy that it will "stand up," as a good car should, even under unusual conditions of service.

¶ And, like our 30-60 (which is accepted as the standard of excellence in America), this new 15-30 model represents extreme high quality in every line and fiber.

¶ It is shaft drive, and designed to accommodate town and touring bodies.

¶ In our 30-60 horsepower model purchasers are given side chain or shaft drive option.

¶ Demonstration by appointment.

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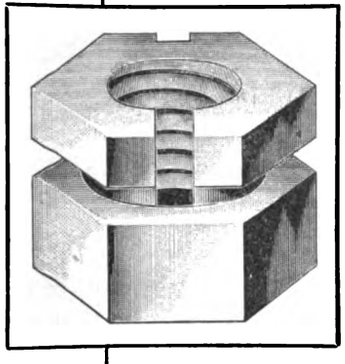
"Locking the door after the pony is stolen"

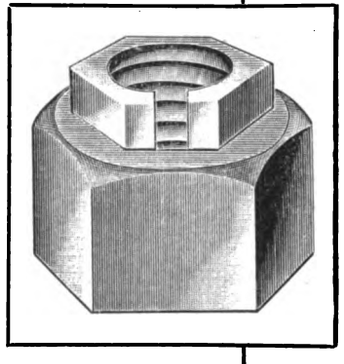
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for it's only a postponement at best. Why not take a double-twist on the forelock of old Father Time and incorporate the use of Columbia Lock Nuts in your construction BEFORE you have occasion for regrets? Columbia Lock Nuts are in general use and are regarded as a necessity by some of the biggest railroad systems in the country. They ought to be a double necessity on automobiles. They are already used by many prominent makers. They should be used on every automobile everywhere.





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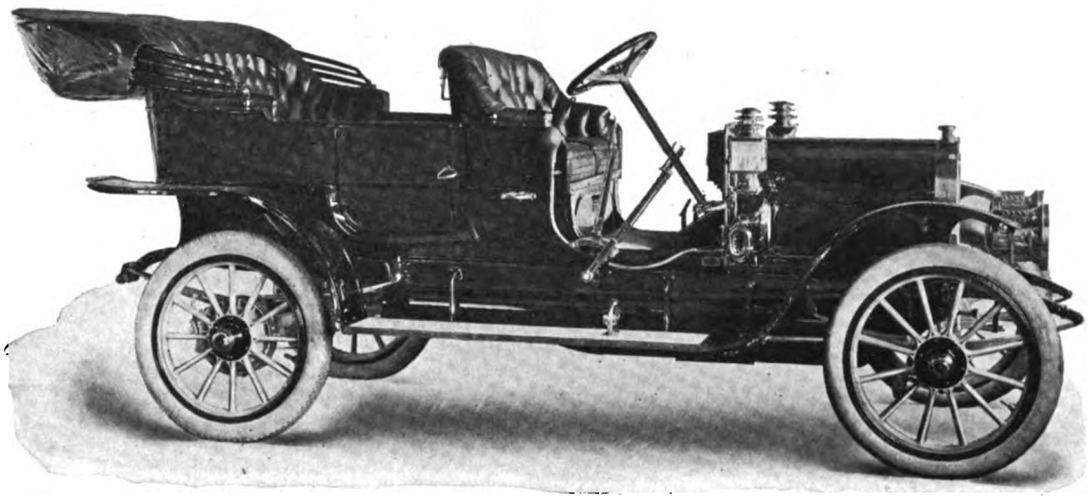
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TOURING CAR, ROADSTER, TOY TONNEAU

A genuinely good car cannot be made and sold for less than $2,000. By this we mean a car like the Selden, containing nothing but the best of materials, workmanship and finish. A car that the manufacturer can stand behind and guarantee for at least a year against any imperfections in workmanship or material.

We buy only the best materials, employ only skilled labor and pay particular attention to details and finish, thereby producing a strictly high-grade car at the lowest possible price.

The up-keep and maintenance of a medium-priced car like the Selden is within the reach of any man of moderate means and the value of the car does not depreciate like that of the lower priced cars. This is the point to be considered by every purchaser.

The Selden Car is a 4-cylinder 28-30 horsepower (developing 37 horsepower) five passenger Touring Car or three passenger Roadster, with 114-inch wheel base, 34-inch wheels, shaft drive, selective control, pressed steel frame, metal body, fully equipped.

Superb riding, roomy tonneau, luxurious upholstery, smooth running, great hill-climber, flexible and easily handled, economical in maintenance and up-keep, fine finish, stylish and attractive.

THE COMING CAR OF MODERATE PRICE

Catalog and Agency proposition upon request. Agencies wanted everywhere.

SELDEN MOTOR VEHICLE COMPANY

GEO. B. SELDEN, Pres. Members Association Licensed Automobile Manufacturers. ROCHESTER, N. Y.

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THE MEASURE OF TIRE QUALITY

is not alone length of service, but also kind of service.

A tire that has to be coaxed by frequent visits to a repair shop is an inferior tire, even tho it may last a total of three, five or seven thousand miles.

MORGAN & WRIGHT TIRES

are long-lived tires, but the length of service is secured in the making of the tires, and and not by frequent doctoring by the users. They stand up as only tires can that are made as Morgan & Wright tires are. And our rigid system of inspection protects you from any and all possible defects.

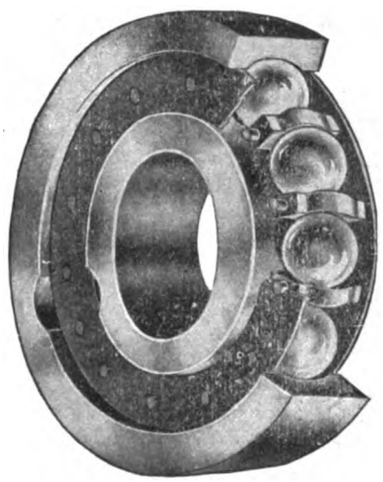
MORGAN & WRIGHT, Detroit

Branches, Agencies or Dealers Everywhere.

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SCHAFER BEARINGS

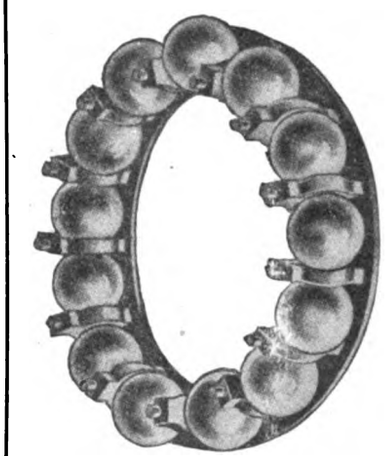
MADE IN GERMANY



THRUST BEARINGS

Originators of 92% of Balls in the Raceway

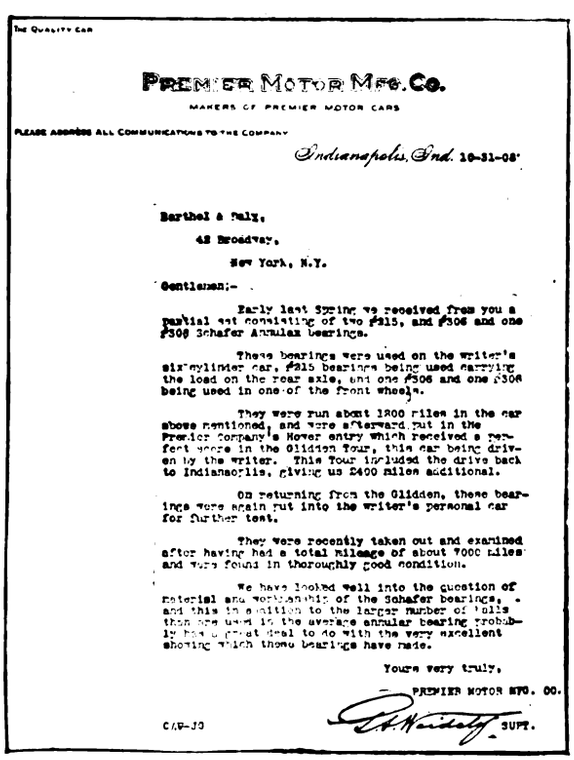
Carrying capacity greater than any other ball bearings extant. Made of the finest steel and fully guaranteed.



MAGNETO BEARINGS

BARTHEL & DALY, Sole Importers

42 Broadway, New York City



The Quality Car

PREMIER MOTOR MFG. CO.

MAKERS OF PREMIER MOTOR CARS

PLEASE ADDRESS ALL COMMUNICATIONS TO THE COMPANY

Indianapolis, Ind. 10-31-08

Barthel & Daly,
42 Broadway,
New York, N.Y.

Gentlemen:-

Early last Spring we received from you a partial set consisting of two #315, and #306 and one #308 Schafer Annular bearings.

These bearings were used on the writer's six-cylinder car, #315 bearings being used carrying the load on the rear axle, and one #306 and one #306 being used in one of the front wheels.

They were run about 1800 miles in the car above mentioned, and were afterward put in the Premier Company's Hower entry which received a perfect score in the Glidden Tour, this car being driven by the writer. This Tour included the drive back to Indianapolis, giving us 2400 miles additional.

On returning from the Glidden, these bearings were again put into the writer's personal car for further test.

They were recently taken out and examined after having had a total mileage of about 7000 miles and were found in thoroughly good condition.

We have looked well into the question of material and workmanship of the Schafer bearings, and this in addition to the larger number of balls than are used in the average annular bearing probably has a great deal to do with the very excellent showing which these bearings have made.

Yours very truly,

PREMIER MOTOR MFG. CO.

C/P-JO

SUPT.

Manufacturers to whom we cheerfully refer:

LANCIA	Italy	RENAULT	France
F. R. A. M.	Italy	DARRACQ	France
GREGOIRE	France	CLEMENT BAYARD.	France
ZEDEL	France	ITALA	Italy
CHARRON	France	PELGRIMS	France
HUMBER	England	LUCIA	Switzerland
MERCEDES	Germany	S. P. A.	Italy
DAIMLER	England	FAFNER	Germany
HANSA	Germany	S. S. W.	Germany
MINERVA	Belgium	POLYPHON	Germany
METALLURGIQUE.	Belgium	MENDELSSOHN	France

and

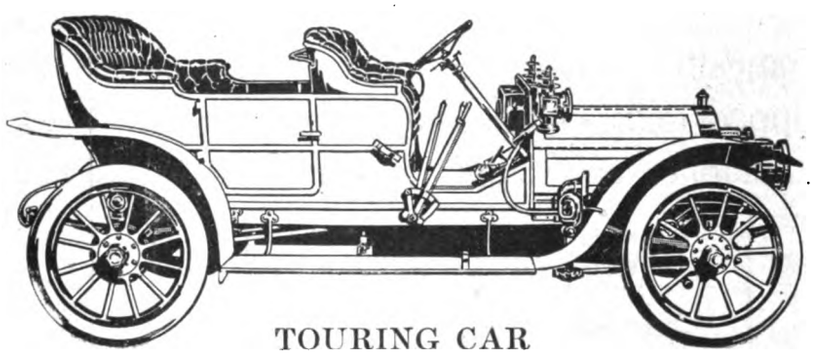
THE SIEMENS & HALSKE ELEC MFG. CO., of Berlin, Germany.

(The Largest Electrical Manufacturers in the World.)

Write for Catalogue and Price List

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Pierce Arrow Car



TOURING CAR

For 5 persons, 36 H.P., 6 cylinders, 119" wheel base, $4,000. The other new types on this chassis include Runabout, Brougham and Landaulet.

WE believe that every Pierce Arrow Car is today running and giving satisfaction to its owner, except in the case of cars that have been put entirely out of business by a collision.

THE PIERCE-ARROW MOTOR CAR CO. (Members Association of Licensed Automobile Manufacturers) Buffalo, N.Y.

Owners of THE GEORGE N. PIERCE COMPANY

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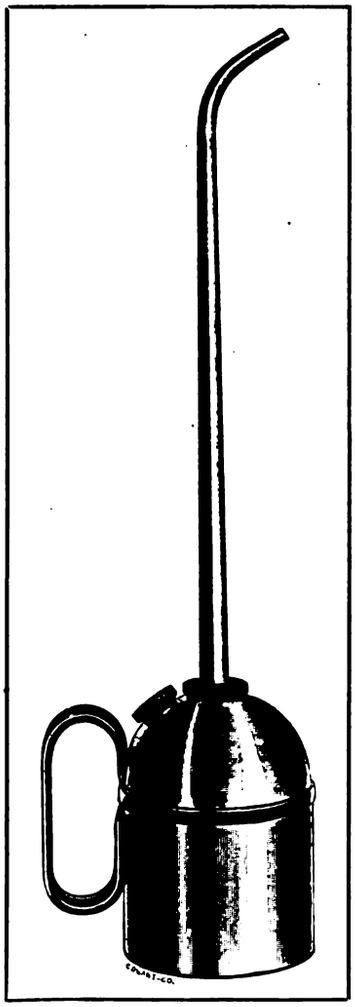
Out of the thousands of

"SWEDOH" SPRING STEEL RIMS

turned out by us, not one ever has been returned as defective. We make the statement on honor, and it ought to impress the manufacturer who is aiming to produce a quality product.

"Swedoh" Spring Steel Rims

are emphatically a quality product of one of the largest and best equipped mills in the country. They are used on most good automobiles and ought to be used on all automobiles.

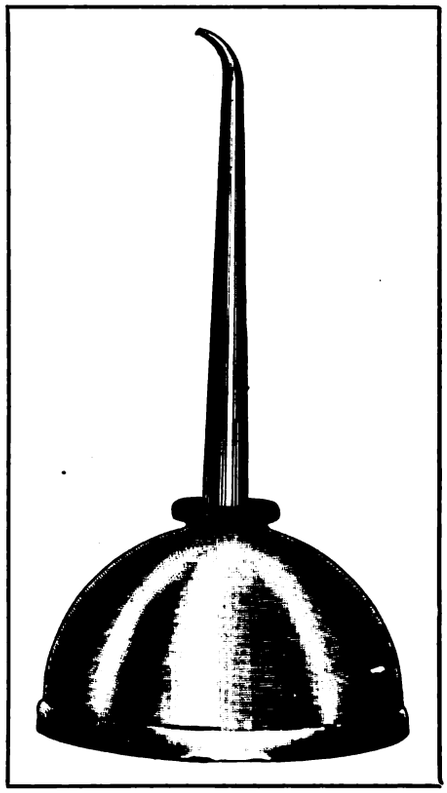


We also make from "Swedoh" steel

REAL OIL CANS

heavily copperized, of extreme durability and springiness that the ordinary oil can ought to be but isn't.

Our product includes all kinds of steel stampings and pressed work. If you want anything made from steel, we can make it—and "make good."



AMERICAN TUBE & STAMPING CO.

Bridgeport, Connecticut

NEW YORK OFFICE, 100 BROADWAY

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$1,500 For A Car

Embodying $11,000,000 Worth of Experience!

There are two kinds of cars:

One is made merely to sell at a low price. The other is made to give service; is mechanically correct; is constructed of the best material, and is sold at a modest percentage of profit over the cost. That is the Mitchell $1,500 car.

The manufacturer's experience; his reputation, and a large plant can alone guarantee a good car at a low price.

We buy and make on a large scale. We can turn out a car at a figure wholly prohibitive to the small maker.

$11,000,000 worth of Mitchell cars have been giving complete satisfaction for eight years.

Our plant is now four times as large as it was when we started to make these cars.

Our $1,500 car is perfect all the way through, down to the smallest details. We wouldn't use more care or better material in its construction if we asked twice as much for it. In it is crystallized all our eight years' experience.

Mitchell

New Model 30 (1909 model) including High-Grade Magneto—32x4 in. tires—assuring freedom from tire troubles and $300 worth of actual extra Automobile value which you can get in no other car of its price. Touring Car or Roadster—price,

$1,500

A big, roomy, luxurious 5-passenger touring car, with 4 cylinders, 28-30 horse power engine and capable of doing 50 miles an hour. This is our Model 30 which we offer you for $1,500.

We even go further than this. We include $300 worth of actual automobile value which with any other $1,500 car you would have to buy extra.

For instance our price includes a high grade magneto in addition to the regular battery ignition system.

It includes 32-inch wheels and 4-inch tires—all other $1,500 cars use 3½-inch tires. Our tires cost us $50 more per set than the 3½-inch tires.

It includes a dozen other features which you would expect to find only in cars selling for $5,000 or more.

Our transmission is of the best selective, sliding gear type—the kind that is used in all of the well known, high-priced cars.

Our cylinders are cast separately.

We use as much vanadium or nickel steel as the most expensive cars on the market.

We use aluminum castings wherever possible and we strengthen them with bronze.

Our tonneau is detachable, and you have your choice of three styles of body.

Two complete ignition systems—Magneto and the ordinary battery system.

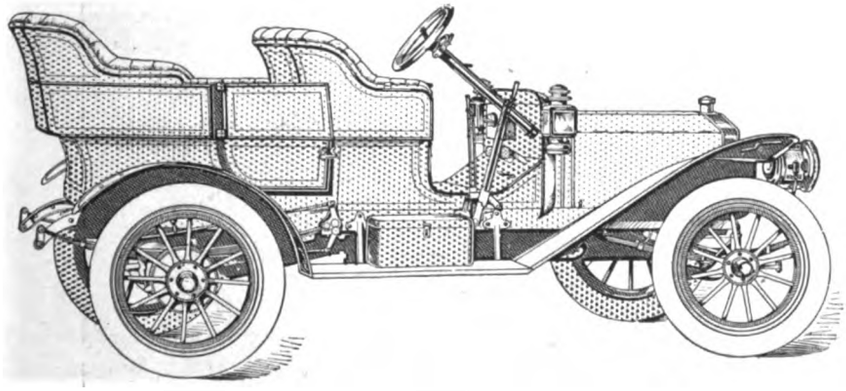
The lubricating system is the best we have found in our eight years' experience.

If we were not equipped to turn out ten cars to the other makers' one, this Mitchell "30" would certainly cost you $2,000 to $2,500.

Remember that we do not buy parts from separate makers and simply assemble them. Such cars are experiments—each individual car is an experiment.

But we are able to machine our parts to the accuracy of ~~10000~~ part of an inch. So our car is in harmony at every point. It is silent and smooth and reliable. Don't take our word for these facts. Examine the car yourself; ride in it, give it the hardest try-out you know. Then, if it doesn't "make good," don't buy it.

Full particulars upon request.



MITCHELL MOTOR CAR CO.
575 Mitchell Street, Racine, Wis.
Standard Manufacturers, A. M. C. M. A.

You may send me a detailed description of your new $1,500 Mitchell 30.

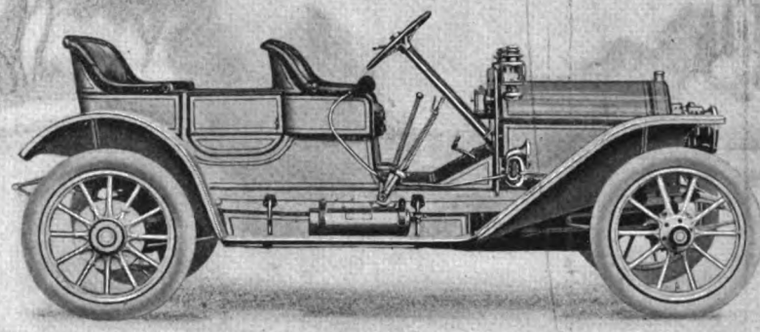
Name .....

Address .....

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THE MARMON

"A Mechanical Masterpiece"



The "Thirty-Two" Suburban, $2400

Certainty, Not Supposition

A man's record can't be written at his birth. Neither can you correctly judge the durability and value of any make of car except by reviewing its past.

The Marmon cars sold by us in the early days of the automobile industry are still giving splendid service. Time has wrought many refinements in design. But the vital elements of durability and reliability have never been lacking in a Marmon car.

The "Thirty-two," manufactured entirely by us, and unsparingly equipped, has a character and a value which no thoughtful buyer can ignore.

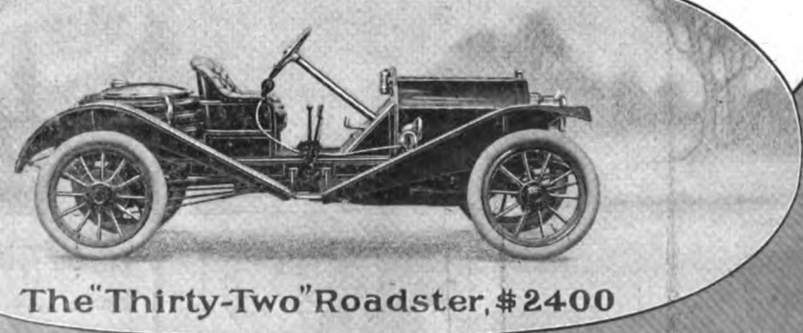
Motor, 4 Cyl. 4½x4½. Water cooled. 32-40 H.P. Three point support. **Ignition,** Bosch H. T. Magneto, dual system. **Lubrication,** Marmon system of automatic force feed through hollow crankshaft. **Drive,** straight line shaft. Selective transmission and rear axle one compact unit, very accessible. **Large** brakes, effective and very durable. **Materials,** absolutely the best of everything, including Krupp and Chrome Nickel Steels. Hess-Bright imported ball bearings. **Tires,** Q. D., 34x4. **Wheel Base,** 112 in. **Weight,** 2,100 lbs. **Equipment,** complete and high-class. **Bodies,** Sheet Metal. Touring Car seats five; Suburban (detachable tonneau) seats four; Roadster seats two. Also furnished as Coupe or Limousine Town Car.

Marmon "Fifty" (Seven-Passengers), $3750

NORDYKE & MARMON CO., Indianapolis, Ind.

Standard Mnfrs.
A. M. C. M. A.

Established
1851



The "Thirty-Two" Roadster, $2400

The Easiest Riding Car In The World

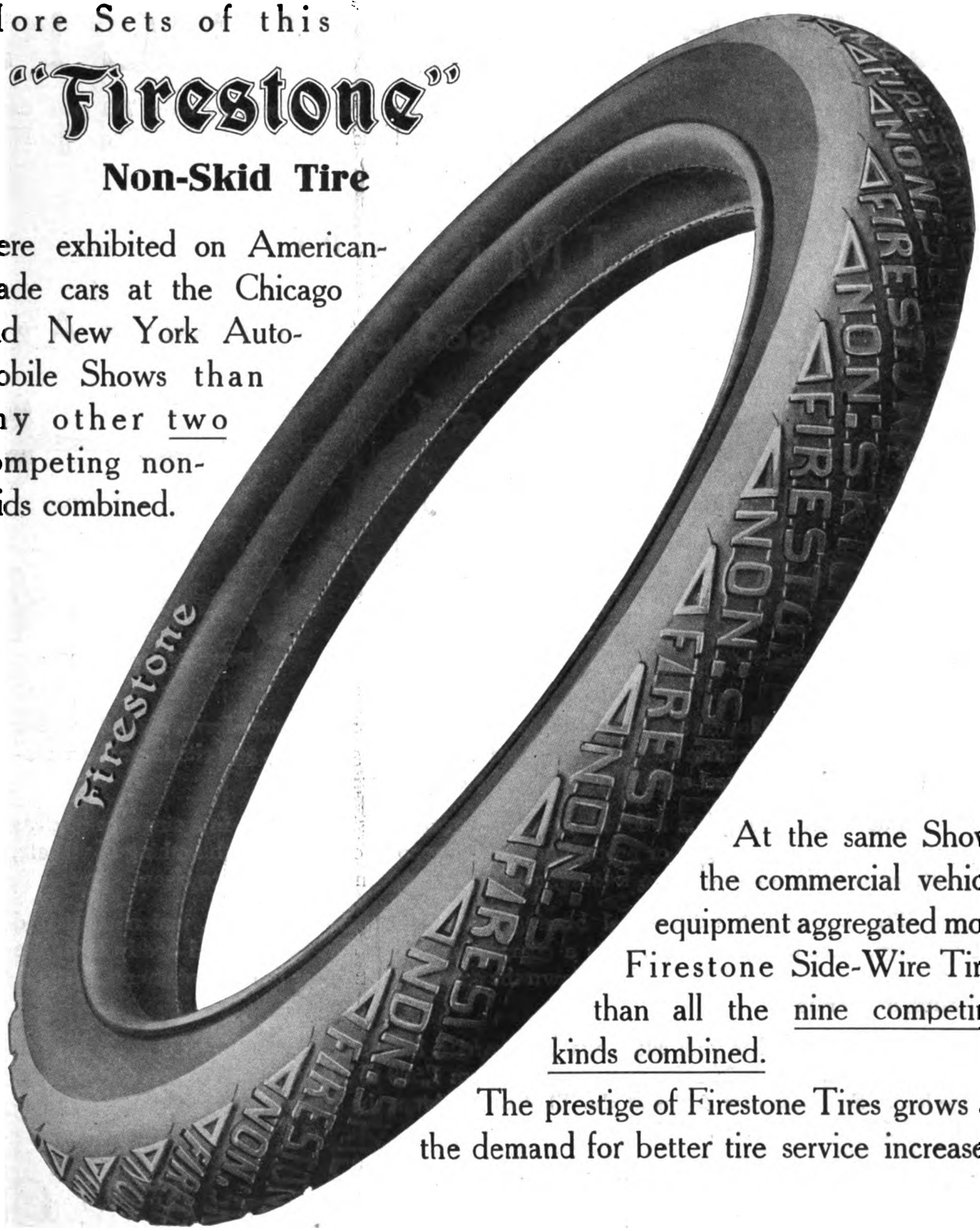
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More Sets of this

"Firestone"

Non-Skid Tire

were exhibited on American-made cars at the Chicago and New York Automobile Shows than any other two competing non-skids combined.



At the same Shows the commercial vehicle equipment aggregated more Firestone Side-Wire Tires than all the nine competing kinds combined.

The prestige of Firestone Tires grows as the demand for better tire service increases.

FIRESTONE TIRE & RUBBER COMPANY, Akron, Ohio

Branches and Agencies Almost Everywhere.

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TIMKEN PRODUCTS

were represented at the Madison Square Garden Show, New York, by over **70 per cent.** of the exhibits of the American gasoline pleasure car builders, and by EIGHT of the NINE commercial car exhibits. AN ENVIABLE RECORD.

TIMKEN

New One-Piece Pressed Steel Power Axle



Fixed Hub Type—Front View



Fixed Hub Type



Brake



Fixed Hub Type—Rear View



Floating Hub Type—Top View

as shown in the illustrations herewith, is a one pieced, pressed steel form, shaped to give better than truss resistance to load, end thrust and breaking strains, and eliminate the vibration common to cast steel or forged axles of the built-up type.

The entire housing is a load-bearing and gear-encasing member in a single unit, clear and smooth, without angles or protruding parts, supports or braces, with nothing to vibrate, nothing to rattle, nothing to work loose, nothing to catch mud, and easy to clean.

The power unit (differential bearings and adjustments for same, pinion shaft and bearings, drive and pinion gears) is a compact unit that can be removed bodily from the axle case or housing without taking down the axles or disturbing brake equipments, springs, hubs, or bearings.

The axle complete with differential gear carrier, brakes and spring seats, is made in both clutch and fixed type hub for cars weighing from 1,500 to 3,000 pounds empty, and 45 h. p. or less. See these new Axles at the Timken exhibit at the Shows, or write direct for illustrated descriptive matter.

The Timken Roller Bearing Axle Co.

CANTON, OHIO, U. S. A.

BRANCHES—10 E. 31st St., New York. 429 Wabash Ave., Chicago.

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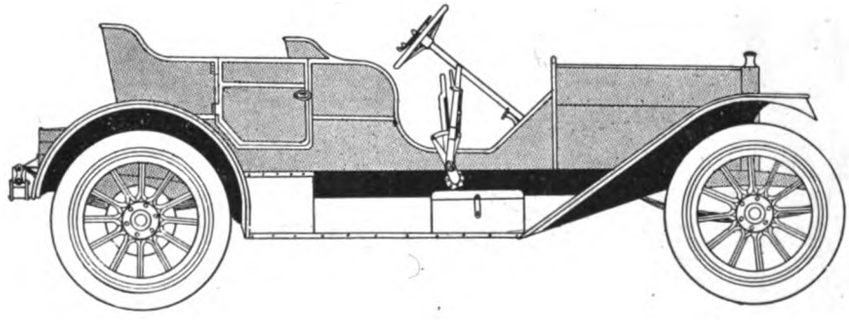
METEOR

50 H. P.

The car built for hard usage, combined with luxury, smooth running, comfort and reliability.

We guarantee the Meteor Transmission against damage—no matter how or by whom used. It is absolutely indestructible.

A most interesting proposition to dealers.

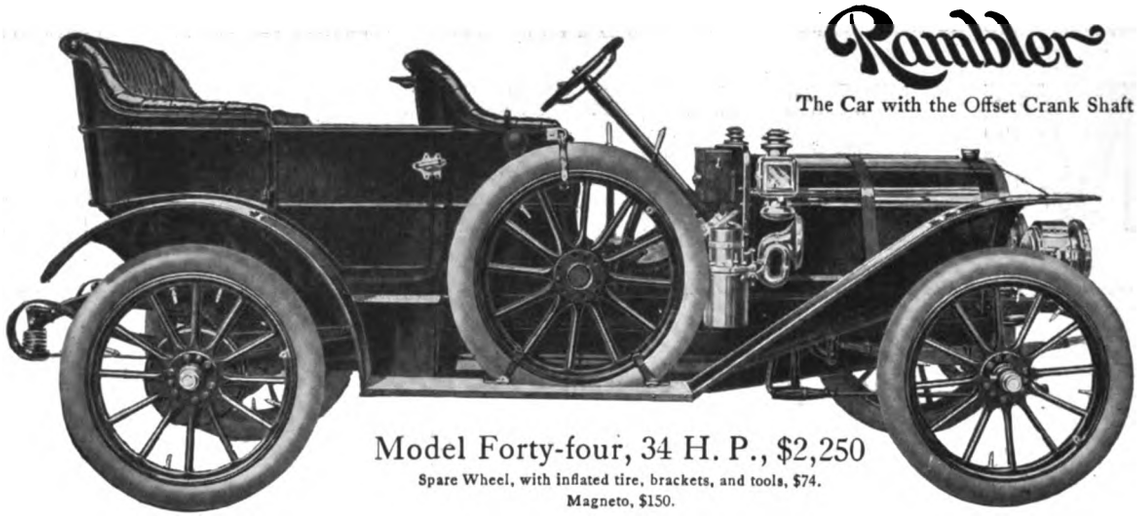


ADVANCE CUT OF '09 BABY TONNEAU

Meteor Motor Car Co.

DAVENPORT, IOWA

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Rambler

The Car with the Offset Crank Shaft

Model Forty-four, 34 H. P., $2,250

Spare Wheel, with inflated tire, brackets, and tools, $74.

Magneto, $150.

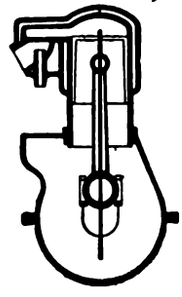
Why the Offset Crank-Shaft?

Notice a man about to mount a bicycle. He always adjusts the pedal in that position where it will receive to best advantage his full weight on the first downward stroke. This position for the pedal is just slightly forward of the center of the crank-shaft of the bicycle. If he mounted when the pedal was directly over the center of the crank-shaft, his weight would fall directly on the bearings and the first downward stroke would be retarded and therefore weak.

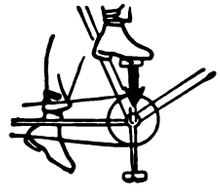
Now imagine the man's leg as the piston of an automobile engine, the pedal of the bicycle as the crank-pin, and the crank-shaft of the bicycle as the crank-shaft of the engine. In the ordinary engine the crank-pin and piston (the pedal and the man's leg) are directly over the dead center, and until the crank passes the turning point all effort is wasted. Thus when the explosion occurs the greatest force falls upon the bearings.

In the Rambler engine, at the instant the explosion occurs above the piston the crank-pin has moved past the dead center; the crank-shaft is in a position to receive the full pressure and turns without friction. No shock falls on the bearings; there is no side thrust, and wear on the cylinder walls is thus saved.

Because of this feature Rambler Model Forty-four can be operated smoothly and steadily at three miles an hour on high gear



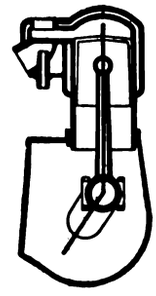
Ordinary Engine. Position of piston at explosion center.



Corresponds to position of piston in ordinary engine at explosion center.



Corresponds to position of piston in Rambler engine at explosion center.



Rambler Offset Crank-Shaft. Position of piston at explosion center.

Seven-passenger model, 45 horsepower, with offset crank-shaft, $2,500. Other models $1,150 to $2,500. A new Rambler catalog has just been issued. It describes and illustrates all distinctive features of new Ramblers--the offset crank-shaft, Spare Wheel, straight-line drive, etc. A copy on request.

THE CAR OF STEADY SERVICE

Thomas B. Jeffery & Company

Main Office and Factory, Kenosha, Wis.

Branches and Distributing Agencies: Chicago, Milwaukee, New York, Cleveland, Boston, San Francisco.

The new Rambler Models will be shown and demonstrated at the Coliseum, Space B-2, and at our Chicago Branch, 1462-1464 Michigan Ave., during the Chicago Automobile Show. Telephone Calumet 3000, give your address, and we will call for you.

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, February 11, 1909. No. 20

MAKERS ELECT A NEW PRESIDENT

Smith Chosen to Succeed Briscoe at Annual Meeting of A. M. C. M. A.—Standard Warranty Adopted.

In the First Regiment Armory, Chicago, the annual meeting of the American Motor Car Manufacturers Association was held on Tuesday, 9th inst., resulting in the election of Harold O. Smith, president of the Premier Motor Mfg. Co., as chairman for 1909. The other officers elected were: Vice-chairman, C. G. Stoddard, the Dayton Motor Car Co.; treasurer, S. H. Mora, Mora Motor Car Co.; secretary, G. Vernon Rogers, Mitchell Motor Car Co.; and auditor, W. H. Vandervoort, Moline Automobile Co. The three members of the committee of management whose terms expired were re-elected. These are Charles Lewis, Jackson Automobile Co.; W. C. Marmon, Nordyke & Marmon Co.; and W. H. Vandervoort, Moline Automobile Co. Alfred Reeves continues as general manager of the association.

After serving for two terms as chairman of the Association, Benjamin Briscoe declined the honor for 1909, but will remain a member of the committee of management. He was given a rising vote of thanks for the excellent administration of affairs during his term of office, and a committee was appointed to secure some suitable testimonial token to be presented to him in appreciation of his leadership. The same committee was also empowered to make similar presentations to James Couzens, of the Ford Motor Co., who was the first chairman of the association, and to the members of the show committee, consisting of H. C. Smith, S. H. Mora and R. M. Owen, as a compliment to their success in conducting the last Grand Central Palace show.

A standard form of guarantee, to be known as the "A. M. C. M. A. warranty" was adopted, and legislative, racing and patent matters were made the subject of general discussion. In recognition of the importance of the attendance of dealers at the automobile shows, a resolution was adopted asking that the Chicago show management present to all automobile dealers offering proper credentials, a complimentary badge for the show period.

New Company Absorbs Wray Pump.

The Wray Pump and Register Co., of Rochester, N. Y., has been merged into a new company which will be known as the Kellogg Mfg. Co. In addition to pumps and registers, the new concern will manufacture a number of other specialties, including timers, all of them being the inventions of George W. Kellogg, the president. J. F. Weller is vice-president and secretary, and M. R. Anstice treasurer, while A. Byron Schuyler will supervise the manufacturing end.

More Recruits from Carriage Makers.

In addition to the Jewel Carriage Co. and other Cincinnati carriage concerns already announced as engaging in the automobile business, two new recruits have been added to the ranks. The Frank J. Enger Carriage Co. has embarked in the manufacture of high wheeled motor vehicles while the Haberer Carriage Co. has undertaken to make machines of the more conventional type. This part of the Haberer business is named the Cincinnati Automobile Co.

Mitchell Now a $1,000,000 Corporation.

A raise in capitalization has been made by the Mitchell Motor Car Co., of Racine, Wis., the increase being from $500,000 to $1,000,000. It is the intention of the company to make large improvements in its plant during the coming year. All of the wooden buildings in connection with the big factory are to be replaced with concrete structures.

Maxwell-Briscoe Adds a Factory.

The Maxwell-Briscoe Motor Co. has leased the Ingersoll-Rand Drill Works, at Tarrytown, N. Y. It is being equipped as an addition to the present Maxwell factories.

MUST PAY FOR USING TIRE MOLDS

Owners of Patent Notify Tire Makers to Secure Licenses—Prosecution for Infringement the Alternative.

While manufacturers of tires heretofore have had to do chiefly with litigation or rumors of litigation involving the principles of their wares, a number of them at least have received a departure from the usual course in the form of notification that they must either change the method by which their tires are made marketable or secure a license for continuance of such method.

This situation has been brought about by patent No. 822,561, issued June 5, 1906, to Peter D. Thropp, which is claimed to cover the manufacture of molds for curing tires in open steam. The De Laski and Thropp Woven Tire Co., of Trenton, N. J., is the owner of the patent No. 822,561, as they are the people who are serving the notices of infringement. They are, of course, acting under the authority of the exclusive licensee for the manufacture of the molds under the patent, John E. Thropp's Sons Co., of Trenton.

So strong are the tire company's representations that after some negotiations five rubber companies already have taken out licenses for the manufacture of tires by the use of these molds. Licenses to other companies will not be withheld, provided the same conditions are complied with as in the case of the present licensees, but warnings have been issued that all concerns making, using or selling the molds without license will be prosecuted.

Hardy Opens a Chicago Branch.

The R. E. Hardy Co., of New York, has opened a branch office in the Fisher building, Chicago, Ill., in connection with the Motor Parts Co., New York, of which Hardy is president. The sales of Sta-Rite plugs and automobile accessories will be handled in the West from Chicago.

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In the Retail World.

The Woods Motor Vehicle Co. has opened a new garage at 1508-10 Benson avenue, Evanston, Ill.

The Belleville Auto Co. has opened an establishment at 228 West Main street, Belleville, Ill. G. G. Behrens is in charge.

Fire in the garage of the Canada Cycle and Motor Co., Ottawa, destroyed five automobiles. The loss is estimated at $30,000.

Nash & Fenimore have started in business in Los Angeles, Cal., and will handle Loziers. A garage location has been taken at 2414 West Seventh street.

A. C. Burton & Co. is a new firm in Houston, Tex. Its garage will be located at 812 Fannin street, and the concern, in addition to carrying a full line of supplies, will have the Chalmers-Detroit agency

Sperling & Triplett took possession of the Medsen garage, 327 West Broadway, Council Bluffs, Iowa, on January 1. They will handle the Detroit Electric, Jackson and International cars and deal in supplies.

James Matthews, of Alva, Okla., retired hardware merchant, will shortly open a temporary garage. He has started the construction of a cement stone building on Choctaw street, which will become his permanent headquarters upon completion.

The Chester Car Motor Co., of Nashville, Tenn., has taken over the business of the Southern Automobile Co., of the same city. The latter company was founded in 1904, with Duncan F. Kenner at its head John W. Chester is president of the new concern.

The Ottawa Motor and Cycle Company, Ottawa, Ill., will soon replace its present quarters in that city with a two-story concrete block structure. Samuel and E. K. Bonnefoy, proprietors of the concern, will branch out into the automobile business more extensively.

J. P. Schneider opened his new garage at Woodward and Bagg streets, Detroit, Mich., with social ceremonies on the afternoons and evenings of the 29th and 30th ult. There were floral adornments, vocal and instrumental music, and a great gathering of prominent people.

Saul Levy, formerly with the Philadelphia Auto Tire Repair Co., has become the manager of the Philadelphia Rubber Tire Co., with headquarters at 680 North Broad street, in the Quaker City. The sole agency for Trojan clincher and solid tires has been obtained, and the company has installed a first class shop for tire repairs.

The Peck estate interest in the firm of Peck & White, carriage and automobile dealers in Taunton and Fall River, Mass., hasbeen sold to Robert Powers, for fifteen years the manager of the firm s Fall River house. The deal involves ownership in all lands, buildings, stock, etc., held by the firm in both cities and also the automobile agencies.

Pierce Arrow cars, which have not been represented in Cleveland, O., for the past season, are to be handled in that city by a newly formed company, the Western Reserve Motor Car Co., having headquarters at 5017 Euclid avenue. The officers of the concern are C. J. Whipple, president and general manager, and John H. Price, secretary.

The Heaney Automobile Co. is to open in Aberdeen, S. D., about March 1, with one of the most complete salesrooms and garages in the territory. In addition to a local agency, the concern plans to distribute machines through the State. Its organizers are A. P. Heaney and O. A. Palmlund, of Olivia, Minn., and A. J. McMichael, of Minneapolis.

H. E. Fredrickson, Sidney L. Edholm, William F. Kemp and Thomas Bromwell have filed articles of incorporation of the H. E. Fredrickson Automobile Co., of Omaha, Neb., which is to have a capital stock of $100,000. Fredrickson, who has executed a $100,000 bill of sale conveying all his personal interest in the business, is president, while Edholm is secretary and treasurer.

Robbins Brothers, proprietors of the Oxford automobile stables in Lynn, Mass., now located at 197 Broad street, will move to a new building which is to be put up for them on property just bought by L. D. Robbins at 156 Broad street. The structure as planned, will be three stories high, of fire proof construction, and wil contain elevators, turntables and a double set of entrances and exits.

President James A. Ratcliff, of the Auto Motor Car Co., Cincinnati, O., has filed suit on behalf of himself and other minority stockholders asking an accounting and the appointment of a receiver. He alleges that Reuben S. and John Payne, as majority stockholders, have sold the company to the Sid Black Automobile Co., in which he is of the opinion they hold stock, and that the sale is to the disadvantage of the minority interests.

On the first of the vear the Powell Automobile Co., of Omaha, Neb., changed its name to the Powell Supply Co and on that date moved from 2010 Farnam street, where it had been for the past year, to 2020-22 Farnam street, where it has three times as much floor space. The old name was regarded as a misnomer, as the company went into the automobile supply jobbing business exclusively over a year ago, and is not handling cars of any make.

The Inter-Mountain Automobile Co., recently formed at Boise, Idaho, with a capital of $25,000, has elected the following officers: President and general manager, J. D. Moore; secretary and treasurer, George Green, cashier of the Bank of Commerce; vice-president, C. W. Wayland. These officers, with J. D. Lamb, of Walla Walla, and J. A. Fennell, of Boise, constitute the board of directors. The company soon will open a garage on Tenth street.

The Week's Incorporations.

Detroit, Mich.—Michigan Auto Parts Co., under Michigan laws, with $50,000 capital.

Racine, Wis.—Mitchell Motor Car Co. increases capital from $500,000 to $1,000,000.

Chicago, Ill.—Standard Automobile Supply Co., The, under Illinois laws; increase of capital from $10,000 to $30,000.

Newark, N. J.—Auto Renting Co., under New Jersey laws, with $25,000 capital. Corporators—R. C. Best, J. S. Kinsey and O. E. Jackson.

Chicago, Ill.—Roos Automobile Co., under Illinois laws, with $5,000 capital. Corporators—H. D. Roos, F. E. Matthews and H. C. Bangs.

Ayer, Mass.—Reliable Auto Co., under Massachusetts laws, with $25,000 capital. Corporators—E. O. Proctor, president; W. L. Preble, secretary.

Chicago, Ill.—Emery Motor Livery Co., under Illinois laws, with $50,000 capital. Corporators—W. W. Dixon, Adolph Lindholm, W. S. Jameson.

Dallas, Tex.—Buick Automobile Co., of Dallas, under Texas laws, with $50,000 capital. Corporators—W. J. Mead, F. W. A. Vesper and Oscar Morris.

Albany, N. Y.—Interborough Auto 'Bus Co., The, under New York laws, with $15,000 capital. Corporators—J. A. Oaks, Joseph M. Oaks and Daniel T. Casey.

Philadelphia, Pa.—Dependable Auto Tire Co., under Delaware laws, with $1,000,000 capital. Corporators—F. R. Hansell, G. H. B. Martin, S. C. Seymour, Philadelphia.

Cleveland, O.—Motor Improvement Co., under Ohio laws, with $70,000 capital. Corporators—C. D. Chamberlain, Albert L. Talcott, Warren C. Platt, W. C. Lytle and F. W. Baltz.

Chicago, Ill.—Merchants' Automobile Co., under Illinois laws, with $50,000 capital; to manufacture or sell automobiles. Corporators—John C. Sumpner, John W. Wikgrin and Andrew J. Burkman.

New York City, N. Y.—Barnes-Curtiss Co., Inc., under New York laws, with $25,000 capital; to manufacture, rent and repair automobiles. Corporafors—H. B. Barnes; H. B. Barnes, Jr., and A. L. Curtiss.

Fort Wayne, Ind.—Fort Wayne Automobile Co., under Indiana laws, with $10,000 capital; to buy and sell automobiles and supplies. Corporators—Cecil E. Gibson, Chester W. Warren and Newell H. Motsinger.

Rochester, N. Y.—Kellogg Manufacturing Co., under New York laws, with $25,000 capital; to manufacture tire pumps, gauges and specialties. Corporators—G. W. Kellogg, J. F. Weller, M. R. Anstice, Rochester.

Buffalo, N. Y.—Auto-Car Manufacturing Co., The, under New York laws, with $50,000 capital; to manufacture motor vehicles. Corporators—John B. Pierce, Chicago; George W. Atterbury, George D. Pratt, Edward B. Green, George H. Frost, Buffalo.

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GERMANY AS A POSSIBLE MARKET

Some Conditions that Conspire Against the American Car—How It Might Obtain Better Recognition There.

As an outlet for American automobiles Germany is neither awaiting expectantly and eagerly for them, nor, on the other hand, is it indifferent and unresponsive if given the necessary business attention, according to Robert P. Skinner, consul-general at Hamburg. In his report as to the conditions under which American cars would have to compete in Germany, he gives informing data of the prevailing system of handling cars.

"The general reduction in the retail price of cars," he says, "has brought many buyers into the market, and nearly all good makes are represented. A few American automobiles have been sold from time to time, but as the manufacturers have made no persistent effort to sell their machines, they cannot be said to occupy any recognized position in this market. The reproach is constantly made that extra parts cannot be obtained readily, and as there are 7,000 separate elements in an automobile, that carries weight with a customer. Besides, local dealers in automobiles state that American cars are in disadvantage against those of European make in so far as the latter arrive here by rail entirely mounted —that is to say, the "chassis," whereas the body (carrosserie) is generally supplied by a local carriage builder. Automobiles from America, however, generally arrive here knocked down, and all the many single parts are carefully packed in crates and boxes, so that it requires several days' labor to mount the car. To secure a proper hold in Hamburg it will be necessary for American firms to establish a department where a full line of extra parts can be obtained at all times, to advertise extensively, and to prepare for two or three years of preliminary work before expecting much in the way of results.

"American automobiles were the first to appeal to the public on the ground of cheapness At present competition is severe, and all the famous makers are turning out attractive and serious cars at low prices, while high-priced cars have fallen generally in price.

"Retail agents in Hamburg and vicinity get a manufacturer's commission of 15 per cent., and sign a contract not to cut prices. A list of automobile dealers in Hamburg, which the consul-general states are reliable, may be obtained by the motor trade from the Bureau of Manufactures at Washington."

Friedenstein's English Company Fails.

Liquidation proceedings have been brought against the South British Trading Co., London, of which Joseph Friedenstein was the principal stockholder and managing director, and which handled several American accounts. Friedenstein was at one time in business in New York. Associated with him in the British enterprise was W. H. Wells, formerly of Brooklyn. The assets of the company now in the hands of the liquidator are estimated at £4,663 and the liabilities at £10,745.

Brown-Lipe Not to Make Axles.

Absolute and unqualified denial is made by the Brown-Lipe Gear Co., of Syracuse, N. Y., that the company is to engage in the manufacture of complete automobile axles. The report is declared by Manager H. W. Chapin to be entirely wrong, it being stated that the concern has no intention of going into competition with the axle manufacturers, but will content itself with its well established lines of equalizing, steering and transmission gears for motor cars, and special gears and sprockets.

Gabriel Horn Abandons Direct Sales.

H. Nelson Dunbar, the new sales manager of the Gabriel Horn Mfg. Co., Cleveland, O., is carrying out important changes in the sales methods governing the Gabriel horns and shock absorbers. Sales direct to the consumer will no longer be made, except in rare instances, and agents are being appointed in the various cities and towns, on whom the responsibility will devolve to see that the Gabriel products are properly installed on the owners' cars.

Hagstrom Increases Capital to $150,000.

Increased capitalization has been given the Hagstrom Bros. Mfg. Co., Inc., of Lindsborg, Kan., which makes inside blow out patches for automobile service. The stockholders voted to increase from $50,000 to $150,000, and elected officers as follows: President, William Hagstrom; vice-president, N. J. Thorstenberg; secretary, Emanuel Hagstrom; treasurer, Gustaf Hagstrom.

Continental Opens a Chicago Branch.

A Chicago branch for the Continental Caoutchouc Co. has been opened at 1412-1414 Michigan avenue. It will take care of the Continental tire business heretofore in the hands of the Excelsior Supply Co., and will cover the states of Indiana, Illinois, Wisconsin, Kansas, Minnesota, Mississippi and Kentucky.

Reo's Canadian Factory May Move.

The branch Canadian factory for the manufacture of the Reo cars is reported as about to move from Windsor, Ont., where it was recently started. St. Catherines, Ont., is given as the new location.

Allen Resigns Taxicab Presidency.

Harry Allen has resigned as president of the New York Taxicab Co., of New York City. His resignation occurred on Tuesday of this week.

HUMBER ON FINANCIAL SHOALS

Stockholders of Famous British Concern Find Affairs in Serious Condition—Plan for Reorganization Recommended.

One of England's oldest and most famous manufacturing concerns, Humber, Ltd., which at one time enjoyed world wide fame through its bicycles and which several years ago took up the manufacture of motor cars, is in serious financial straits. Its situation is such that a special committee, appointed by the stockholders, has investigated its affairs, with the startling discovery that although its production in 1908 was no greater than in 1906, its expenditures for the year were £131,000 more. In the last two years it has spent £254,000 on its plants.

To save it from ruin and to provide a reconstruction of its finances, the committee recommends a reorganization, the new company to be capitalized at £650,000, of which about half would be in preferred shares with 6 per cent. cumulative interest. In the exchange for old shares, the stockholders would increase their investment, with no diminution of par value in the shares.

A plan similar to this has been adopted in the case of Argyll Motors, Ltd., whose sensational failure was recorded some time ago. The palatial factory at Alexandria, Scotland, with gilded domes and marble halls, has been taken over by "Argylls, Alexandria," a modest reorganization to carry on the business.

Standard Roller Makes Promotions.

F. M. Germane, sales manager of the Standard Roller Bearing Co., Philadelphia, has been appointed assistant general manager of the company. T. J. Seller succeeds him as sales manager, while F. W. Lawrence has been made the western representative, with headquarters at Chicago.

Brock to Manage Thomas Motor Cab.

Marcus I. Brock has joined the forces of the E. R. Thomas Motor Co., Buffalo, N. Y., and will manage the Thomas Motor Cab Co. He was formerly assistant general manager of the A. L. A. M., later returning to the Autocar Co. to resume a previous connection as sales manager.

Inter-State Appoints New England Agent.

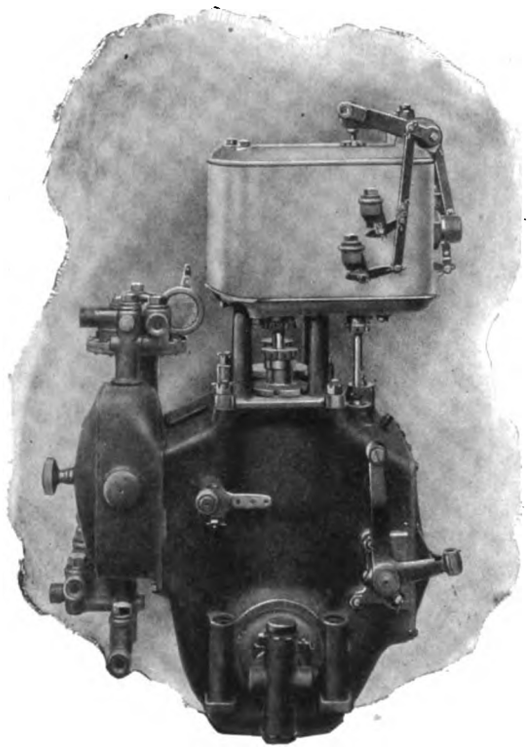
The Inter-State Automobile Co., of Muncie, Ind., has appointed the Sewing Machine Supplies Co., 22 Lincoln street, Boston, Mass., as its New England agent. The territory awarded includes all of the New England states except Connecticut.

Bowles to Manage Stearns Advertising.

George H. Bowles has become a part of the aggressive selling end of the F. B. Stearns Co., of Cleveland, O. He will act in the capacity of advertising manager.

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THE SIMPLICITY OF
The White Steam Engine



Rear View of Engine

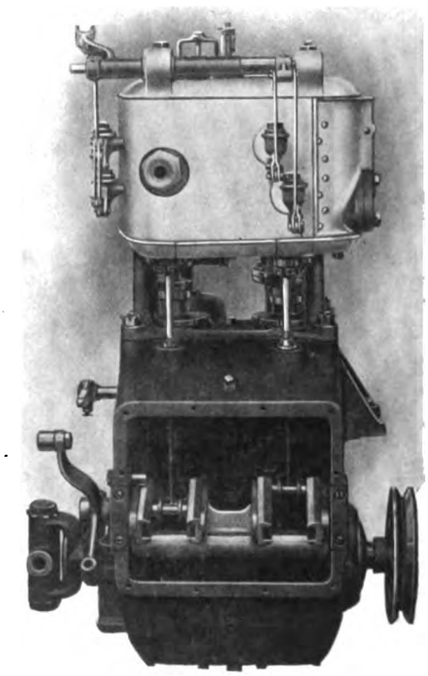
THE accompanying illustrations show the simplicity of construction of the engines used in the 20 horse-power and in the 40 horse-power White Steamers (the power plants of the two models are identical except as regards size). The White engine is more compact, weighs less and has fewer parts than any other automobile engine of similar power rating.

Each cylinder of the White engine is delivering power all of the time; that is, there is steam pressure back of each piston, pushing it in the direction in which it is going, whether moving up or down. In other words, each of the two cylinders of the White engine is equal to four cylinders of a gasoline engine, as regards continuous application of power.

It will be noted that there is no fly wheel on the White engine and that it is attached positively to the driving shaft without the use of a friction clutch. The engine is reversed simply by changing the tilt of the valve guide, shown in the lower illustration.

The crank-shaft of the White engine is a short one-piece forging with but two main bearings. The valves are driven from the connecting rods, this construction being known as the Joy valve motion. There is but one valve for each of the two cylinders. The valves are of the piston type and, the steam pressure being the same on all sides of them, the power necessary to operate them is negligible.

The White engine is the only automobile engine which develops great power at very low speeds, and even when starting. The driver of a White can operate his car at any rate of speed desired —from a "crawl" to the highest speed of which the car is capable —simply by varying the speeds of the engine. This is done by means of the throttle, the action of which is to vary the amount of steam admitted to the cylinders.



Right side of engine, with side plate removed from crank-case, showing the valve-guide

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Meeting the Modern Burden.

When a heavily laden motor vehicle crashed through a bridge at Allentown, Pa., recently, killing the chauffeur and one of his companions, the accident was not due to speed but to weight. The truck broke completely through the flooring of the bridge, falling into a creek below, where the men were drowned. Unhappily the catastrophe, although among the first of its kind, appears in the light of a leader of a series of similar disasters which may be expected to accompany the more general introduction of motor trucks of the heavy type.

According to the accounts, the truck itself weighed about four tons and the load of flour which it carried came to a little less than three tons, so that together they made a total weight of between six and seven tons. Assuming an even distribution of the weight, the point of contact for each wheel supported about two tons to which, in the case of the driving wheels, the strain of tractive effort was added. The bridge through which the truck dropped was built in 1840, when heavy motor vehicles were unthought of. Its wooden flooring had been renewed from time to time, each renewal approximately answering the specifications of its predecessor, so that in effect the situation was that of an 1840 bridge trying to meet 1909 conditions.

The structure did not collapse as a whole, having been designed to support a fairly heavy traffic for the time, but a section of the flooring ten feet long and extending completely across from one side member to the other, gave way completely, letting the truck drop backward down into the water some twenty feet below, where the vehicle was completely submerged.

Although on the outskirts of the city, it was practically a city bridge and therefore might be presumed to be capable of sustaining city traffic. But the introduction of the heavy types of motor propelled commercial vehicles has precipitated a situation which is almost entirely new to those responsible for bridge strength and safety, and one which they have not yet had brought to their attention in any very direct way.

As the perfection of comparatively small motor vehicles capable of carrying enormous loads continues the requirements thrown upon both city and country bridges will be greatly increased. Pioneer users of heavy capacity trucks can hardly expect the authorities in charge to relish the idea of making the expenditures necessary for strengthening the bridges in their jurisdiction to answer the needs of the new vehicles, and a broad view will show that unless the volume of motor vehicle traffic over any particular bridge be a fair proportion of the whole, any immediate demands of this character must be made in moderation.

To the probable purchaser of a heavy motor vehicle, the question is thus presented as to whether the physical condition of the bridges in his neighborhood will embarrass his use of them, while to the manufacturer is brought the necessity of assisting his actual and prospective customers in getting both road and bridge conditions which will make possible the most satisfactory use of the newer method of merchandise transportation.

Large users of heavy trucks may be of sufficient local influence to get the changes they want, but the biggest work can be done by the commercial vehicle manufacturers in instituting an educational campaign among county commissioners, municipal bridge engineers bridge contractors and others as to the necessity of providing for the conditions of the constantly increasing motor vehicle traffic. The expense of such a campaign, while considerable for any one manufacturer to undertake would, if divided among three or four, be quite light, while the measure of its effectiveness in producing favorable conditions when new bridges are built or old ones repaired, would greatly exceed the cost.

'Tis sweet to see Joseph Pulitzer battling on the one hand for the freedom of the press and on the other for an exclusion of automobiles from the highways of Mount Desert Island, in the State of Maine. But what can be said of Pulitzer when among his fellow petitioners is Dave Hennen Morris, who was at one time president of the Automobile Club of America, and who is still accounted an automobilist of prominence. Kind friends in New York explain that no matter what real feelings Morris may have about it, he is obliged to fall in with the wishes of his Mount Desert neighbors, such as John D. Rockefeller, Jr., Pulitzer and the like.

Unlike Pulitzer, however, Morris has never essayed the role of a national contender for equality before the law, the integrity of constitutional liberties and "classless" legislation. Apparently Pulitzer's convictions and activities along this line become anaesthetized when they conflict with his personal prejudices. Otherwise his position is inexplicable, as he is not a toady.

A staggering blow was dealt the automobile by Senator Bailey in Washington last week, when he declared that "The horse has the right to the highway by what we call in law the ancient and prescriptive right." This heritage, which even the unborn colt enjoys, is apparently denied to the oldest handiwork of the earliest motor car pioneers. Facing this unequal situation as bravely as they may, the friends of the automobile must make the best of it, and with an eye to the benefit of posterity should assert now the modern and prescriptible right of the motor car, so that ultimately, centuries and centuries hence, the self-propelled vehicle may grow gradually into the holy estate of which the horse—and presumably the cow, the ox, the pig, and the chicken—are the arrogant tenants.

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GENERAL VIEW OF THE EXHIBITION IN THE COLISEUM, CHICAGO

Photograph by Howe & Arthur

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Chicago a Blend of the Old and the New

Skillful Treatment of Last Year's Decorative Features Effects Impressive Picture of Bronzed Beauty Softened by Flowers and Potted Plants—Licensed and Unlicensed Cars Staged Side by Side and Flanked by Some New Comers, One of Them Having Revolutionary and Yet Unfreakish Characteristics.

Chicago, Sept. 8,—Advance reports made it appear possible that this eighth national show might go down to history or at least be written of as "the stained glass show." But such thoughts were vain. There is stained glass in the Coliseum, as per advance reports, but not enough of it to make anyone blink very noticeably.

But with or without stained glass the embellishment is impressive; it is full of warmth and color. Nearly everyone agrees that it is a handsome show; there are, as always, those who believe it has "faded to a finish" anything that poor old New York, not to mention Boston or Philadelphia, ever presented to the public. Frederick Eduardo Spooner, the eminent photographer and art connoisseur of Newark, N. J., whose atelier is in New York, but whose tenderer years were spent nearer the course of the opaque and unlimpid waters of the Chicago river, tritely expressed a general opinion.

"Ain't it great!" he exclaimed enthusiastically. "If the New York show cost $40,000, this one must have cost every cent of $50,000."

In Chicago figures talk with more than common eloquence.

Chicago has New York "faded" in one other respect and again is automobiling responsible therefor. "Chi" finally has adopted for its street sweepers the New York costume de rigeur. They, too, now are garbed in sometimes spotless white; but they wear not helmets, but caps with generous visors and as some of them needs must labor after the shades of night have been pulled down, a watchful city has provided means whereby the faithful workmen shall not be maimed or mangled by the swift scud of a silent automobile whose occupants may be busied in that pursuit of pleasure termed a "joy ride." Their guardian therefore has decreed that each humble street sweeper shall be his own lighthouse. When night falls, the faithful fellows press each a button and lo! there gleams from his masthead, or rather capfront, an electric light designed to guide and warn off unwary wayfarers in automobiles. The men who manicure Michigan avenue and Jackson boulevard and who so relentlessly and so rudely disturb the picnicking of the sparrows, carry in their pockets the batteries which keep their beacons aglow. These street sweeping lighthouses constitute what may be more or less expressively described as a great stunt. But as their lights protect only the north sides of the manicurists, what purpose they serve when an automobile approaches their unilluminated south side is not quite clear to a visitor. Of course they have no connection with the show, but as showing the very latest up-to-the-minute influence of the motor car, it is not fair to ignore such an innovation on an occasion such as this one.

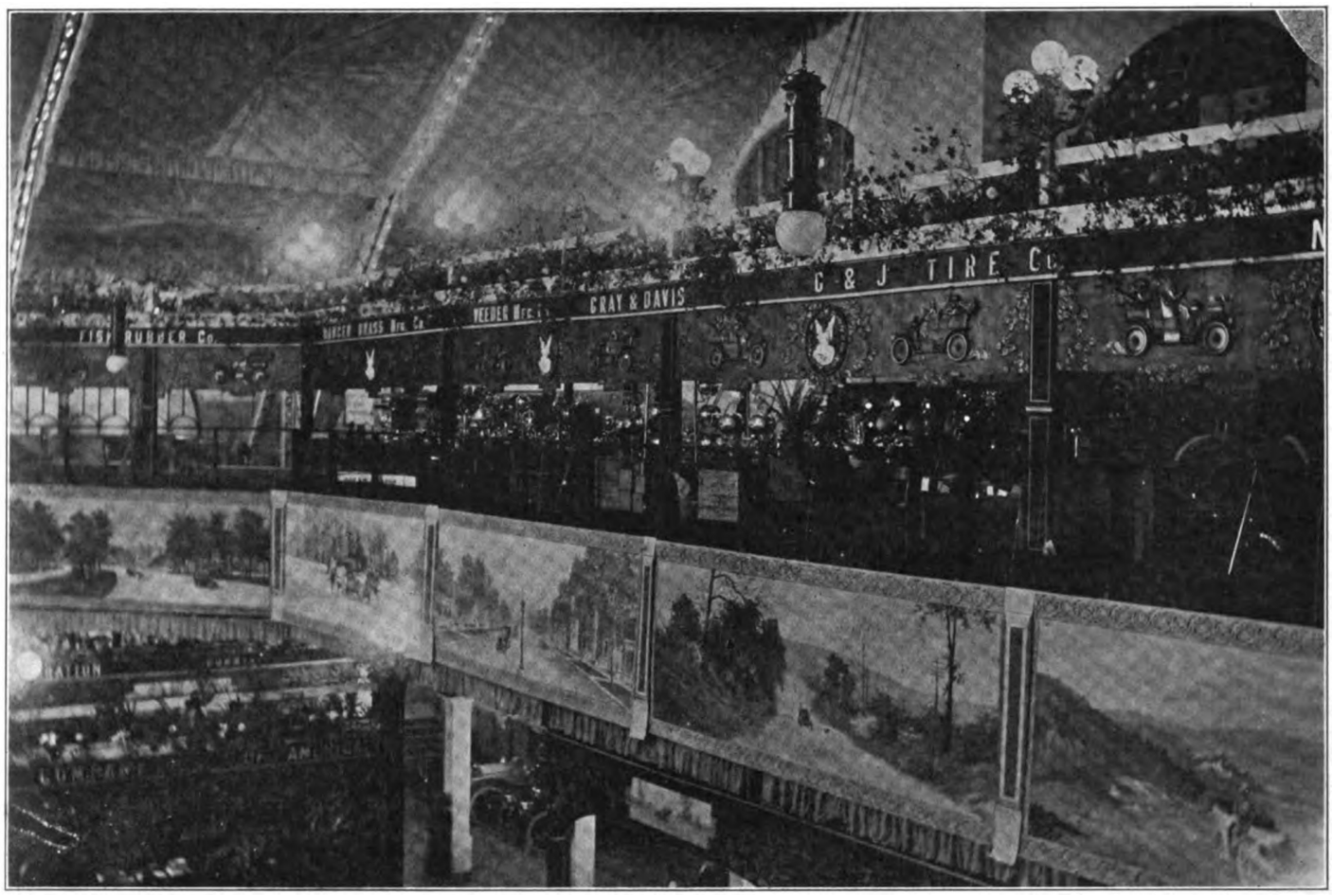
It is not detracting from its good looks to say that the queerest and most wonderful part of the dress of this Chicago show is that it very largely is made up of last year's goods. Some of that thrift which is native to New England evidently floated away out here to this gateway of the great west and was caught on the wing, so to speak. For no made-over bonnet or warmed over meal ever showed to better advantage or left a better taste in the mouth. The thrifty individual to whom the work was entrusted certainly made a splendid job of it.

The bunting is new, the potted plants appear to be new, the stained glass is new, and one of the figures formed of staff is new—the nude figure which here and there serves to join the successive archways over the exhibits on the main floor of the Coliseum—the figure of some mythological John Flannagan, or Mike McGrath that is hurling through space not a discus, nor a 56-pound ball, but the wheel of some untamed chariot. Giving impetus to any large wheel of progress is no small task even for mythological man, and judged by his visage and his cramped position, the chap in the Coliseum does not wholly enjoy the allotment of heavy labor apportioned him. When these things are specified as new, the list is about exhausted. All else was brought forward from last year's show—the arches and other staff work, the paintings, the signs, the standards or posts and the carpeting, but so skillfully have they been treated that these ornamentations show no trace of more than a twelve-months' storage in camphor or other preservative, and no one has yet been heard to grumble at the display of Yankee thrift and western ingenuity.

It all is due to the bronzing of the staff work which forms probably the chief feature of the decorative scheme. It was a happy idea and one as effective as it was happy. Last year the huge arches on which in bas relief is a stirring presentment of a chari—of an automobile race flanked by a figure of Fame holding outstretched the palm of victory—last year these were a rusty white or cream color. The mere application of bronze paint has effected a revelation. They now appear as if hammered in burnished bronze and this appearance of metallic beauty it at once so unexpected and so impressive as to compel unstinted admiration.

From the top of each bronzed arch there blossoms a tropical flower garden—ferns, palms, and trailing vines, and pink, red, white and yellow blossoms; and from each flower bed there uprears a succession of three-ball, that is, three-globe electric lights. On each red, gold edged post or standard in front of each booth there also stands a potted plant. The names above each booth are spelled out in raised white letters, also gilt edged, on a red background, exactly as was the case last year. The Modern Mercury—it is difficult to tell its gender—who has removed the wings from his or her ankles and pinned them on his or her head and who holds an automobile steering wheel instead of a serpent-encircled baton—this modern Mercury, which for several years has formed what may be styled the trademark of the Chicago show, again dominates the decorative scheme. Set in or on a cir-

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SHOWING THE "ART GALLERY" AND DECORATIVE TREATMENT OF THE BALCONY

cular plaque with red or purple background, "Merc" catches the eye wherever it may roam. It is this figure that has been reproduced in glowing stained glass—glowing because of the electric light concealed behind it. The carpeting of the floor is green, with generous red edging—another contribution from last year. Suspended from the four sides of the balcony are the large paintings of automobile scenes which constituted the "art gallery" on the previous occasion, which "art gallery" has been given a 1909 "touch" in the form of a ruffled edging of yellow bunting.

On the balcony on which are located most of the more prominent manufacturers of tires and other accessories, are the once-white, but now bronzed panelings depicting not an automobile race, or Fame, or the Wheel Tosser, but peaceful family parties or other joy riders pure and simple; and strange to say the chicken wire netting which prevents tires, speedometers and human beings from dropping down on the main floor, once more is in evidence in all its ugly nakedness—a peculiar blur on an otherwise attractive setting.

So very many hues are visible that it is hardly fair to speak of a color scheme; but if such there be it is green and yellow. Green bunting hides the roof of the building. It is in the form of huge squares, each pleated or "gathered" toward a center where it is pinned by a large yellow button. These green squares are divided by yellow "flounces" or ruffles which follow and conceal the lines of the semi-circular steel trusses which support the roof, the lines of the beams being "picked out" in electric bulbs which are half-hid and softened by the yellow rufflings. Yellow bunting covers the windows also and "tones down" the light from out of doors.

In the Coliseum Annex—ground floor—the same general plan of decoration is employed, but upstairs the beauty is again practically unadorned. The only effort at ornamentation comprises green, gold-edged frame work erected over the exhibits, in the top of which has been planted a flower bed. In the subway or basement, with its low ceiling, there is small room for the artistic hand. Yellow bunting on the walls and red signs with white lettering are all that distinguishes it.

In the First Regiment Armory where the "overflow" is located, and which is separated from the Coliseum Annex by a narrow alley, there are more bronzed arches and modern Mercurys, and the roof is concealed by green and yellow bunting, not accordeon pleated, however, but looped and broken in its center by a grouping of flags. But the distinctive feature of the Armory decoration is an "aerial flower garden" or flower show. Wires have been run from one side of the gallery to the other side, and on the wires are suspended small baskets of flowers—the sort of baskets carried by the merry maidens of the footlights. At first glance upward the effect is remarkable. Unconsciously one almost expects to hear canaries burst into song.

The doors of the show opened at 2 o'clock Saturday afternoon and long before the last exhibit was in place the spectators were present in force and their numbers gathered strength with each succeeding hour; in the evening—it was "paper night"—both buildings were packed to suffocation. It was impossible to walk. One simply was borne along by the tide of humanity. Tonight (Monday) the crowd was not so dense, of course, and progress was easier. But at that the buildings were comfortably filled, almost uncomfortably so. Although the real influx of dealers is not expected until later in the week, the vanguard is numerously present, and there are few exhibitors who are not in good spirits and radiating optimism.

"Chicago show weather" did not signalize the opening. In contrast to the usual blustering, bone-chilling atmosphere, Saturday was Spring-like and with no snow under foot, and these conditions held good until tonight when the wind rose and the rain fell, not gently, but in the Chicago "I will" fashion. And about the time the spectators

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were wending homeward, the rain changed to snow—and such snow! Giant flakes wet and full of glue, which, hurled by a twenty-mile breeze, stuck everywhere they fell. In no respect therefore, does the completeness of this show differ from its predecessors.

In Chicago there is no Mason and Dixon line—that is, no Selden or other patent line; the "pros" and the "antis" are ranged side by side; indeed, even the two well known once pro-Seldenites who so suddenly reversed their attitudes, and who were denied admittance to both New York shows, are here closeby those who view them askant. Maxwells, Premiers, Stoddard-Daytons, Mitchells and Nationals, for instance, are wheel to wheel on the main floor with Great Arrows, Popes, Stevens-Duryeas, Hayneses, Mathesons, Wintons, Corbins and others of the Selden fold, while the Rambler, which is its own association, was in the center of the more or less opposing groups. Steam as represented by "the only" White, and electricity as typified by Baker, Babcock, Woods and Studebaker, were on an equal footing with gasolene. There were no licensed cars in the Armory, but the Jackson was there and the Marmon, the Brush, the Overland and others not unknown to fame, also the Waverley electrics and the only two imported cars in the whole show; the west does not invest very largely in the foreign productions, as the importers who exhibited at previous Chicago shows learned to their cost.

The Cars That New York Did Not See and Their Features

Of course few of those who exhibited in New York display anything new. The Marmon is shown with a glass paneled hood; Apperson stages a new type of roadster body finished in Nile green, and Studebaker a berline body in brown and a suburban body in natural finish with straight back striped with black and having a collopsible rumble seat. Of the new exhibits, the Model company stages a "side attraction" in the form of a tiny reproduction of its four cylinder motor which has been speeded to 4,000 r. p. m. under its own power, and is rated at 2½ horsepower.

Most of the "action" was, however, to be found in the accessories department where the ignition people, as usual, make the most of their opportunities and literally make the sparks fly. The Electric Storage Battery Co. tickles the fancy of the moment with a "C. Q. D." sign, and the Pfanstiehl Electrical Laboratory flash their name in purple in a vacuum tube; but perhaps the most ingenious display and most novel demonstration is made by the makers of the Stromberg carburetter. Mounted on a specially constructed display stand is a standard carburetter in action. The suction is furnished by a small electrically driven air pump concealed behind the stand, while in lieu of gasolene, which is a forbidden luxury at the show, water is used in the float chamber. The only alterations in the construction of the model from a regular stock carburetter, consist in the sectioning of the mixing chamber, and the replacing of the ordinary Venturi, or mixing tube, by a glass tube, of exactly the same size and contour. Back of this tube, a small incandescent lamp is mounted, the light from which shining through the water in the tube, at first gives the impression that it is filled with flame. On closer examination, however, it affords a perfectly clear demonstration of the way in which the suction lifts the gasolene, or in this case, the water, from the jet; and after vaporizing it, draws it into the engine.

Striking Originality of the O. T.

Of the new cars at the show, beyond question the most radical and original and yet unfreakish that has appeared during recent years, and at the same time one that is full of promise in many ways, easily is the Owen Thomas Motor Car Co.'s "O. T. Six." All-metal, single-piece body construction with baked-on enamel finish, and exposed metallic parts, such as levers and handles, finished in polished aluminum; a 6-cylinder motor, with elements air-cooled both externally and internally, a single, rotary valve; and a complete electrical system for ignition and lighting purposes, which is perfectly automatic in action, are among its leading features.

Perhaps the most interesting portion of the machine is the combination replacing what in ordinary parlance constitutes the frame and body units. Here, liberal and ingenious use has been made of pressed steel to form a one-piece frame and body. The sides of the body, frame side members, running boards, fenders and tool boxes are united by riveting and autogenous welding—the body, frame sides and running boards being stamped and bent from a single piece. Although the stock employed is of but one-eighth of an inch thickness, or thereabouts, the design of the fenders, running boards and tool boxes is such as to form a true trussing system, which is reinforced by flanging at appropriate places; while the ends and dash with its arched extension are similarly united to the structure to form a complete unit.

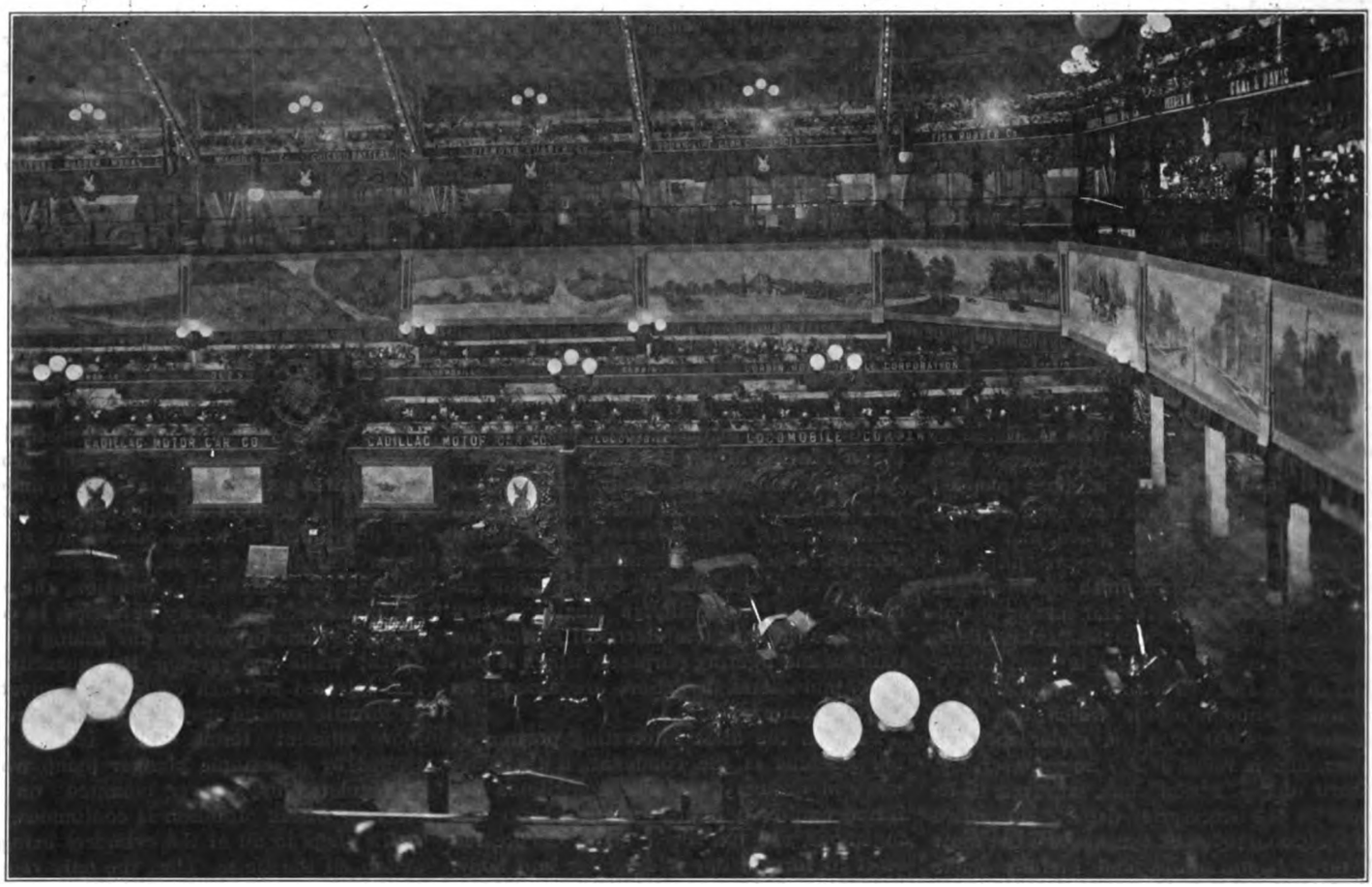
Unit power plant construction is employed, and its mounting is made to do duty in stiffening the frame. The forward support is on a tubular cross member, while in about the center of the vehicle a second cross member, of I-beam section, is made to serve a double purpose in supporting the rear of the power unit and resisting the torsional strains which are transmitted through the torque tube surrounding the propeller shaft. These two members constitute the sole transverse bracing of the structure which is not an integral part of the riveted and welded unit. As shown in the semi-obscurity of the basement under the Coliseum Annex, a plain form of roadster body is revealed with open box and superimposed seats of straight-line contour. A later construction already under way, will follow the more familiar lines of the true touring type, but without deviating from the principle of construction employed in this case.

The motor is unusual in that instead of the ordinary carburetter, through which combustible gas is drawn into the cylinders, the fuel is injected into the mixing chamber direct and while the pistons are at the upper end of the compression stroke. By altering the instant of admission, the timing of the explosion may be varied, as commonly is done by varying the timing of the spark; while by varying the quantity of fuel injected for each cycle, the equivalent of throttle control may be obtained on far more efficient terms. The fuel is controlled by a sextuple plunger pump which is regulated by a lever mounted on the steering wheel. Ignition is continuous, the spark plugs in all of the cylinders being in action all the time. Thus the only regulation required in handling the motor is that of the injector pumps.

The cycle is completed by inducting fresh air through a large port directly in the cylinder head, which is controlled by a rotary sleeve having ball bearings, and communicating with the atmosphere or a large exhaust main, according to the position of the sleeve. By permitting a portion of the cylinder full of pure air which is inducted on the suction stroke, to escape through the late closing of the valve, a simultaneous scavenging and cooling effect is secured, which coupled with the external cooling effected by direct radiation from the cylinders, reduces the cylinder temperatures to an equable amount. The general motive followed is that of the Antoinette motors, and others, but the details are original.

The ignition problem, which with the constant spark, would seem to be a troublesome one, is solved by the adoption of a special form of direct current generator, which is gear-driven from the crank shaft, and which is floated in parallel connection between the spark plugs and an original form of accumulator. In addition to serving for lamp-lighting purposes, this storage of energy is useful in starting the engine, which is done merely by converting the generator into an electric motor while the starting impulse is given the crank shaft. Automatic regulation is worked out in such a way that all that is required in order to start the motor is to close the ignition circuit. This actuates the dynamo.

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VIEW SHOWING ONE CORNER OF THE COLISEUM

as a motor until sufficient speed is attained to cause the fuel to be injected into the cylinders when the regular cycle is immediately established.

Dorris's Ingenious Steering Gear.

An original form of the differential screw steering gear is one of the 1909 improvements which have been applied to the Dorris line. In addition to the perfect control of the mechanism which the telescoping screws ensure a further advantage peculiar to this type is adjustability, which may be carried to a degree which is out of the question with gears of either the gear or worm type. Another new feature, and indeed a detail which is conspicuous for its simplicity and directness, is the speedometer device. The speed indicating device is mounted on the center of the dashboard where it is easily read from any part of the car. From this point a short length of flexible shafting runs down through the floor board and back to the rear of the gear box, where it is driven directly from the main transmission shaft by means of a metal to fiber gear couple. The entire length of shafting being either above the flooring or protected by the metal underpan and further, being free from the frequent flexures which occur when the drive is taken from one of the steering knuckles, obviously is well protected from injury and thereby is advantageously placed. At the same time, it should be observed that this is the first instance known in which the rear wheel motion has been used in any way for driving an auxiliary of this sort. Ordinarily it has been supposed that the slip of the driving wheels would be sufficient to vitiate any indications so obtained.

Other changes in the 1909 models include the adoption of a sight feed glass in the oiler, which is mounted on the right of the engine and on a level with the tops of the cylinders; and the use of copper connections on all water piping except at the radiator where the usual short rubber connector is introduced to prevent straining the fittings; and a change in the bracket supporting the cross member of the three-quarter platform spring which is used in the rear. In the touring model this permits the use of a relatively long body without necessitating an excessive length of wheel base, while in the roadster model a variation of the same construction permits the use of a short frame, comparatively speaking, without requiring any change in base from that adopted for the other car.

Even with the improvements indicated and the addition of a vertical flat tube radiator, which displaces the former gilled tube pattern, the touring model follows pretty closely last year's construction. The method of mounting the motor and of suspending the gear box on the rear motor bracket, remaining the same as heretofore. The roadster model is new this year.

Halladay's Three New Models.

Ignition by the new Bosch single coil system is one of the features which is accentuated in connection with demonstrations of the Models "E," "F" and "G" Halladay, all of which are new this year, and which, in reality are variations in body mounting imposed upon a single type of chassis. The types are classified, respectively, as runabout, detachable tonneau and four-passenger tourabout, which is another name for the general style of miniature tonneau in present popularity. This machine is driven by a 24 horsepower 4-cylinder motor of generally standard construction and measuring 3¼ by 4½ inches, cylinder dimensions. Shaft drive, including a neat form of axle-mounted change gear with enclosing torque tube over the shaft; and 32 inch wheels shod with tires of sizes depending upon the body are numbered among the more important specifications.

Model "D", as it is called, is practically a reproduction of a similar machine turned out last year. It is built with a 35-40 horsepower motor, propeller shaft drive, 3-speed selective change speed gear mounted in the waist of the chassis, and has a catalogue weight of 2,650 pounds. The machine is in no wise out of the ordinary so far as its structural features are concerned, though

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a number of details have been worked out in an original and interesting fashion. This is particularly true of the body mounting, in which, for example, the use of tufted upholstery on the back of the front seat affords a protection to the passengers in case of a sudden forward jolt, while it also does away with any possible marring of the finish such as becomes an objectionable feature of much-used cars, in many instances.

Triplet Cylinders for Berliet.

Although the connection between American and foreign interests which have been allied in producing Berliet cars in the past has now been altered considerably, it is a curious fact that the imported product should bear the imprint on all its radiator fronts of a locomotive of the American type. It is explained in this connection that the mark was adopted by the foreign makers of the car several years ago, at the time when the American Berliet car, which has since been supplanted by the American Locomotive, was being assembled almost wholly from imported parts. As showing that the two machines are no longer to be confused, it is pointed out at the stand of the Berliet Import Co., that the vehicles there shown are made to include a number of improvements which are patented under terms not shared by the makers of the Locomotive car. Thus the smaller six cylinder model is built with cylinder castings in units of three, the frame members are much deeper in section than formerly, and the construction of the shaft drive on the 40 horsepower models, is indicated as being of original and recent design. Two chassis of stock type, stripped for demonstration purposes, and a touring car, comprise the exhibit.

Enlargement of the Alco Line.

Although displayed at one of the several "private" exhibitions which took place during the period of the New York shows, the American Locomotive Motor Car, usually known as the A. L. Co., is here revealed in its various models practically for the first time this year, so far as the presence of a big audience and the comparative advantages of the contrast obtained by its position among other products are concerned. In addition to the six cylinder show chassis and the standard touring types, body mountings disclosed include two types of the popular enclosed vehicle. One is a light landaulet town car, similar mechanically to the taximeter cab which is largely in use. The other is a limousine, impressively finished in light grey carriage cloth.

Two of the models shown are new this year—the 16 and 22 horsepower types. The latter, however, as worked out in commercial service, hardly is to be considered as an innovation. The 22 horsepower model which is absolutely new, is patterned closely after this successful type. It has the same style of rear axle housing which is made in the form of a solid forging, the mechanism being so designed that it may be removed in its entirety without even jacking the wheels off the ground or disturbing the remainder of the car otherwise than to remove the hub caps and the cover plates on the differential housing. Common to both these models are the use of a four-speed selective change gear with master clutch of the multiple disc type, and low tension ignition with make and break spark.

The 6-cylinder 60 horsepower model is continued over from last year practically unchanged save for an increase in the wheel base from 126 to 139 inches. The fourth model displayed is the 40 horsepower 6-cylinder, which structurally is a practical sextuplet. Both have jump spark ignition with Bosch magneto, automatic oiling by splash, with sight feeds to the shaft, on the smaller and self-contained pump system on the larger; four speed, selective gearsets with direct connection on both third and fourth relations through a double bevel drive to the countershaft, and final transmission by side chain.

For some time it has been an open secret that the American Locomotive Co. has been laboring over the production of a commercial vehicle of the truck variety. This, it is now announced, is of 3-ton size, and is being, produced on order, though none is actually on view at the show.

New Features of the Glide.

The driver's convenience has been considered in one instance by placing the air pump for raising pressure in the fuel tank on the right side of the foot board, where it is mounted vertically inside the control levers, and ready to hand. Incidentally, this feature supplies a ready means of identifying the model "R" Glide roadster—which is entirely new this year. This model is of four passenger capacity, and has a fuel tank of oval section mounted behind the body and above the level of the chassis. A variation of the same construction also is offered in which seating capacity is provided for but two passengers, while the rear of the vehicle is occupied by a suit-case trunk, useful for the personal impedimenta of the motoring tourist.

Structurally, model "R" follows the general specifications of last year's touring model, having in fact the same engine, and the axle-mounted change speed gear which has been in use by the Bartholomew company for the past two years. The standard chassis for the 1909 models is, in fact, much the same as that used last year, but improved in a number of respects. One of these is the adoption of "clean-out" valves in the sides of the cylinders. These are in a word, plain sealing plugs inserted in the cylinder walls opposite the spark plug openings and of sufficient size so that a hooked scraper may be introduced from either side and any carbon deposit cut from the piston head when it has been brought to the upper dead center, after which it may be blown out through one of the two ports.

Another new feature this year is the steering gear, which is of the bevel gear and arm type—original in design and construction. In it, the use of a high reduction between a very small driving pinion and a large driven bevel mounted on the steering rocker shaft gives a practically irreversible effect while distributing the shock of any side stresses on the front wheels through the entire mechanism, instead of concentrating it in the gear itself. Double ignition, which is an extra option to the purchaser, is provided for in an ingenious linkage whereby both magneto and coil timers are advanced simultaneously. The self-contained system of motor lubrication formerly used in only part of the line, now has been made a universal feature. The pump, being located within the crank case, requires practically no attention from the driver.

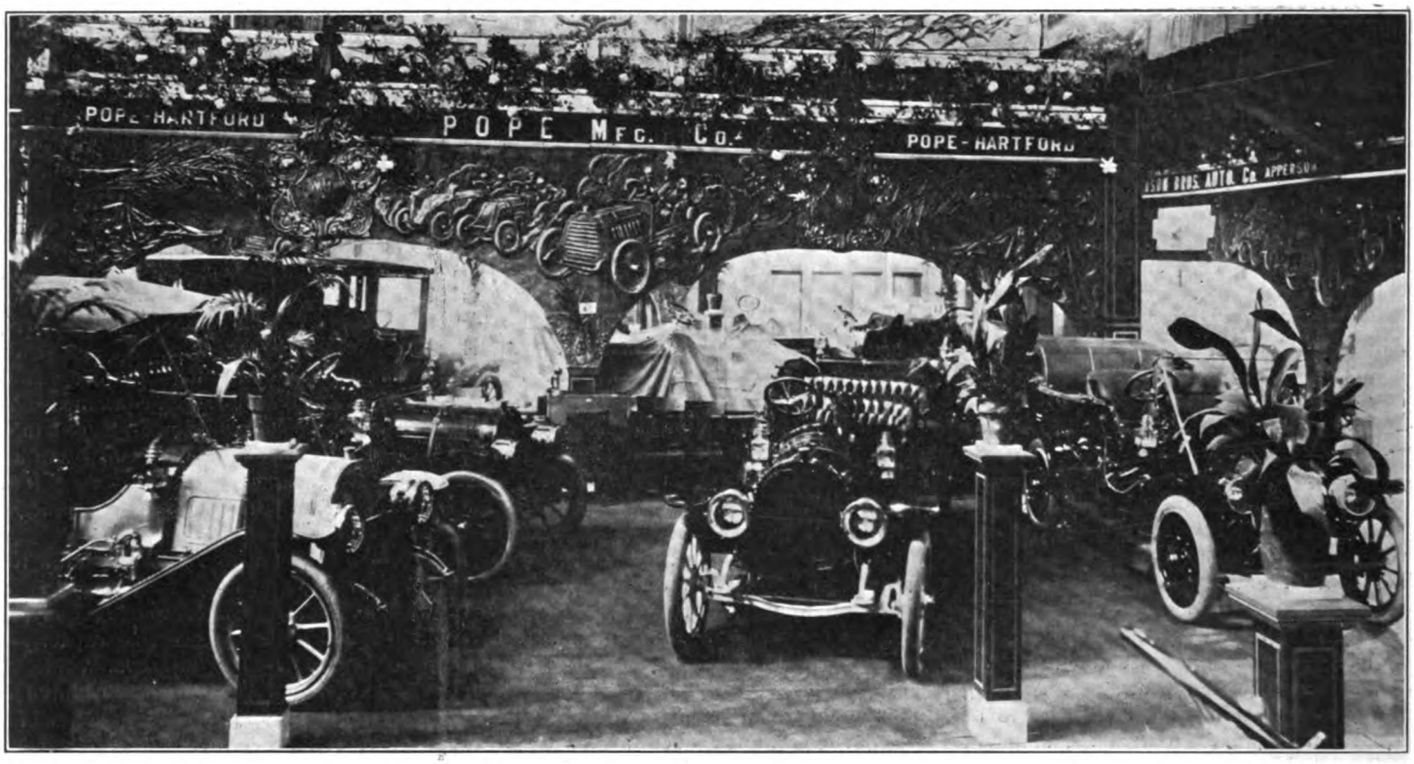
Model "G," the touring companion to the roadster type already mentioned, is built with a seven-passenger touring body, as a limousine of the same seating capacity—the two mountings being interchangeable. The Glide is one of the Timken mounted cars, both axles carrying full equipments of that type of roller bearing.

Uniformity of the Great Westerns.

In addition to "the smallest 4-cylinder, vertical motor in the world," the Model Automobile Co. also boasts the construction of "the largest 4-cylinder, 4-cycle, vertical motor in the world," which has cylinders of 16½ by 26 inches bore and stroke, a rated output of 500 horsepower, and runs on producer gas. The peculiar relationship between this motor which is used in electric lighting service, the midget on view at the show, and the various motors employed in the regular stock models of the Great Western car is that they are identical in design and construction and different only in size. The principle of uniformity in design, however, is not confined to the motors alone. The four types of car produced are virtually four different sizes of the same product. Three of them are new this year, that is to say, models 20, 21 and 24, and their horsepower rating are, respectively, 30, 40 and 50. Model 22, also a 50 horsepower machine, but of larger capacity and heavier construction in general than Model 24, is in its third year of service, though it has not been exhibited before.

These characteristics may be noted about the machine: The cylinders have inlet valves mounted directly in the head, and actuated by an overhead beam and tappet rod, and exhausts set in effect pockets which are brought forward slightly instead of being placed across the car, whereby a better arrangement of the cams is secured than would be possible otherwise; and a specially constructed exhaust manifold of increasing diameter frame front to rear, leading to an exhaust pipe of practically four times the area of any single exhaust part—the intention being to avoid all back-pressure in the main by this means. The

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POPE EXHIBIT, INCIDENTALLY SHOWING THE AUTOMOBILE RACE IN "BRONZE."

transmision, which is by cone clutch, selective change gear and propeller shaft, is provided with double universal connections between gear box and axle.

Auburn Adopts Four Cylinders.

Auburn cars, which heretofore have figured only in double-opposed models, this season have blossomed out in a new departure in the shape of a very neat appearing quadruple type, which possesses a number of meritorious features in addition to the interest which, as always is the case, devolves upon the adoption by a manufacturer of several years' standing of a type entirely different from anything before produced. Aside from being in many ways a more pretentious machine than has before gone under this name, the car itself has several points which are worth noting, though none which are in any way radical departures from what is generously termed standard construction.

It has a four-cylinder, 4 by 4 motor, rated at 25-40 horsepower, a three-speed selective gearset, mounted in the waist of the chassis on a substantial channel steel sub frame, and shaft drive. The transmission is protected from warping of the frame by double universal joints between the fly wheel and the gear box, while the flexibility of the propeller shaft system is sufficient to safeguard that section of the chassis from injury from this source. The rear axle is of the semi-floating type, the torque tube, which is hung on the rear bearing of the gear box, being relieved of all driving strains by the radius rod driving system. Ample protection against wear is afforded all vital parts, this principle in the case of the clutch, resulting in the enclosure of that member, which is of the multiple disc variety, in the same casing with the change gear system.

The twin-cylinder opposed model, which formed the mainstay of last year's product, is continued with various alterations, mostly of a minor nature. The engine employed is rather larger than the average of its class, being 5¼ by 5 inches cylinder dimensions. Both chassis types are built to specifications for touring bodies, as well as the double and single rumble types of roadster. The effect of these options thus is to constitute a line of six machines to all intents and purposes.

Meteor's Marked Originality.

Although not appearing at Chicago during the past two years, the Meteor car has been very much in evidence in its own particular territory, and now comes to the front in the form of a rather impressively designed touring car and roadster of the heavier type, in which are involved a number of ideas which are out of the ordinary. Thus, for example, the use of steel castings has been eliminated in favor of manganese bronze castings and steel drop forgings. The unit type of power plant mounting has been adopted, but in the form of a sub frame which has a flexible or rather yielding support on the frame. Another point of interest is in the method of "hooking up" the rear axle, which in a number of respects is different from either of the several methods in common use.

The sub frame, or power plant skeleton just mentioned, instead of receiving its support from the main frame at the sides, front and back in the usual fashion, is carried at the sides, at a point midway its length, where the sections carrying the motor and gearset, respectively, and which are channel steel, are joined by massive bronze castings, which also afford the supporting properties necessary. A detail to be noted in passing, is that these members also furnish means for supporting the auxiliaries, such as the oiler, the unusually large centrifugal water pump, and the magneto. Beneath these accessories, and between the fly wheel and the gear box, a tubular cross member from side to side of the main frame, serves to tie that structure and also to afford the power plant its central support. The front and rear ends of the plant are hung by means of rocker bearings in the centre of the frame, one beneath the radiator, and the other on the lower side of a cross member which spans the frame just back of the gear box.

The engine, which carries individually cast cylinders of the T-head type, is noteworthy in respect to the method of connecting the water leads, which instead of being taken in and out at the top and bottom respectively as in the ordinary method of construction, are led to and from the tops of the cylinders at diametrically opposite points. The main circulation is thus effected about the combustion chambers, while the currents to the lower and cooler regions of the jackets are secured by means of deflector plates which are carried on the lower side of the jacket covers which close in the tops of the cylinder units, which direct the flow in the desired direction.

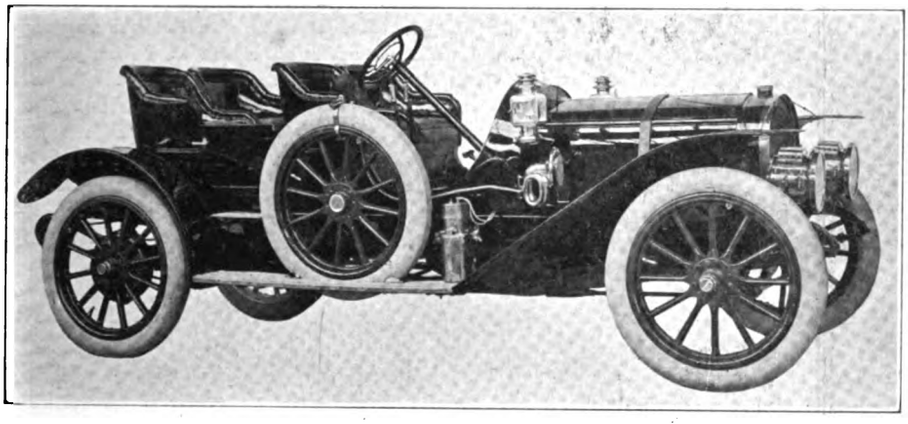
Radius rod drive, which is accommodated by inserting a slip joint in the torque tube,

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is provided, the system being worked out with an eye to great strength, with a maximum of flexibility, and all obtained along lines which are by no means hackneyed, if not absolutely original. Indeed, the combination obtained in the rear mounting, appears to be distinctly out of the ordinary. That this is necessary because of the load which may be imposed upon the mechanism, is shown by the fact that the motor, which is modestly rated at 50 horsepower, has cylinders which are 5 by 5½ inches.

Spare Wheels on the Ramblers.

Although it has been described and commented upon already since it appeared for the first time, many weeks ago, the Rambler product in its various phases, has not previously appeared at either of the great shows, its unveiling in New York having been at a "private" exhibition held at the headquarters of the distributors for the local territory. In addition to this fact, however, it merits special mention as a number of new features have been added from time to time since the first announcements of the 1909 line. The spare wheel, which is an adaptation of the ordinary artillery wheel construction such that a spare, which always is carried on the machine, may be adapted to either corner of the car in the event of either a deflated tire or an accident, is one of them. This device is of broader utility than the ordinary spare wheel, so-called, in that it is suitable to replace not only a damaged tire, but also a damaged wheel in its entirety. Another of the new devices is a windshield which has only recently been brought out, and which possesses the feature of ready adjustability to any angle, since it is of the divided type.



RAMBLER, MODEL "45"

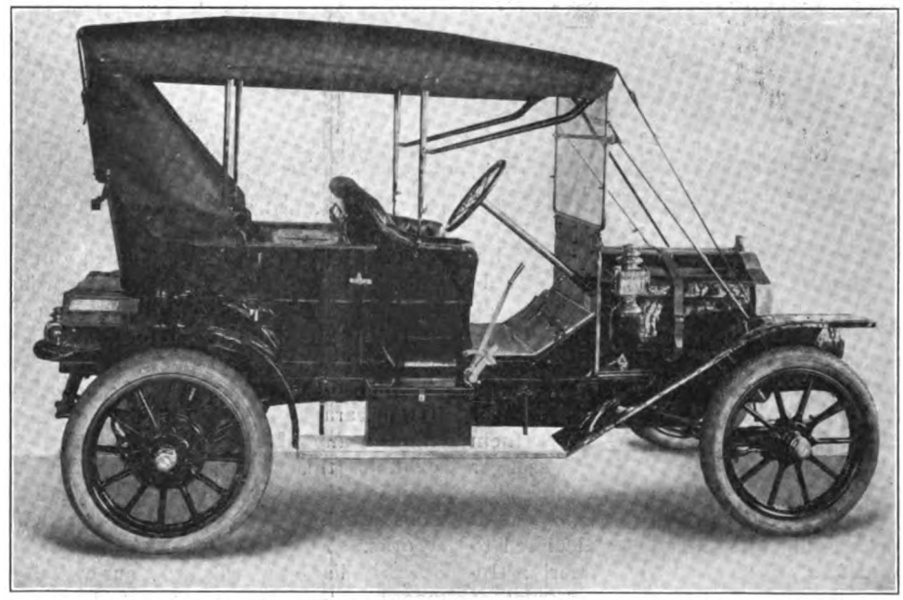
Of the cars themselves, Model "45" is new—even to the 1909 line. It is much the same as the previous model "44", but has 125 inch wheel base instead of 112, as on the other model, carries seven passengers, and in general is a larger and more commodious machine. In common with Model "44", then, these features may be noted as novelties in the latest of Rambler constructions: Triple action springs, which are calculated not only to absorb minor vibrations, but also to act as veritable shock absorbers in checking the rebound after impact; ¼-inch deeper frame members than were used last year, improved lever connections between the change speed gear and the gearset, a direct acting clutch, instead of the reversed conetype formerly employed; and a simple and ingenious method of spark plug connection which takes the form of a switch, and which does away with the loose-ended effect so often found where the high tension wires are led directly to the plugs and where frequent renewals and replacements ultimately tend to destroy the effectiveness as well as to mar the appearance of the ignition system.

As heretofore, the four-cylinder vertical motor is employed, as is the method of mounting the gearset directly on the torque tube. This forms a practical equivalent of the axle mounted gearset, without the chief objectional feature of that arrangement, which is the effect of shock on the rear axle as transmitted to the gears and shafts. Though the effects produced in this way actually are less serious than they would seem to be likely to be, it is thought that by throwing the change gear group well up to the forward end of the torque tube and thus placing most of its weight on the bearing which supports that member, a lighter axle, less severe on tires, results which also produces a durable and generally more satisfactory transmission system.

In connection with demonstrations of the theories involved in the various structural details of the cars, explanations of the principle of offsetting the cylinders and so of reducing the wall thrusts upon the cylinders and pistons are elucidated by means of a very simple working model, small enough and light enough to be held in the hand; yet practical enough to show by the various adjustments which are possible, just how the advantage is obtained by this practice, and where the advantage lies.

Firestone-Columbus a Newcomer.

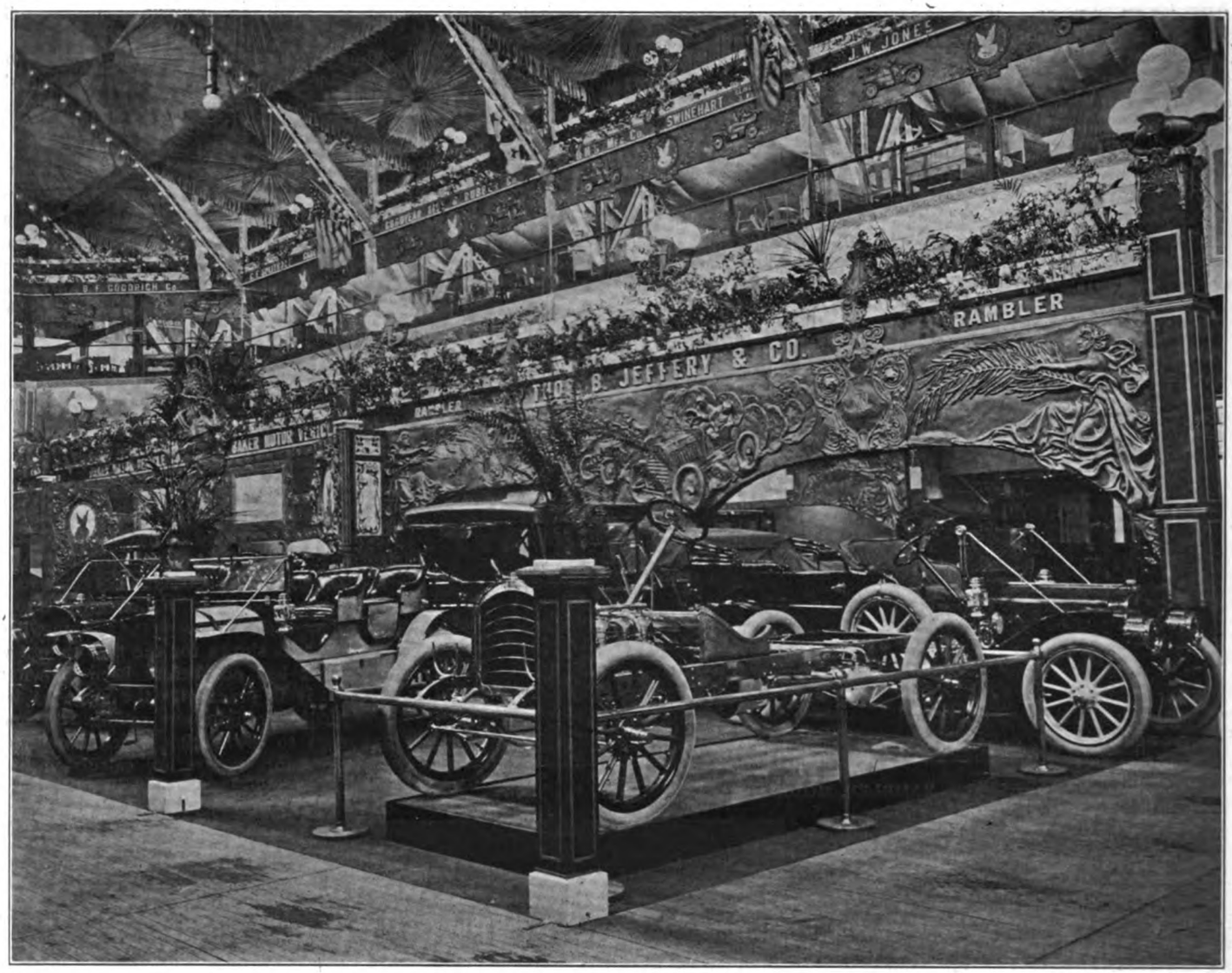
One of the newcomers at the show—totally unheralded to the public, though for some time expected in trade circles,—is the new Firestone-Columbus, produced by the Columbus Buggy Co., and forming its second incursion from the electric into the gasolene field. The first, a high-wheeled buggy, was shown for the first time a year ago, but has not before been shown this year. It is practically the same as when originally brought out saving for sundry changes to the engine which though of a minor nature nature are calculated to improve its power and reliability.



FIRESTONE-COLUMBUS 30 H.P. TOURING CAR

The new gasolene vehicle is of the regular four-cylinder type, and is a neat little offering of the medium-priced-completely equipped type. As shown, it mounts a five-passenger touring body of neat delineation and original in the manner in which the rear is extended to form a support for the trunk rack, which thus is robbed of its occasional obtrusiveness as found in other designs. It also is built in baby tonneau form.

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RAMBLER EXHIBIT, INCIDENTALLY SHOWING THE DECORATIVE "SUNBURSTS" CONCEALING THE ROOF

It is driven by a 32 horsepower, four-cylinder motor, of 4½-inch "square" cylinder dimensions, has a 3-speed selective gearset, shaft drive, 110-inch wheel base, and 34 by 4-inch tires.

Longer wheel base and larger motor equipments in the electric vehicles shown, are the principle differences between them and last year's models. A four-passenger coupe type is new this year and embodies among other features a novel arrangement of the steering lever which is calculated to make it less obtrusive than formerly. Instead of being brought up at the front of the seat, the steering post now rises at the seat end, while the lever is offset to the front sufficiently to bring it into an easy steering position.

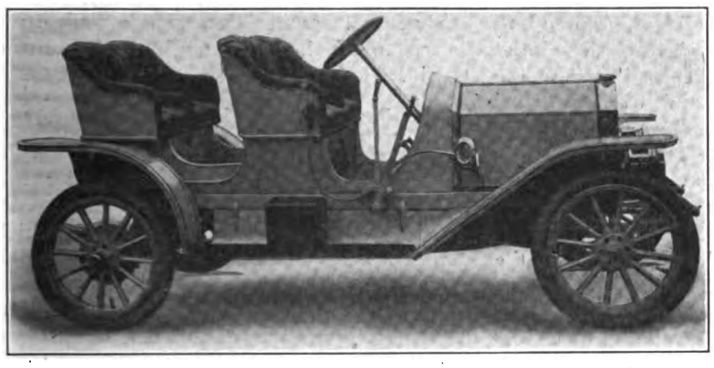
Stage Larger Types Than Before.

Both in the case of the Oldsmobile and Buick cars, which have not been shown except in salesrooms before this year, so far as the greater exhibitions are concerned, are shown the products of concerns which from a beginning with cars of small and light construction, have reached out after the market for more pretentious products. This movement has been observed in many cases in the industry before, and is constantly reappearing in one guise or another. Another of the machines which has made its appearance at the Coliseum for the first time at any of the 1909 shows, and which exhibits this trend, is the Emancipator, which is the product of a reorganization, or substantially that, of the Aurora Motor Works. The Emancipator in its latest form is distinguished by a four-cylinder opposed motor—rare form in itself—which is noteworthy in that the opposing pistons instead of being linked to the crank shaft by a pair of connecting rods, are joined together by webs which are cast integrally with them so that they act as units, and therefore require but a single connecting rod for each pair of cylinders. The mounting of this vehicle is a neat form of straight-line touring body, of approved pattern, and rather diminutive size. In general, the vehicle, apart from the motor, represents a reconstruction of the old Aurora machine almost exactly. A change in the form of radiator employed, and several other alterations, serve to form a distinguishment which, to the eye of the casual visitor, hardly is sufficient to warrant its being known by the new name.

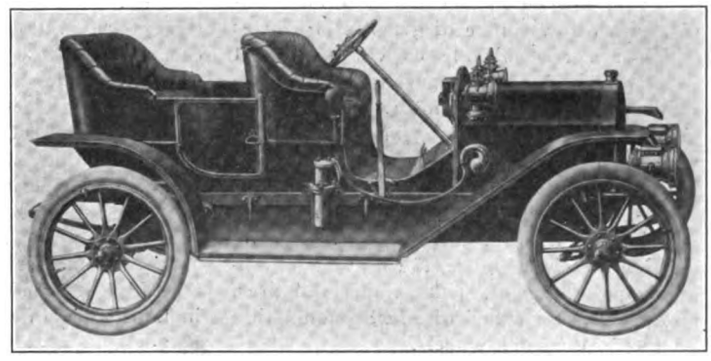
Unit Power Plant in the Ricketts.

Six-cylinder motors are by no means lacking at the show, and it is noteworthy that, contrary to what frequently has been the case in previous years, several of them are to be found on the new cars. One of these, which has not before been shown, and which, indeed, is a brand new machine, is the Ricketts—a South Bend product. In this car the three-point suspension and unit power plant ideas have been adopted with good effect. The motor has its fly wheel mounted in front, valves in the heads worked by tappets and rocker beams, and the rear of the crank case is jointed directly to the gear housing, the latter also carrying the brake and clutch pedals, so that the plant is absolutely independent of the frame. An original system of interlock-

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GREAT WESTERN MODEL "20 A"



HALLADAY ROADSTER, SURREY TYPE

ing the clutch and brakes, as well as of actuating the gears, reveals some little study of a perplexing problem. The rear axle is of the semi-floating type with a combination of ball and roller bearings. The propeller shaft is enclosed in a combined torque and driving tube, which is rigidly braced from the axle ends to prevent any possibility of disalignment.

Mixing Manifold on Pittsburg Six.

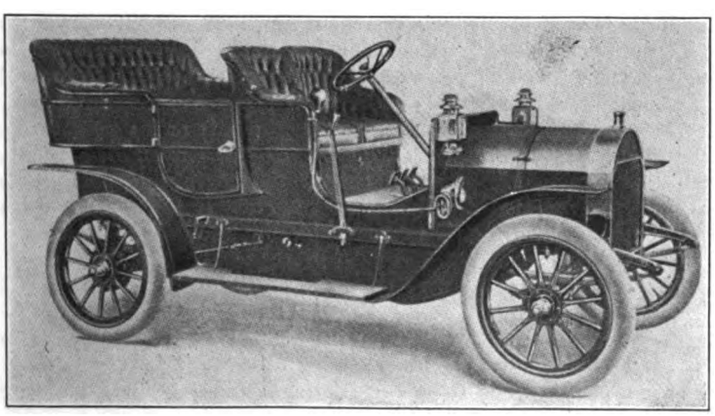
In the Pittsburg Six is found a new car of standard proportions which so far as its details are concerned, is lacking in extraordinary features—which is to say, it is of regular construction practically throughout. It is built in runabout, four-passenger roadster, and touring forms, on the same chassis, and has a motor rating of 70 horsepower. An unusual feature of the motor construction, one of the few in the machine, is the intake manifold, which offers a novel solution of the problem of distributing the gases uniformly to the various cylinders. Instead of assuming any of the branched formations which are in more or less common use, the manifold is made in the form of a closed oval and very much flattened, the uptake from the carburetter being on one side, while the leads to the various cylinders are on the other. As a result of this, the flow of gas is divided into two currents which meet at the centre on the cylinder side of the loop, and which are constantly surging back and forth in the tube, thus becoming thoroughly commingled. An absence of carburetter troubles of all sorts, as well as uniformity of action under all sorts of running conditions, are claimed by the makers to be attributable to this peculiarity.

Advanced Design of Rider-Lewis.

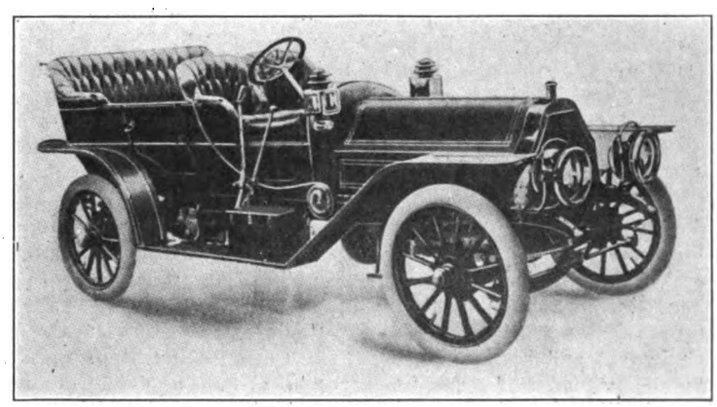
Another example of six-cylinder construction in novel guise, is found in the Rider-Lewis, in which an original, and it is claimed, exclusive method of cylinder design has been adopted. In this, adequate cooling properties are obtained for the cylinders by casting them individually and with spherical upper sections, whereby a great volume of water may be concentrated about the combustion chambers. The valves are mounted in the heads, inclined toward each other, and facing oppositely across the car. The valve gear is of the overhead type, a single shaft running the length of the motor over the tops of the cylinders, and driven by a vertical time shaft which is placed in front. The cams and rocker arm contacts are enclosed by neat individual aluminum housings, which afford ample protection from dust and dirt and at the same time increase the apparent simplicity of the design. A wholly up-to-date feature, never seen to any extent on machines until this year, also is found on this chassis, in the suspension of the motor by means of channel steel cross members, which are bolted to the upper side of the crank case. Another feature of the car which is in line with most recent practice, is the use of the unit type of rear axle transmission—the change speed gear being mounted in common with the differential housing. The rear axle itself is of the semi-floating type, while the front one is of I-beam section. The dropped type of frame is employed, with three-quarter elliptic springs. Both roadster and touring models are produced, but only the touring form is displayed at the show, in connection with the show chassis.

Motor Buggies.

The basement under the Coliseum Annex, though cold and cheerless in respect to climatic conditions, rings with advantages of the motor buggy, as proclaimed by its numerous adherents. Here may be found, among others, the Schacht, which was displayed in New York, and the Bendix, which is unlike the former in that while that follows pretty closely the lines of carriage construction, except as the demands of the more severe power plant may have required stiffening, the latter is practically an adaptation of the elements of the full-fledged touring automobile to the high-wheeled realm, with an accompanying characteristic appearance which is about its only distinguishment as a motor buggy. The term "Hi-Lo" applied to this vehicle does not necessarily indicate that it is transformable at will from the status of the large wheel to that of the small, but rather that



AUBURN MODEL "G"



RIDER-LEWIS TYPE "VIII" TOURING CAR

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it is a high-wheeled machine pure and simple, with a low centre of gravity. Features which are recognizable as coming direct from the field of the touring car are the twin cylinder vertical motor, multiple disc clutch, selective sliding gear transmission with final drive by means of double side is included in the regular equipment of the chains, and the Splitdorf magneto, which vehicle, and without extra charge. Despite its high-wheeled feature, the regular mounting being 42 inches, with 2-inch solid tires, an option is furnished of 3-inch pneumatics, mounted on 36-inch wheels.

Staver's Rear Axle Gear Change.

The use of such parts as have come to be associated with the larger machines only, is not confined to a single machine on view at the show. In the Staver, another example of its use is found. This machine is in its third season of show existence. The model on view, however, is entirely new—never has been shown before—and is a radical departure from anything before attempted by its makers, who are long experienced in the field of carriage construction. The use of shaft drive here is introduced, together with a four-cylinder vertical motor, water-cooled, of 3¾ by 4½-inch cylinder dimensions, and rated at 22 horsepower. A two-speed sliding gear transmission, mounted on the differential housing, is another very modern feature, which is transferred to the high-wheeled field for the first time in this instance, as is believed. A pressed steel frame, tubular front axle, and internal expanding brakes adapted to throw out the clutch when applied, are other features. Two sizes of chassis are built to accommodate rumble runabout and surrey types of body, the latter being of 100-inch wheel base and the former practically the same thing, but shortened to 92 inches in the base. The standard tire equipment is 38 by 2-inch solids, but 32 by 3-inch pneumatics are offered as an option to the purchaser who prefers wheels that will provide a more conventional effect in the running gear.

Motor Variations in the Mier.

Still another development of the full-grown automobile idea is revealed in the case of the Mier, which is built in two types, differing principally in the motor construction. In one case, this is of the twin, vertical type, while in the other the twin opposed type is used. The former is of 4 by 4-inch dimensions, and the latter is 5 by 4. In both instances, the double-disc type of friction change gear is employed, with double side chains to the rear wheels. Four types are built, varying in price and in general characteristics hinging about the differences brought about by the use of the two types of motor, and by various methods of equipment and body mounting. The types known as "C" and "D", for example, are practically the same except that one is designed for two and the other for four passengers. Though belonging to the motor buggy class, these vehicles hardly come into the category of the high-wheeled contingent, since the wheels are smaller than the average. In fact, 32 and 34-inch wheel diameters are called for in the front and rear mountings, and the tires are 1½-inch, of the solid, side wire type.

Duer's Selective Bevel Transmission.

In the Duer is found an example of the true high-wheeled type, in which the original principle of the cable drive still is adhered to as is the unique method of changing gear, in which a system of bevel pinions is employed which may be swung bodily forward or backward to apply the tension to the cables or release it as the case may be. A further refinement in this system is the application of the selective principle whereby throwing the change speed lever into one or another of the several slots in its sector, serves to mesh one or another of the bevel groups; thus altering the speed reduction between the engine and the driving sheaves of the final transmission. The double opposed type of motor is employed, as heretofore, but more power is obtained through the use of 4½ by 4 instead of 4 by 4-inch cylinders. Other changes introduced into the latest models include an increase in axle sizes from 1¼ to 1⅜ inches, and a small increase in wheel diameter.

Another innovation in this connection is the production by the Chicago Coach & Carriage Co., makers of the Duer, of a high-wheeled delivery wagon, which has the same power plant, but wheels, springs and tires larger than those employed on the roadster or buggy type. Mechanical intake valves, instead of the automatic valves formerly employed; a fan made integral with the fly wheel, and a number of conveniences embodied in the design, whereby repair work may be facilitated; are numbered in the advantages claimed for the particular construction here adopted.

High Power for the Fuller.

One of the high-wheeled class, which appears at the show unheralded as far as the preliminary list of exhibitors is concerned, is the Fuller, in which use is made of the double-opposed, water-cooled type of engine, such as is familiar in the better class of runabouts of the standard class of construction. Three point suspension of the power plant, planetary transmission with shaft drive to the live rear axle and 36 by 2-inch tires, of the semi-solid type, are among its more conspicuous features. As revealed at the show, it mounts a body which is a fairly close approach to the so-called Democrat wagon of long usage in the horse-drawn field, and which is capable of seating four passengers, but may be altered by the removal of the rear seat, to accommodate a moderate amount of luggage. It may be mentioned in passing, that the rated motor output of this machine, which is 15-18, is higher than the average. Happily, however, the general construction of the vehicle appears to be heavy enough to stand the strain.

Friction Drive is Zimmerman Feature.

Still another of the much-heralded motor buggy type, is the Zimmerman, which follows the principles of opposed motor construction and friction transmission which find so many staunch adherents in builders of machines of this general class. The motor, which is air-cooled, is placed in front transversely of the machine, and enclosed by a hood of standard automobile pattern. From the motor, a driving shaft transmits the power to a driving disc, which is slidably mounted on the shaft, and which is adapted to contact with a pair of discs on a mounted transverse counter shaft, from which the rear wheels are propelled by the familiar side chains. The motor is given a rated output of 14 horsepower, and the total vehicle weight is set down at 1,250 pounds. The tire sizes requisitioned by the standard specifications are 37 by 1½ inches.

Clark-Hatfield's Solid Live Axle.

Under the name Clark-Hatfield, a reconstruction of the old Hatfield high wheeled motor buggy appears, in which many of the features of the older car are reproduced. An alteration in the position of the motor, which now is placed in the rear of the body instead of under the centre, as formerly, and an increase in its size and power, are among the more important changes. Single chain drive to the live rear axle is employed, and in this connection, use is made of a very ingenius system of clutching the wheels to the driving axle, which is solid, instead of employing the more common differential. As in the common or field variety of sewing machine, to take a homely illustration, the wheels while driven forward, are free to rotate in the reverse direction if required. This provides for the necessary differentiation when making turns. In order to reverse, however, it is necessary to throw over a special driving drum which is mounted on the axle in such a way as to free the normal engagement of the forward driving ratchets and engage in their stead a set of revers ratchets with their corresponding pawls, which permit the same driving and differential action to be secured in the reverse direction of travel. This movement, however, is secured without difficulty on the part of the operator, as the movement of the driven disc of the friction gear, into the reverse position, is sufficient to bring about the desired transfer in the relation of the driving clutches.

Randolph's Thermo-Syphon Cooling.

Commercial vehicles, though lacking the sturdy representation which last year's individual section called forth, yet are present at the show in very respectable numbers. This fact does not appeal to the average visitor, however, unless he happens to take

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particular note of the fact, for such commercial cars of one type or another as are in evidence, are so widely scattered throughout the immense area of the two sections that they make no impression whatever as an independent class. Nevertheless, a number of useful and interesting constructions are on view—such as the Grabowsky, Rapid, Thomas cab, and the numerous other enclosed town cars, many of which were exhibited at one or the other of the two recent New York shows. The Brush runabout version of the light delivery idea, and an adaptation of the same principle to the high wheeled field, which is shown on the stand of the Anderson Carriage Manufacturing Co., are revelations in their way, though the former, in common with another of the high wheeled commercial machines which is shown in Chicago at this time, was on view at the Grand Central Palace in New York.

An entire newcomer at the show, however, though already more or less known locally in Chicago, is the Randolph. This machine is shown only in the form of a fairly heavy delivery wagon, mounted in three different styles of body. It is explained at the booth, however, that this is but one of an extended line of vehicles, which range in load capacity from 1 to 7 tons, the line including machines of 1, 2, 3, 4, 5 and 7 tons capacity, respectively. Double opposed, water-cooled motor construction with convenient front mounting for the power plant, are among the more salient features of the examples on view. Friction drive is another feature which is likely to be noted. Enquiry, however, reveals the fact that it is applied only to this particular type of vehicle. The larger machines have 4-cylinder, upright engines, and the common form of selective sliding change gearing. As a matter of fact, even on the smaller cars, the purchaser is afforded an option between the friction and selective sliding types of gearing. Another point is the drop frame, the lower section being employed to support the motor.

Summary of Exhibits at the Chicago Show

AUTOMOBILES.

American Locomotive Co., New York—American Locomotive gasolene cars.

Apperson Bros. Automobile Co., Kokomo, Ind.—Apperson gasolene cars.

—Anderson Carriage Co., Detroit, Mich.—Detroit electric cars.

Anderson Carriage Mfg. Co., Anderson, Ind.—Anderson motor buggies.

Atlas Motor Car Co., Springfield, Mass.—Atlas 2-cycle gasolene cars.

Auburn Automobile Co., Auburn, Ind.—Auburn gasolene cars.

Austin Automobile Co., Grand Rapids, Mich.—Austin gasolene cars.

Babcock Electric Carriage Co., Buffalo, N. Y.—Babcock electrics.

Baker Motor Vehicle Co., Cleveland, O.—Baker electrics.

Bartholomew Co., The, Peoria, Ill.—Glide gasolene cars.

Bendix Co., The, Chicago, Ill.—Bendix motor buggies.

Berliet Import Co., Chicago, Ill.—Berliet gasolene cars.

Black Mfg. Co., Chicago, Ill.—Black motor buggies.

Brush Runabout Co., Detroit, Mich.—Brush gasolene cars.

Buckeye Mfg. Co., Anderson, Ind.—Lambert gasolene cars.

Buick Motor Co., Flint, Mich.—Buick gasolene cars.

Cadillac Motor Car Co., Detroit, Mich.—Cadillac gasolene cars.

Cameron Car Co., Beverly, Mass.—Cameron gasolene cars.

Cartercar Co., Pontiac, Mich.—Cartercar gasolene cars.

Chalmers-Detroit Motor Co., Detroit, Mich.—Chalmers-Detroit gasolene cars.

Chicago Coach & Carriage Co., Chicago, Ill.—Duer motor buggies.

Clark-Hatfield Auto Co., Oshkosh, Wis.—Clark-Hatfield motor buggies.

Columbus Buggy Co., Columbus, O.—Columbus electric cars.

Corbin Motor Vehicle Corporation, New Britain Conn.—Corbin gasolene cars.

Dayton Motor Car Co., Dayton, O.—Stoddard-Dayton gasolene cars.

De Luxe Motor Car Co., Detroit, Mich.—De Luxe gasolene cars.

Dorris Motor Car Co., St. Louis, Mo.—Dorris gasolene cars.

Elmore Mfg. Co., Clyde, O.—Elmore 2 cycle gasolene cars.

Emancipator Automobile Co., Aurora, Ill.—Emancipator gasolene cars.

Everitt-Metzger-Flanders Co., Detroit, Mich.—E-M-F. gasolene cars.

Fiat Automobile Co., New York City—Fiat gasolene cars.

Fort Pitt Motor Mfg. Co., New Kensington, Pa.—Pittsburg "Six" gasolene cars.

CENSUS OF THE SHOW.

Gasolene:		
One cylinder	6	
Two cylinder	49	
Three cylinder	5	
Four cylinder	186	
Six cylinder	32	
Total complete gasolene		278
Water cooled	250	
Air cooled	28	
		278
Vertical	234	
Horizontal	44	
		278
Four cycle	269	
Two cycle	9	
		278
Steam		4
Electric		32
Total Complete Vehicles		314
Touring cars	126	
Roadsters	106	
Closed cars	52	
Buggies	24	
Commercial vehicles, standard type	6	
		314
Chassis:		
Gasolene	63	
Steam	1	
Electric	3	
Total Chassis		67
Total four-wheeled vehicles		381
Total motorcycles		72
Total all vehicles		453

Fuller Buggy Co., Jackson, Mich.—Fuller motor buggies.

Gaeth Automobile Co., Cleveland, O.—Gaeth gasolene cars.

Grabowsky Power Wagon Co., Detroit, Mich.—Grabowsky commercial trucks.

Franklin Mfg. Co., H. H., Syracuse, N. Y.—Franklin gasolene cars.

Haynes Automobile Co., Kokomo, Ind.—Haynes gasolene cars.

Holsman Automobile Co., Chicago, Ill.—Holsman motor buggies.

Interstate Automobile Co., Muncie, Ind.—Interstate gasolene cars.

Jackson Automobile Co., Jackson, Mich.—Jackson gasolene cars.

Jeffery & Co., Thomas B., Kenosha, Wis.—Rambler gasolene cars.

Kimball & Co., C. P., Chicago, Ill.—Bodies (mounted).

Kissel Motor Car Co., Hartford, Wis.—Kisselkar gasolene cars.

Knox Automobile Co., Springfield, Mass.—Knox gasolene cars.

Locomobile Co. of America, Bridgeport, Conn.—Locomobile gasolene cars.

Lozier Motor Co., New York City—Lozier gasolene cars.

McIntyre Co., W. H., Auburn, Ind.—McIntyre gasolene cars.

Matheson Motor Car Co., Wilkes-Barre, Pa.—Matheson gasolene cars.

Maxwell-Briscoe Motor Co., Tarrytown, N. Y.—Maxwell gasolene cars.

Midland Motor Co., Moline, Ill.—Midland gasolene cars.

Mier Carriage & Buggy Co., Ligonier, Ind.—Mier motor buggies.

Mitchell Motor Car Co., Racine, Wis.—Mitchell gasolene cars.

Meteor Motor Car Co., Bettendorf, Ia.—Meteor gasolene cars.

Model Automobile Co., Peru, Ind.—Great Western gasolene cars.

Moline Automobile Co., East Moline, Ill.—Moline gasolene cars.

Moon Motor Car Co., St. Louis, Mo.—Moon gasolene cars.

Mora Motor Car Co., Newark, N. Y.—Mora gasolene cars.

National Motor Vehicle Co., Indianapolis, Ind.—National gasolene cars.

Nordyke & Marmon Co., Indianapolis, Ind.—Marmon gasolene cars.

Oakland Motor Car Co., Pontiac, Mich.—Oakland gasolene cars.

Olds Motor Works, Lansing, Mich.—Oldsmobile gasolene cars.

Overland Automobile Co., Indianapolis, Ind.—Overland gasolene cars.

Packard Motor Car Co., Detroit, Mich.—Packard gasolene cars.

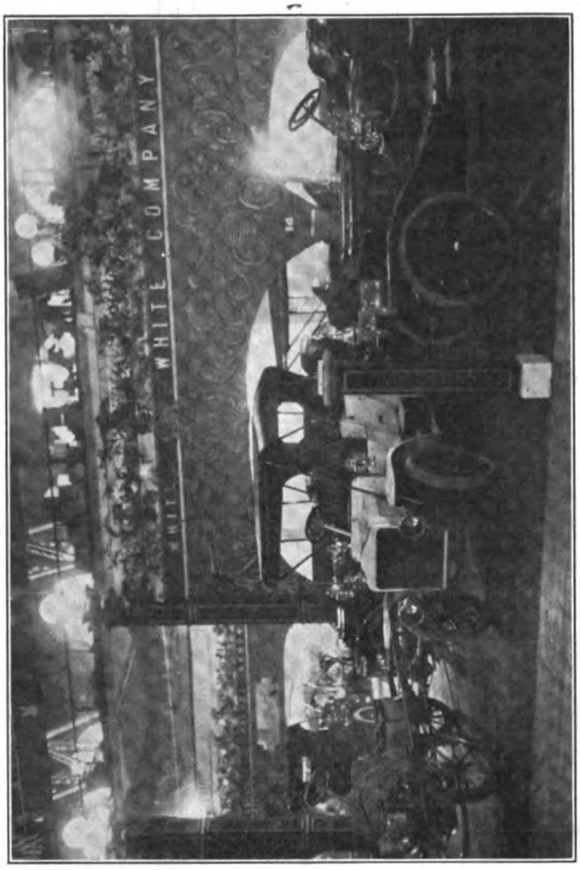
Peerless Motor Car Co., Cleveland, O.—Peerless gasolene cars.

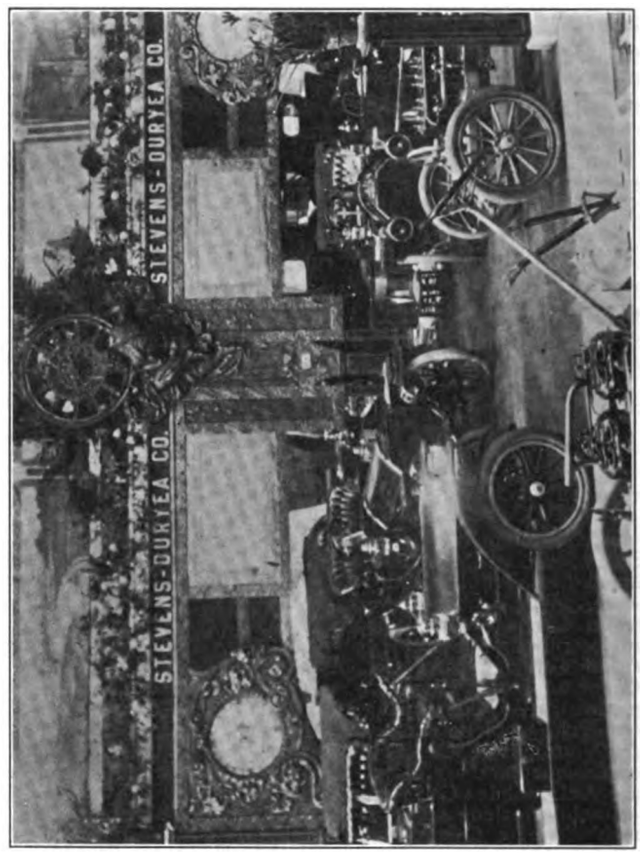
Pennsylvania Auto-Motor Co., Bryn Mawr, Pa.—Pennsylvania gasolene cars.

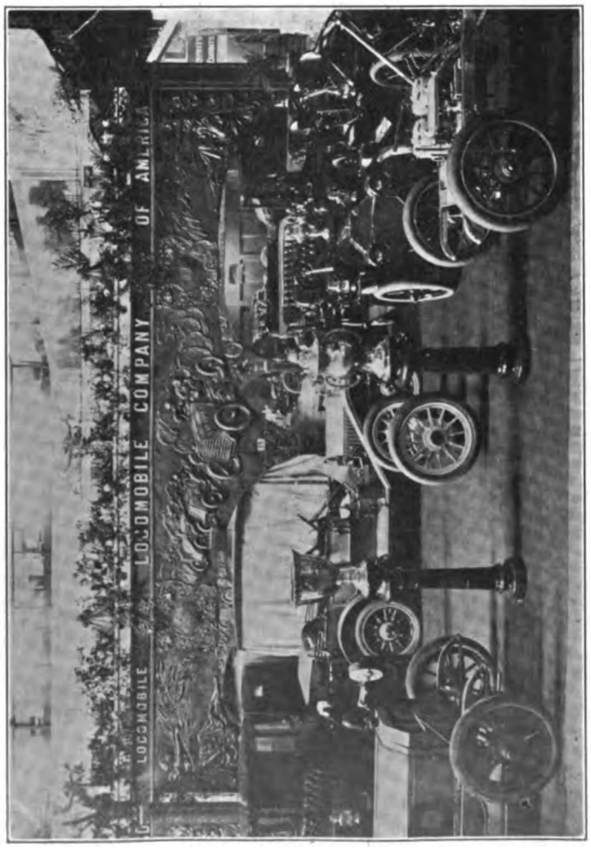
Pierce Arrow Automobile Co., Buffalo, N. Y.—Pierce-Arrow gasolene cars.

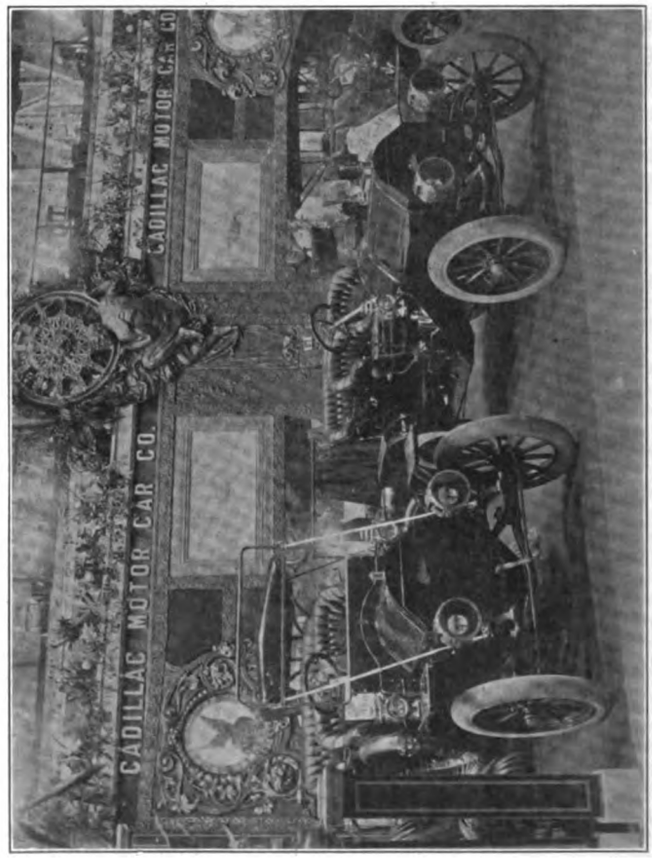
Pope Mfg. Co., Hartford, Conn.—Pope-Hartford gasolene cars.

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FOUR TYPICAL EXHIBITS N THE COLISEUM, CHICAGO

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Premier Motor Mfg. Co., Indianapolis, Ind.—Premier gasolene cars.
Randolph Motor Car Co., Chicago, Ill.—Gasolene commercial cars.
Rapid Motor Vehicle Co., Pontiac, Mich.—Rapid gasolene trucks.
Rauch & Lang Carriage Co., Cleveland, O.—R. & L. electric cars.
Reo Motor Car Co., Lansing, Mich.—Reo gasolene cars.
Ricketts Auto Works, South Bend, Ind.—Ricketts gasolene cars.
Rider-Lewis Motor Car Co., Muncie, Ind.—Rider-Lewis gasolene cars.
Royal Tourist Car Co., Cleveland, O.—Royal Tourist gasolene cars.
Schacht Mfg. Co., Cincinnati, O.—Schacht motor buggies.
Simplex Motor Car Co., Mishawaka, Ind.—Simplex 2-cycle gasolene cars.
Speedwell Motor Car Co., Dayton, O.—Speedwell gasolene cars.
Staver Carriage Co., Chicago, Ill.—Staver motor buggies.
Stearns Co., F. B., Cleveland, O.—Stearns gasolene cars.
Stevens-Duryea Co., Chicopee Falls, Mass.—Stevens-Duryea gasolene cars.
Streator Motor Car Co., Streator, Ill.—Halladay gasolene cars.
Studebaker Automobile Co., South Bend, Ind.—Studebaker gasolene cars.
Thomas Motor Co., E. R., Buffalo, N. Y.—Thomas gasolene cars.
Thomas Motor Car Co., Owen, Janesville, Wis.—Owen Thomas gasolene cars.
Toledo Motor Co., Toledo, O.—Pope-Toledo gasolene cars.
Waverley Co., The, Indianapolis, Ind.—Waverley electrics.
Wayne Works, Richmond, Ind.—Richmond gasolene cars.
Welch Motor Car Co., Pontiac, Mich.—Welch gasolene cars.
White Company, The, Cleveland, O.—White steam cars.
Winton Motor Carriage Co., Cleveland, O.—Winton gasolene cars.
Woods Motor Vehicle Co., Chicago, Ill.—Woods electric cars.
York Motor Car Co., York, Pa.—York Pullman gasolene cars.
Zimmerman Mfg. Co., Auburn, Ind.—Zimmerman motor buggies.

MOTORCYCLES.

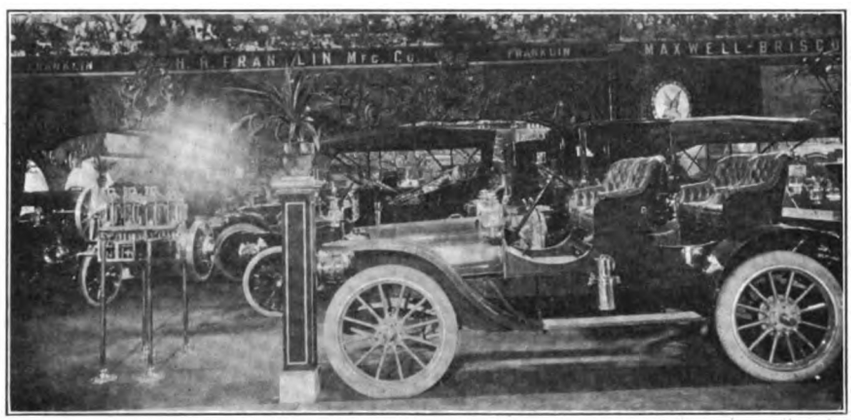
American Motor Co., Brockton, Mass.—M-M motorcycles.
Armac Motor Co., Chicago, Ill.—Armac motorcycles.
Aurora Automatic Machinery Co., Aurora, Ill.—Thor motorcycles.
Auto-Bi Co., Buffalo, N. Y.—Greyhound motorcycles.
Consolidated Mfg. Co., Toledo, O.—Yale motorcycles.
Excelsior Motor & Mfg. Co., Chicago, Ill.—Excelsior motorcycles.
Harley-Davidson Motor Co., Chicago, Ill.—Harley-Davidson motorcycles.
Hendee Mfg. Co., Springfield, Mass.—Indian motorcycles.
Hornecker Mfg. Co., Geneseo, Ill.—Torpedo motorcycles.
Magnet Motor Co., Chicago, Ill.—Magnet motorcycles.
Merkel-Light Motor Co., Pottstown, Pa.—Merkel and Light motorcycles.
Minneapolis Motor Cycle Co., Minneapolis, Minn.—Minneapolis motorcycles.
New Era Gas Engine Co., Dayton, O.—New Era motorcycles.
N. S. U. Motor Co., New York.—N. S. U. motorcycles.
Ovington Motor Co., New York.—F. N. motorcycles.
Pierce Cycle Co., Buffalo, N. Y.—Pierce motorcycles.
Reading Standard Co., Reading, Pa.—Reading Standard motorcycles.
Thiem Mfg. Co., Minneapolis, Minn.—Thiem motorcycles.
Wagner Motor Cycle Co., St. Paul, Minn.—Wagner motorcycles.

ACCESSORIES.

Ajax-Grieb Rubber Co., New York—Ajax tires.
American Electric Novelty and Supply Mfg. Co., New York City—Batteries, lamps and tire specialties.
Arnstein, Eugene, Chicago—Accessories and supplies.
Atwood-Castle Co., Amesbury, Mass.—Lamps.
Atwater-Kent Mfg. Co., Philadelphia, Pa.—Igniters and timers.
Austro-American Separator Co., Cleveland, O.—Gasolene funnels.
Auto Economy Co., Chicago, Ill.—Jewel storage batteries.
Auto Improvement Co., New York City—Self-starters and specialties.
Auto Parts Mfg. Co., Muncie, Ind.—B. T. K. transmissions and steering gears.
Badger Brass Mfg. Co., Kenosha, Wis.—Solar lamps.
Baldwin Chain & Mfg. Co., Worcester, Mass.—Baldwin chains and recoil check.
Bosch Magneto Co., Chicago, Ill.—Magnetos.
Bower Roller Bearing Co., Dayton, O.—Bower, roller bearings.
Bowser & Co., S. F., Fort Wayne, Ind.—Tanks and gasolene storage systems.
Brandenburg & Co., Chicago, Ill.—Motors and ignition specialties.
Breakstone, S., Chicago, Ill.—Hand soap.
Brown-Lipe Gear Co., Syracuse, N. Y.—Gears and transmissions.
Buda Foundry & Mfg. Co., Chicago, Ill.—Jacks.
Burrowes, Co., E. T., Portland, Me.—Wind shields and spare wheels.
Byrne-Kingston & Co., Kokomo, Ind.—Kingston carburetters.
Central Rubber Co., Chicago, Ill.—Tires and rubber goods.
Champion Ignition Co., Flint, Mich.—Ignition systems.
Chase Co., L. C., Boston, Mass.—Rubber cloth, imitation leather robes.
Chicago Battery Co., Chicago, Ill.—Batteries.
Chicago Recometre Co., Chicago, Ill.—Recording devices.
Chicago Welding Co., Chicago, Ill.—Autogenous welding.
Chicago Wind Shield Co., Chicago, Ill.—Wind shields.
Commercial Battery Electric Co., Chicago, Ill.—Storage batteries, magnetos.
Connecticut Telephone & Electric Co., Meriden, Conn.—Spark coils, switches and ignition specialties.
Consolidated Rubber Tire Co., New York City and Akron—Tires.
Continental Caoutchouc Co., New York City—Continental tires.
Cooks Sons, Adam, New York—Lubricants.
Cooks Standard Tool Co., Kalamazoo, Mich.—Tools.
Cotta Transmission Co., Rockford, Ill.—Individual clutch change gears.
Cramp & Sons Ship & Engine Building Co., Wm., Philadelphia, Pa.—Bronze castings and parts.
Davis Robe Co., Chicago, Ill.—Robes and steel wire armor.
Diamond Rubber Co., Akron, O.—Diamond tires.
Diamond Chain & Mfg. Co., Indianapolis, Ind.—Axles, chains, transmissions and sprockets.
Dietz Co., R. E., New York City—Lamps.
Dixon Crucible Co., Joseph, Jersey City, N. J.—Graphite lubricants.
Duff Mfg. Co., Pittsburg, Pa.—Jacks.
Edmunds & Jones Mfg. Co., Detroit, Mich.—Lamps and specialties.
Electric Storage Battery Co., Philadelphia, Pa.—Accumulators.
Elite Mfg. Co., Ashland, O.—Jacks and pumps.
Empire Automobile Tire Co., Trenton, N. J.—Empire tires.
Ennis Rubber Mfg. Co., Newark, N. J.—Tires.
Excelsior Supply Co., Chicago, Ill.—Batteries, lamps, plugs, lubricants.
Fellwock Auto & Mfg. Co., Evansville, Ind.—Bodies, wind shields and tops.
Firestone Tire & Rubber Co., Akron, O.—Firestone tires.
Fisk Rubber Co., Chicopee Falls, Mass.—Tires.
Fox Metallic Tire Belt Co., New York City—Anti-skid bands.
Flentje, Ernest, Cambridge, Mass.—Shock absorbers.
Fulton & Zinke, Chicago, Ill.—Gasolene motors.
G & J Tire Co., Indianapolis, Ind.—G & J tires.
Gabriel Horn Mfg. Co., Cleveland, O.—Gabriel horns and cut-outs.
Garage Equipment Co., Milwaukee, Wis.—Specialties.
Gemmer Mfg. Co., Detroit, Mich.—Steering gears and parts.
Globe Machine & Stamping Co., Cleveland, O.—Metal stamping specialties.
Goodrich Co., B. F., Akron, O.—Goodrich tires.
Goodyear Tire & Rubber Co., Akron, O.—Goodyear tires.
Gray & Davis, Amesbury, Mass.—Lamps
Gray-Hawley Mfg. Co., Detroit, Mich.—Mufflers and exhaust horns.
Ham Mfg. Co., C. T., Rochester, N. Y.—Lamps.
Hancock Mfg. Co., Charlotte, Mich.—Oilers.
Hardy & Co., R. E., New York City.—Spark plugs.
Harris Oil Co., A. W., Providence, R. I.—Lubricants.
Hartford Rubber Works, Hartford, Conn.—Hartford tires.
Hartford Suspension Co., Jersey City, N. J.—Truffault-Hartford shock absorbers.
Heinze Electric Co., Lowell, Mass.—Coils and ignition equipment.
High Frequency Ignition Co., Los Angeles, Cal.—Ignition systems.
High Wheel Auto Parts Co., Muncie, Ind.—Parts for motor buggies.
Hoffecker Co., The, Boston, Mass.—Speedometers.
Imperial Brass Mfg. Co., Chicago, Ill.—Pumps and fittings.
Jons Auto Co., Beatrice, Neb.—Jonz 2-cycle motors.
Jones Speedometer, New York City—Jones speedometers, annunciators, odometers, speed regulators and specialties.
K-W Ignition Co., Cleveland, O.—Ignition specialties.
Kokomo Electric Co., Kokomo, Ind.—Ignition specialties.
Knight & Co., H. C., Chicago, Ill.—Wind shields.
Lawrence & Welch, Sterling, Ill.—L. & W. tools, fittings and specialties.
Leather Tire Goods Co., Newton Upper Falls, Mass.—Non-skid covers and leather inner tubes.
Legnard Bros., Inc., Waukegan, Ill.—Auto-marine Spark plugs.
Limousine Carriage Mfg. Co., Chicago, Ill.—Bodies and tops.

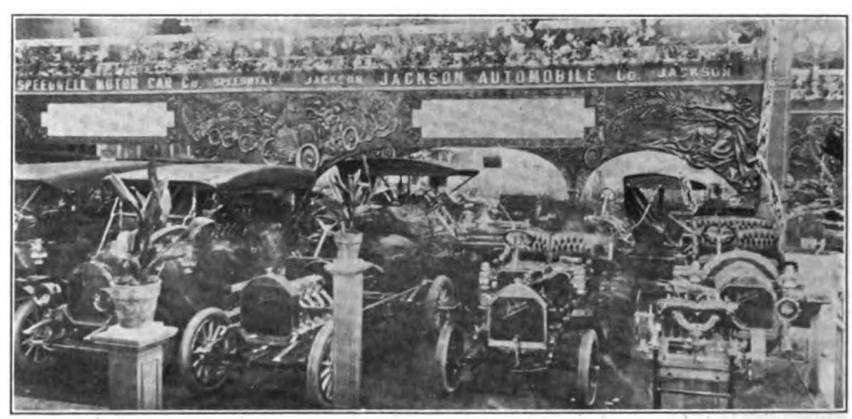
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London Auto Supply Co., Chicago, Ill.—Tops.
Long Mfg. Co., Chicago, Ill.—Hoods, radiators.
Longdin-Brugger Co., Fond du Lac, Wis.—Tops.
McCanna Mfg. Co., Chicago, Ill.—Lubricators, oil pumps.
McCord Mfg. Co., Detroit, Mich.—Radiators.
Michelin Tire Co., Milltown, N. J.—Michelin tires.
Milwaukee Motor Co., Milwaukee, Wis.—Timers and distributors.
Morgan & Wright, Detroit, Mich.—Morgan & Wright tires.
Morrison-Ricker Mfg. Co., Grinnell, Ia.—Gloves and gauntlets.
Mosler & Co., A. R., New York City.—Spit-Fire spark plugs.
Motsinger Device Mfg. Co., Pendleton, Ind.—Ignition systems.



Motz Clincher Tire & Rubber Co., Akron, O.—Clincher tires.
N. Y. & N. J. Lubricant Co., New York City—Lubricants.
Nadall Mfg. Co., Chicago, Ill.—Demountable rims.
National Battery Co., Buffalo, N. Y.—Accumulators.
National Carbon Co., Cleveland, O.—Batteries.
National Coil Co., Lansing, Mich.—Spark coils.
Never-Miss Spark Plug Co., Lansing, Mich.—Spark plugs.
Neeley & Co., Edward, Chicago, Ill.—Pressure feed lubricators.
Norton, Co., The, Worcester, Mass.—Drill grinders.
Oliver Mfg. Co., Chicago, Ill.—Jacks and accessories.
Pantasote Co., New York City—Top and upholstering materials.
Pennsylvania Rubber Co., Jeannette, Pa.—Pennsylvania tires.
Pfanstiehl Electrical Laboratory, North Chicago, Ill.—Coils.
Pittsfield Spark Coil Co., Dalton, Mass.—Ignition systems.
Pratt Mfg. Co., Wm. E., Chicago, Ill.—Jacks.
Quincy, Manchester, Sargent Co., Plainfield, N. J.—Auto Cle wrenches.
Randall-Faichney Co., Boston, Mass.—Oil guns.
Perfection Emergency Tire Co., The, Chicago, Ill.—Perfection demountable rims.
Rands Mfg. Co., Detroit, Mich.—Tops.
Remy Electric Co., Anderson, Ind.—Magnetos.
Republic Rubber Co., Youngstown, O.—Republic tires.
Rochester Safety Lock Co., Rochester, Ind.—Steering locks.
Rochford & Co., Chicago, Ill.—Wind shields.

Royal Equipment Co., Bridgeport, Conn.—Raybestos friction facing.
Ross Gear & Tool Co., Lafayette, Ind.—Gears and tools.
Sager Co., J. H., Rochester, N. Y.—Supplementary springs.
Shaler Co., C. A., Waupum, Wis.—Electric vulcanizers.
Shelby Steel Tube Co., Pittsburg, Pa.—Steel tubing.
Smith, Fred, Aberdeen, S. D.—Simplex non-skid chains.
Smith Mfg. Co., A. O., Milwaukee, Wis.—Gears and parts.
Sorensen Chain Guard & Silencer Co., Chicago, Ill.—Sorensen chain guard and silencer.
Slickner, Frederic, New York City—Klaxon horns.
Sparks, F. E., Chicago, Ill.—Manufacturers' supplies.



Spicer Universal Joint Co., Plainfield, N. J.—Universal joints, magnetos and dynamos.
Splitdorf, C. F., New York City—Timers, distributors, coils and ignition specialties.
Sprague Umbrella Co., Norwalk, O.—Tops and wind shields.
Spring Strap Co., The, Chicago, Ill.—Spring recoil checks.
Standard Tire Protector Co., Saginaw, Mich.—Tire protectors.
Standard Varnish Works, Chicago, Ill.—Paints, enamel and varnishes.
Stewart & Clark Mfg. Co., Chicago, Ill.—Speedometers.
Stromberg Motor Devices Co., Chicago, Ill.—Carburetters.
Swinehart Clincher Tire & Rubber Co., Akron, O.—Swinehart tires.
Timken Roller Bearing Axle Co., Canton, O.—Bearings and axles.
Triple Action Spring Co., Chicago, Ill.—Spring leaves, supplementary springs, shock absorbers.
Troy Carriage Sun Shade Co., Troy, O.—Wind shields.
20th Century Motor Car Co., South Bend, Ind.—Wind shields.
Universal Tire Protector Co., Angola, Ind.—Non-skid bands, tire protectors.
Valentine & Co., New York City—Varnishes.
Vanguard Mfg. Co., Joliet, Ill.—Wind shields.
Veeder Mfg. Co., Hartford, Conn.—Odometers and speed indicators.
Vehicle Top & Supply Co., St. Louis, Mo.—Tops.
Vesta Accumulator Co., Chicago, Ill.—Accumulators.
Vivax Storage Battery Co., Chicago, Ill.—Storage batteries.
Warner Gear Co., Muncie, Ind.—Gears and transmissions.
Warner Instrument Co., Beloit, Wis.—Warner auto meter.
Weed Chain Tire Grip Co., New York City—Anti-skid chains.
Wheeler, F. H., Indianapolis, Ind.—Schebler carburetters.
Whitney Mfg. Co., Hartford, Conn.—Whitney chains and keying systems.
Whiteley Steel Co., Muncie, Ind.—Steel castings.
Witherbee Igniter Co., New York—"Wico" ignition specialties.

Expense of the Show Chassis.

Through long familiarity with the sight, show-going crowds have come to accept the polished chassis which usually grace the stands of the more prosperous manufacturers almost as a matter of course, and even have ceased to admire them as they used to do, now that the novelty has worn off. Probably it does not occur to one visitor in a hundred that they constitute by all odds the most expensive element in the average exhibit, considering the fact that they are useful only for show purposes and frequently can be used but a single season. Some idea of the labor involved in producing such a model, even when of the plainest, unsectioned type, however, may be gleaned from the remark of one manufacturer, overheard at Chicago, who said, pointing to a chassis which differed from the stock type only in matter of finish: "Do you know, that thing is a pretty expensive proposition. Why, it took six men a whole month just to polish that chassis."

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WEIGHT AS A SOURCE OF EXPENSE

Problems Involved in Its Adjustment to Power and Performance—How Reduction May Add to Initial Cost.

Like its horsepower the weight of a motor car is a very vague and uncertain quantity—and for much the same reason. For while it is equally easy for the manufacturer to determine what the total weight of his vehicle, including its full equipment, is no one, not even the maker himself, knows exactly what the ratio between the power and weight of the car ought to be, so that there is no possible check upon exaggeration. Hence the temptation to foster the impression that the ratio is high either by allotting a high power rating to the motor or by giving it a nominal value so absurdly low that it will be accepted readily as ultra "conservative." The importance of ascertaining definitely the value of this factor was brought out with marked clearness in a canvas of the economics of weight reduction presented in a paper read before the recent meeting of the Society of Automobile Engineers in New York, by F. D. Howe.

"How much can we afford to spend to save weight in an automobile?" the author inquired. "I don't know. When one starts to investigate, instead of reaching a definite conclusion, he raises a hydra-headed brood of questions:

"What automobile? What weight? Whose money are we spending? What does gasolene cost where it is to be used? What roads is it to be driven over? At what speed will it be run? What grades will it have to climb? What tires will be used, and what will they cost, and what is their load-life curve?

"Now some of these questions have no definite and well-defined answer. Others do. For instance, if the manufacturer is to stay in business, we know that, in the long run, the money that he spends must come out of the pocket of the man who buys the car, and so the primary question is: How much per pound can the buyer afford to pay for cutting weight out of his car? And second, can he be brought to realize the fact and give up the money?

"Weight is an expense to the user of a car in many ways: (a) He must pay for gasolene to move it around; (b) He must pay for tires to carry it; (c) It reduces hill-climbing ability; (d) It reduces speed on soft roads materially, and on a smooth, hard road to a much less extent. It wears out clutches in starting and brakes in stopping. It increases the time required to get up to speed, and in general makes the car less readily handled in traffic.

"Each of these items will vary in importance with different conditions, but we may make certain assumptions that will enable us to reach an approximation to their value. Let us assume for a pleasure vehicle a life of 50,000 miles on which to base gasolene and tire expense. The cost of fuel to haul a pound of weight 50,000 miles will vary with road conditions, speed, carburetter adjustment, etc., as well as the efficiency of the driving mechanism and tires, so that we shall have to make another assumption based as far as possible on average performance.

"In the Chicago Economy Contest of 1907, the average gasolene consumption was about 32.5 ton-miles per gallon, varying from 47 to 19 A similar average, with less difference between the extremes, obtained in an Australian contest, while the Cleveland sealed bonnet contest over very poor and muddy roads gave an average of 16.8. If we assume a fuel efficiency of 30 ton-miles per gallon and a price of 15 cents per gallon, it will cost 12.5 cents for gasolene to move one pound around during the life of the car under fair touring conditions.

"I am not aware of any extensive tests on which we may rely for data concerning the life of pneumatic tires. . . . . The best we can do in the present instance is to take the manufacturers' rating for pneumatic tires and add the passenger loads. These total loads divided into the cost of tires will give the cost of tires per pound of weight.

Tire	Car Wt.	Passengers	Total.	Tire Cost.	Tire cost Per lb. Wt. carried
2½x30	900	300	1200	$63.60	$ .0530
3 x30	1400	300	1700	72.20	.0445
3½x30	1800	450	2250	112.60	.0500
4 x32	2600	600	3200	155.20	.0485
4½x34	3200	900	4100	209 00	.0510
					$ .2470
Average					$ .0496

"If the car uses up eight sets of tires during its life of 50,000 miles the purchaser has no great cause for complaint, and each pound of weight carried by the tires will have cost him, in round numbers, 40 cents. These two major accounts of fuel and tires are responsible for an expense of 52.5 cents for each pound of unnecessary weight, and the purchaser can afford to pay up to that amount for weight reduction.

"The wear on clutches and brakes would depend very much on their design but with a given design would seem likely to be proportional to the weight to be started and stopped. Whatever saving there may be in wear and adjustment we may throw in with the satisfaction due to snappy acceleration and improved hill climbing ability, and call it interest on his 52.5 cents for a period equal to half the life of the car. . . . . "

From published data on the subject and with the aid of a number of assumptions of his own, the author further is able to deduce these costs per pound total weight of car and load for the commercial vehicle, the headings indicating the rated load capacity of the machine, the totals in each case corresponding to that just given for the pleasure type:

	500 lbs.	15,000 lbs.	3,000 lbs.	6,000 lbs.	10,000 lbs.
Gas	$ .30	$ .235	$ .178	$ .118	$ .105
Tire ...	.75	.625	.46	.263	.189
	$1.05	$ .860	$ .638	$ .381	$ .294

"So much from the standpoint of the purchaser and user," he continues. "The manufacturer's problem is to make the machine that will be the most profitable to himself. If he were to make a commercial automobile, cutting the weight down by careful design and high grade material to the point of most economical service, he might have difficulty in making sales, for there are many who are called good business men who cannot see very far beyond a big first cost. Pleasure vehicles, however, built on this plan sell well, for the same business man will spend money freely on a car for transporting his own person.

"For every purpose, there is a theoretical car of the lowest possible first cost compatible with the necessary strength and reliability. In this car the grade of materials is so chosen and the design is so worked out that it will cost money, either to add weight, on account of increased cost of material, or to reduce weight, on account of either the increased labor cost in cutting out the metal, or increased material cost due to the higher grade and more expensive metals used.

"This cheapest possible car will not be such a bad proposition, as the term implies, for we have assumed that it has the necessary strength and reliability. It will probably be a most profitable one for the manufacturer who can build them in very large quantities. In fact, mass production with well worked out design and the best special tools and fixtures are essential. If ten thousand parts are to be made without change, the saving of one cent on each balances an initial outlay of $100 in the designing or tool department. An hour's time saved in making a pattern or core box may cost hundreds of dollars in extra metal, while a few minutes saved by the draftsman making his drawings the easiest way, rather than the correct way, may be equally expensive.

"But strong, reliable and cheap as this car may be, it is by no means the best bargain for the purchaser. Just what is the curve of cost of weight reduction is unknown, but I fancy it is something like a parabola; certainly when working near the origin of the curve, considerable results are obtained by a slight outlay, for even as weight begets weight, so weight saved in one part saves material and cost in another part.

"In solving this problem for individual cases, we need a set of curves of weight and fuel consumption for vehicles of similar design. The assumption made in this paper, of a uniform or average consumption of

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30 ton-miles per gallon for pleasure cars, is manifestly unsound.

'The heavy cars do better, light ones not so well. But along with the differences of weight go variations in design which vitiate any attempt to draw inferences as to the law governing the relation of weight to fuel consumption. Take the case of the Chicago economy contest in which a number of cars ran for two days under similar conditions. The weight and fuel consumption plotted out looks like a target made by a very poor shot gun, but the average would indicate that the fuel consumption is about inversely as the weight. That is, the heavy car should go as far on a gallon as a light one. We know that this is not necessarily so and we also know that a given car will go further lightly loaded than with a heavy load. Does anyone know this load, mileage, or consumption curve for any particular car or design?

"We also need a set of load-life curves for tires, both pneumatic and solid, a sort of mortality table like that which guides our friend, the insurance actuary. Like that table, it must be based on a great number of individual cases. Now each member of this society has one or more sets of tires under observation, the data from which he could forward to the secretary, who would plot the curves when sufficient material to make them reliable had been obtained. This is a small effort for each of us individually, but the results would be of great value to us all."

What Mysterious Noises May Mean.

Mysterious noises emanating from the running gear of a car, usually denote a want of lubrication in the springs or universal joints. When the springs require lubrication, and no grease channels are provided, the frame should be jacked up to remove the weight from the leaves, and grease introduced between them, by means of a knife blade. Oil also should be used, as it will penetrate into inaccessible crevices and is not liable to be forced out between the leaves, when the weight of the car is placed on the springs. In all well designed cars, provision is made for lubricating the universal joints and where grease cups are employed they should be so fastened as to preclude the possibility of their becoming lost, through the action of centrifugal force.

To Loosen up Multiple Disc Clutches.

In cars equipped with multiple disc clutches there is sometimes difficulty experienced in starting after the car has been standing for a time, as the pressure of the springs forces the plates together to such a degree that they do not let go readily when the clutch pedal is depressed, making gear shifting somewhat ticklish. This tendency may be obviated by applying a mixture of kerosene and thin oil to the clutch, which now may be inclined to slip, and to counteract which thick oil should be added until a positive grip is secured.

EXPERIMENTS IN CARBURATION

Results of Simultaneous Tests in Three University Laboratories—Ratio of Air in Effective Mixtures.

Experiments carried out at the laboratories of three different universities, in each of which his own engines have been installed are proving beneficial to an enterprising automobile manufacturer in two different ways. In the first place comparison of these tests, carried out under similar conditions and thus furnishing a cross check upon each other, affords the builder some very useful data upon which to base future calculation and design. In the second place, students who have chosen the automobile field for thesis subjects, often are given opportunity for vacation work at the company's plant, thus extending their familiarity with the engine with which they already have become acquainted.

In the mechanical equipments at Cornell University, the University of Michigan, and Syracuse University, Franklin engines have been placed and the tests mentioned are made up and carried out under the supervision of the engineering department of the H. H. Franklin Manufacturing Co., Syracuse, N. Y., as a result of which, a good opportunity is afforded them of securing promising material for future enlistment on the firm's payroll. An outline of some of the work is indicative of the general method of the system and also of the benefit which is being derived from it.

In investigating the subject of fuel mixtures, for example, all tests were of thirty minutes duration. All air supplied to the carburetter was accurately metered and the gasolene consumption was carefully measured. The temperature of the air entering the carburetter was maintained as nearly constant as possible, and readings were made every two minutes. The brake was then read, and the temperature of the air entering and leaving the hood was taken. The engine speed was kept as nearly constant as possible in all tests.

Samples of exhaust gases were taken at the beginning, after ten minutes and at the end of each test. In each case the ratio of air to gasolene was checked by calculation from the analysis of the exhaust gases, the average analysis being used for this purpose. The tests were made in two series, one under constant speed and variable horsepower and the other with maximum horsepower and variable speed. Figures prepared show tests made at 1,000 revolutions per minute and twelve horsepower.

Five thirty-minute runs were made. In run No. 1 the gasolene adjustment in the carburetter was shut off as much as possible and have the engine run without missing or popping back or cause any trouble. In run No. 5 the needle valve was open as far as possible and still maintain twelve horsepower at 1,000 revolutions per minute. The three intermediate runs were made somewhere between the two extreme runs, and the results were used for the platting of curves.

The gasolene consumed in the first run was about 3,000 cubic centimeters, and it was shown in test No. 5 that it was possible to get the same horsepower with the same length of run and the same speed and yet burn nearly twice as much gasolene. In applying this to road work it is found that it is possible to go twenty miles on a gallon of gasolene or go ten miles on the same quantity and under the same conditions.

This is a laboratory proof of the everyday incident of one man using twice as much gasolene as another to accomplish the same result. The excess of gasolene going through the motor might cause a good deal of heating, but if its use is possible in a laboratory with no fan other than that on the motor itself the same results can be obtained on the road without an extremely harmful outcome.

As to where this gasolene goes that passes through the motor, it is shown by the exhaust analysis that the combustion is incomplete. In the first test the loss due to incomplete combustion is approximately 1 per cent., and in the last test the similar loss is 15 per cent. The first test shows a thermal efficiency of 17 per cent. and the last one of 9 per cent. The ratio of air to gasolene, by weight, under the first test approaches closely the correct proportion according to the analysis of gasolene. In other words there is no excess in any of these tests. Generally speaking, it has been found advisible to run a certain percentage more of air than is required theoretically to make complete combustion, but in none of these tests has any excess of air been found. The theoretical amount of air necessary to make complete combustion with the gasolene used is 14.90 parts of air to one part of gasolene.

In each case the Franklin company has set up the engine and made such arrangements as to obviate any great amount of work in preparation for the tests Inasmuch as the tests vary from year to year, however, there is each year a certain amount of special apparatus which has to be built.

Denatured Alcohol a Smokeless Fuel.

Denatured alcohol prepared with boric acid was recommended for fuel purposes by Professor Irving W. Fay in a lecture on the oxygen compounds of the hydrocarbons delivered last week in connection with his Brooklyn Institute course on organic chemistry. "When gasolene burns there should be no odor left behind," he said, "and when a trail of smoke is left behind we know that the man is wasting his gasolene. Alcohol burns without smoke, and for various reasons the acid makes a suitable addition to it."

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YELLOWSTONE PARK FOR TOURISTS

Cheyenne Industrial Club Urges Opening of the Reserve to Automobiles—Invites Co-operation of Other Bodies.

Attempts to hasten the inevitable opening of Yellowstone Park to automobiles without compelling the entire taking out of the engines, are being made. Quite a big campaign with this object in view has been started by the Industrial Club of Cheyenne, Wyo., which is urging the co-operation of automobile clubs, commercial bodies and good roads associations.

"At the present time," the Cheyenne agitators explain, "the rules make it necessary for the removal of the engines from automobiles immediately upon entering the Park and for the employment of drivers and teams to haul the engine and automobile as separate conveyances through the Park at a speed of probably eighteen to twenty-five miles per day and at a very great expense and loss of time. The American people are beginning to realize that Yellowstone Park is one of Nature's wonders, and we believe that the time has come when the automobile owner should be recognized.

"The Wyoming delegation in the National Congress is being requested to urge legislation whereby appropriations can be made at once for the establishment of public roads and the maintenance of the same in the park. Statements are made in correspondence now in our hands, being in the form of official reports from those in charge of the park, that the grades and roads were dangerous and that if automobiles were permitted in the park under present conditions it would be a practical prohibition of tourists who might desire to travel by horse and wagon. Such statements are made by General Young, superintendent of the park. We find that in the opinion of the Secretary of the Interior that this statement is correct, and yet as against that we have statements from men who have made the journey that the grades are not dangerous and impassable for automobiles. We believe that the whole matter should be investigated.

"In this connection, this club is starting an agitation, hoping to secure legislation in the State legislature of Wyoming during the coming session by which it will be possible to build a great State highway from east to west through Wyoming, with roads leading from this highway into the park and thus encouraging the ultimate building of a great National highway from coast to coast for tourists and especially automobiles."

Racing in Mud at San Bernardino.

Looking at the mud on the track, Barney Oldfield told the people at San Bernardino, Cal., on Sunday, 31st ult., that they would again have to wait a week before they could see him drive. Some 600 spectators, many of whom had come long distances, said otherwise, and Barney was finally persuaded to give them an exhibition. He brought out the Christie creation and before he could make enough rounds on the track to spatter even half the spectators with the mud spray it kicked up, the machine blew out a cylinder head with a bang and had to retire.

This put the crowd in bad humor, but the semblance of a race program was finally arranged and Oldfield defeated his co-stars, Siebel and Seyfried, in a "sweepstakes", driving a White stock car. Seyfried, in the White Flyer, made the best time of the day in the exhibition mile, making the distance in 1:06. The machine later broke a pinion as the result of the mud plowing. Several stock car contests with close finishes strengthened the entertainment.

Five New Measures at Albany.

Five automobile bills were introduced at Albany Monday, in the Assembly by Beverley R. Robinson, who acted on the suggestion of the law committee of the Automobile Club of America. The purpose of the bills, Robinson says, is to straighten out defects in the present motor vehicle laws.

The first of the bills puts all motorists in New York on the same basis and provides that the contribute the same registration fee. The second provides for the abolition of any specific mile an hour rate and makes everybody on the highway responsible for a rate of speed reasonable and proper. The third bill provides that all fines collected from automobilists shall go to the State, to be used for the maintenance of good roads.

The remaining two bills are aimed at "joy riders." One makes it a misdemeanor for a chauffeur to take out an automobile without the consent of the owner, and the other makes it a misdemeanor for any one to tamper with automobiles without the consent of the owner or to cause injury to a motor vehicle.

Dangerous Tactics of Rural Georgians.

One hundred dollars reward has been offered by the Chatham county commissioners at Savannah, Ga., for the arrest of the persons responsible for a recent case of putting a wire across one of the public roads which form part of the racing circuit. The wire was stretched tightly across the highway, and had a car encountered it at speed, the occupants would probably have suffered terrible injuries. The efforts of the rural residents to make speeding dangerous have attracted official attention.

Always Prepared to "Get a Horse."

Fear of being stranded in the country with exhausted batteries and no means of getting home has induced an electric vehicle enthusiast of Ravenna, O., to alter his victoria in such a way that shafts may be attached to it at any time. The necessary extra equipment carried under the body.

STATE SEEKS INTERCEPTED FINES

New Jersey Begins Prosecution of Justices Who Fail to Make Returns—City of Newark a Delinquent.

Another Jersey justice who had become proficient in the art of "forgetting" to make to the State an accounting of fines which he had collected from motorists during the past summer, has been called to account. On complaint of the Quaker City Motor Club, which has been conducting a vigorous crusade, Justice Schmitz, of Camden, was taken into custody last week and held in $300 bail on a charge of retaining $50 of fines which he had collected. Schmitz disclaims all intent of fraud in the matter and declared it was through a lapse of memory that he did not turn in the money in this particular case.

In connections with the investigations it also has been brought to light that the city of Newark has been delinquent in the matter of making returns to the State of fines collected from automobilists. In the past it has been the custom of the police court clerk to turn all moneys collected for fines into the city treasury. Steps have now been instituted by the State authorities to recover all that is due it for fines under the law. The New Jersey Automobile and Motor Club was active in bringing the matter to the attention of J. B. R. Smith, commissioner of motor vehicles, who, when the facts were presented to him, immediately took prompt action.

Washington to Regulate Taximeters.

An initial move in the inevitable flood-tide of legal regulation of taximeter instruments has been made by the District Commissioners of the District of Columbia in a regulation prohibiting the use of inaccurate taximeters and providing for a maximum penalty of $40 for the owner or company owning an automobile upon which such an instrument is used. The measure provides that no taximeter shall be used, until a guarantee of its accuracy shall have been filed with the hack inspector at police headquarters and that all taximeters shall be at all times subject to inspection by the police department.

Pennsylvania Roads Open to Motorists.

No borough or township, in Pennsylvania at any rate, has authority to close to automobiles any highway that has once been opened, according to a decision of Judge Robert S. Frazer, in Pittsburg. As a result of the decision, motorists may run their machines along the Little Sewickley road in spite of the Sewickley township ordinance to the contrary. The court declared that the act imposing a State tax for the use of automobiles gives to the owner the right to traverse any highway in the State.

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SUES TO RECOVER ENTRANCE FEE

Mora Company Furnishes a Sequel to the Vanderbilt Cup Race—Grounds of the Suit and the Defense.

At practically the same time that the Long Island Motor Parkway company was released from its $25,000 bond imposed by the board of supervisors of Nassau county as a liability fund before the sweepstakes and Vanderbilt cup races could be run last fall, the Vanderbilt Cup Commission was made defendant in a suit for $500 in connection with the Vanderbilt event. Suit was brought against the members of the Vanderbilt commission last Friday by the Mora Motor Car Co., of Newark, N. J., seeking to recover the company's initial payment of $500 for an entry in the race. The company claims that owing to the uncertainty about the holding of the race, due to the difficulty between the American Automobile Association and the Automobile Club of America, it decided not to go ahead with the building of its special racing car after it had paid the first half of its $1,000 entry fee. It notified the commission of the reason for failing to complete the entry and asked the return of its money. The latter not being forthcoming, legal action was decided upon.

All the individual members of the commission were made defendants in the suit, although so far only Jefferson DeMont Thompson and Frank G. Webb have been served. Chairman Thompson says that the commission will contest the suit on the ground that on its side the conditions for the race were fulfilled. He states that the payment was made on May 25 and that the notification that the Mora desired to withdraw did not come until September 24, and declares that the proviso in the race conditions to the effect that half the fee must accompany the entry and would be forfeited in the event of failure to take part in the race was made expressly to prevent just such happenings.

Motor Car Helps the Seller of Land.

More than the salesman of any other commodity the man who sells real estate has a momentous transportation problem in bring possible customers to take a look at his offerings. On this account real estate men generally take the lead in the adoption of the automobile for business uses. They reckon a saving both in money and time from its use, but its cheif recommendation is that with it they can get a customer who is on the verge of buying to the property in question and make a deal promptly while he is in the mood.

The question of expense is not great generally speaking; but a real estate man in Boise, Idaho, has set out to settle even that. He is Edward Stein, who for the past year has kept an accurate account of an 18 horsepower, four-cylinder Franklin which he has owned and operated during that time. The result of his year of automobile bookkeeping is a showing that it has cost him $45.11 a month to run his car. This includes $36 in insurance and the purchase of storage batteries at a cost of $27. Outside of these items, the monthly cost has been only $32.07. In the coming year he expects the monthly figure to be about that which he has paid in the past for keeping a horse and carriage, $28 a month, although he figures on getting three times the service.

Classes to Qualify Colored Crauffeurs.

Special classes for colored chauffeurs are to supplement the schedule which the Pierce Arrow Motor Car Co., of Buffalo, N. Y., has arranged in connection with its school of automobile instruction. The plans for the present year are more comprehensive than any the company has made heretofore. Classes begin February 15 and each one lasts for two weeks. The work of instruction includes detail lessons regarding the car, its assembly, maintenance and driving. The time between May 3 and 22 is for owners exclusively, while April 5 to 17 is given over entirely to colored men, the classes for garage men and chauffeurs occupying the rest of the school program.

BRISCOE MANUFACTURING CO.

Manufacturers of

AUTOMOBILE COMPONENTS

Including

RADIATORS, FENDERS, HOODS, TANKS, AND ALL OTHER SHEET METAL AUTOMOBILE PARTS

We repair all makes of Radiators at both plants

DETROIT, MIOH.

Write either plant for Catalogue and Quotations

NEWARK, N. J.

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The Week's Patents.

901,527. Cover for Pneumatic Tires. Isaac J. D. Fairhurst, Orfordville, Wis. Filed Feb. 28, 1907. Serial No. 359,868.

A tire cover having a reinforcing strip in its tread portion, combined fastening and armor rivets securing said reinforcing strip to the cover and forming a protective armor on the outer side of the latter with abutting hexagonal plates secured on the projecting ends of said rivets, reinforcing anti-skidding washers arranged on said armor plates and washer retaining heads formed on the outer ends of said rivets, said heads also forming anti-slipping projections, substantially as described.

901,578. Steadying Device for Supplementary Vehicle Springs. William Young, St. Louis, Mo., assignor to Supplementary Spiral Spring Company, St. Louis, Mo., a Corporation of Missouri. Filed Dec. 26, 1906. Serial No. 349,380.

1. In a device of the character described, the combination of an auxiliary spring, means for attaching same to the vehicle, means for connecting same to the main spring, said means being in connection with one end of said auxiliary spring, and means secured to said second mentioned means adjacent the point of connection thereof with said auxiliary spring, said means extending to the body of the main spring.

901,591. Anti-Skidding and Slipping Attachment for Automobile Wheels. Harry H. Chandler, New York, N. Y. Filed Dec. 27, 1907. Serial No. 408,302.

An anti-skidding and slipping device for automobile wheels comprising a leather strap adapted to be secured around the spokes adjacent to the rim of the wheel, snap hooks connected with said strap at the opposite sides of the spoke and extending downwardly and across the rim, said strap hooks being provided with oblong heads having oblong slots or openings through which the strap is passed, and a flexible drag connected with said hooks and passing around the tire of the wheel, said strap being also provided with inner members which separate the heads of the hooks from the spoke.

901,616. Supplemental Hood for Automobiles. Charles L. Hobbs, Chicago, Ill. Filed Feb. 14, 1908. Serial No. 415,807.

1. A supplemental hood for an automobile hood, consisting of a heat insulating covering adapted to be applied to substantially the entire outer surface of the automobile hood, and detachably connected thereto.

901,654. Grip Tread for Pneumatic Tires. Berton H. Sills, Ottawa, Ontario, Canada. Filed Dec. 14, 1907. Serial No. 406,580.

1. An anti-slipping device for vehicle wheels, comprising transverse chains to pass across the tread of the wheel, annular chains on each side of the wheel but disconnected therefrom, bolts on the extremities of the transverse chains extending through the annular chains, and rotatable with respect thereto, whereby the bolts and transverse chains are free to rotate about their longitudinal axes as they creep around the periphery of the wheel.

U & H MAGNETOS

IT USED TO BE HARD WORK

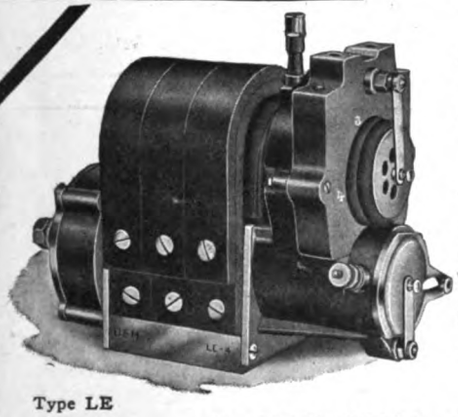
to start the engine. That was the fault usually of the carburetor—sometimes of the ignition.

Today it is apt to be hard work for the owner of a magneto to start without recourse to a battery. That is simply because he must "spin" the crank to get a spark.

The second difficulty is as irrational as time proved the first to be, and the solution of it is not found in adding the complication and expense of a battery.

The owner of a U & H SELF-STARTING MAGNETO, TYPE LE, gives the crank an easy half turn and gets as hot a spark as if traveling at racing speed, and the spark is automatically retarded past the center wherever the spark advance lever may be.

That is common sense!



Type LE

J.S. BRETZ COMPANY

Sole Importers — TIMES BUILDING. NEW YORK

Art In Name Plates

One of the little things that count. The almost universal use of Chandler etched name-plates on high-class cars stamps them as the selection of the critical.

CHANDLER CO.

Springfield, - - Mass.

I HAVE A NORTHERN LIMOUSINE which for the best of reasons I want to sell quickly.

It is in perfect condition, having been driven less than 500 miles, and I think it's one of the sweetest running, handsomest appearing, town cars made.

Tires are brand new and the varnish isn't damaged—in fact the car is just as good as new when it sold for $2,500 and I'll sell it for half—$1,250.

Address E. M. M., 382 Pennsylvania Ave., Detroit, Mich.

THE HIT OF THE SHOWS was the

Splitdorf Magneto

Ask for catalog.

C. F. SPLITDORF,

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WHAT IS THE RED HEAD?

DOW TUBES

The Best Tubes Ever Manufactured

Are the Most Economical

Do Not Deflate When Punctured.

DOW TIRE COMPANY,

2000 Broadway, N. Y. 889 Boylston St., Boston.



We guarantee to solve your tire troubles by the use of

TIRESELE

The best proposition on the market. Write for booklet. Agents wanted.

TIRESELE CO., Mfrs.,

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Newark, N. J

OAKLAND

40 H. P. Four Cylinder, Shaft Drive, $1,600.

OAKLAND MOTOR CAR CO.,

Pontiac, Mich.

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901,670 Brake Mechanism. Alberto Balloco, Turin, Italy, assignor to Societe Anonyme "Itala" Fabrica di Automobili, Turin, Italy. Filed April 16, 1907. Serial No. 368,557.

1. A brake mechanism of the character described comprising a guide member, an arm adjacent to the end of said member, said arm being capable of swinging movement and having adjacent to its outer end a part adapted for engagement with a flexible connector to guide the same, a grooved sheave carried by said arm adjacent to the end of the guide member, and a flexible connector extended along said guide member and passed around the grooved perimeter of the sheave adjacent to the end of said member, and extended from said sheave along said arm in position for engagement with said part at the outer end of the arm and adapted for connection with a brake device.

901,735. Vehicle Frame. Charles J. Pembrooke, Rochester, N. Y. Filed Sept. 10, 1907. Serial No. 392,109.

1. In a vehicle frame, the combination with a yieldingly supported main frame, having an upwardly projecting frame at the rear thereof, of a seat carrying frame pivotally mounted at its front end and yieldingly suspended at its rear from the upwardly projecting frame.

901,751. Spring Wheel. John E. Stannard, Springfield, Mass., assignor of one-half to Francis J. Millea, Springfield, Mass. Filed Aug. 19, 1907. Serial No. 389,144.

1. A spring wheel comprising a hub, a rim provided with inwardly projecting members, a plurality of independent heart-shaped springs closed at their apexes and severed at their indented ends to receive such inwardly projecting members between them, means to attach such apexes to said hub, and means to fasten the severed terminals to said inwardly projecting members.

WHAT IS THE
RED HEAD?

The Witherbee
is more than an
Ignition System!

It provides current for lighting limousines, head lights, side lights, tail lights, inspection lamps, cigar lighters, etc.

It is the most reliable and efficient storage battery on the market, endorsed by the leading manufacturers throughout the country. It is a **necessary** part of every car's equipment.

Write for particulars regarding the new Witherbee "Jr."

Witherbee Everything for Ignition.

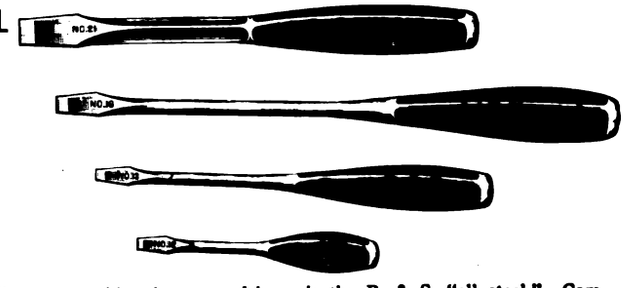
Wico Charging Device, Wico Ignition Wire, Wico Spark Plugs, Witherbee Batteries, Wico Inspection Lamp.

WITHERBEE IGNITER CO.
Makers of the Famous Witherbee Battery.
1876 Broadway, New York.



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The newest thing in screw drivers is the B. & S. "all steel." Complete in ONE PIECE, handle and all. Light and durable. The most sensible screw driver ever made. Don't fail to get circular.

THE BILLINGS & SPENCER CO., Hartford, Conn.

Model B—Brush Runabout
A CAR OF SIMPLE DESIGN MADE WELL
NOT A COMPLICATED DESIGN MADE CHEAPLY

Its records and the opinions of its users speak more loudly than self praise. Agencies for 1909 are being closed rapidly. Much good territory still open.

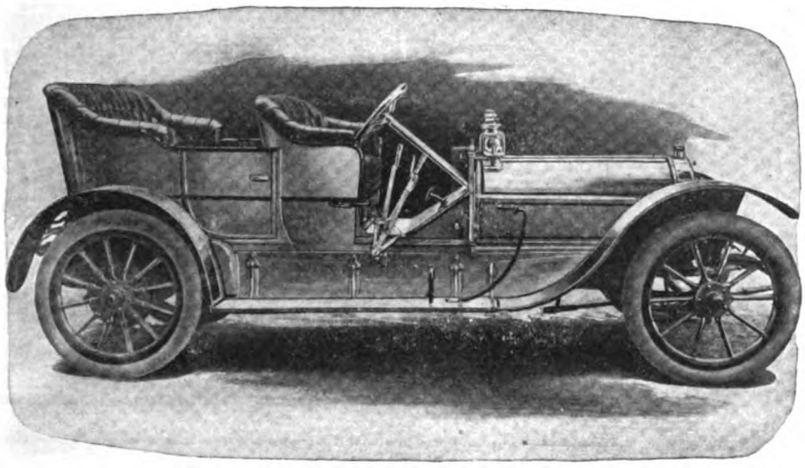
BRUSH RUNABOUT COMPANY, Detroit, Mich.

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Cup Winner in 300 Miles Endurance Contest, Philadelphia to Wilkes-Barre and return, January 1-2, 1909.

Only THREE out of THIRTY-TWO CONTESTANTS finished with perfect time scores; THOSE THREE WERE four-cylinder MATHESONS.



50 H. P.—Six-cylinder Shaft Drive, - - - - $3,000

Equipped with choice of Touring, Tourabout, Toy Tonneau, Close-coupled or Runabout bodies.

50 H. P. Four-cylinder Chain Drive, - - - - $4,500

Equipped with Touring body, Limousine or Landaulet, $5,500 Roadster or Tourabout, $4,350.

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Most accurate speed indicator in the world.

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A Dependable Car.
PENNSYLVANIA AUTO MOTOR CO.,
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COMPLETE COURSE
AUTOMOBILE INSTRUCTION

Invaluable to the owner or prospective owner of a motor car. Practical and to the point. Send for prospectus to the
Correspondence School of Motor Car Practice
Tarrytown, N. Y.

The Inter-State

INTER-STATE AUTOMOBILE CO.,
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WANTS AND FOR SALE

15 cents per line of seven words, cash with order. In capitals, 25 cents per line.

WE WANT A FIRST-CLASS TRAVELING REPRESENTATIVE, ONE THOROUGHLY ACQUAINTED WITH THE AUTOMOBILE MANUFACTURING TRADE. THOROUGH SALES EXPERIENCE DEMANDED. GIVE REFERENCES. TIMKEN ROLLER BEARING AXLE CO., CANTON, OHIO.

FOR SALE—Exceptional business opportunity. Carriage, wagon and auto custom business; city of 70,000, growing rapidly; established 25 years; high reputation, best trade in city; central location; 130 feet frontage, 12,000 sq. ft. floor space. Nets $3,000 to $5,000 per annum; more than 700 automobiles owned in the city. Capital required $18,000 or more. Age and failing health reason for selling. Address X Y Z, care Motor World.

GRADUATE of stationary, automobile and marine gasolene engineering, with thorough technical training and two years actual experience, desires position as chauffeur, demonstrator, or in any other branch of the automobile business, in any part of the world. References and particulars furnished on application. CYRUS THOMPSON, Ravenwood, Mo.

YOUNG man, 29 years of age, desires communication with automobile supply house; willing to invest small capital; desires position with house. Address W. C., care Motor World, Box 649, New York City.

FOR SALE—300 sets 28x3 best grade artillery wheels, fitted with clincher rims, less hubs. Write for bargain prices on single sets of the lot. THOMAS B. JEFFERY & COMPANY, Kenosha, Wis.

WHAT IS THE RED HEAD?

Goodyear Quick Detachable Tires Take the Overload.

Because they are always oversize—15 per cent. larger than other tires of same rated measurement. That's one reason why Goodyears last longer.

Goodyear Wrapped Tread Tires Made on Air Bags can't creep — can't rim-cut — 90 per cent. puncture proof. On Goodyear Universal Rim, is taken off or put on in sixty seconds with no special tools.

Ask about Goodyear Air Bottle service—free to all motorists. Write

GOODYEAR TIRE & RUBBER CO.,
Arthur St., Akron, Ohio.

THIS MAGNETO IS "FOOL PROOF"

The most unskillful driver can install the Remy 1909 High Tension Magneto. Improper connection cannot injure it, and no amount of tinkering will put it out of commission. The Remy will stand more neglect, oil, dirt and water than any other ignition system in the world. More than 17,000 Remys have already been sold for 1909 cars—more Remys than all others combined. Write for illustration and description.

THE REMY ELECTRIC CO., Dept. 11, Anderson, Ind.

We have opened a branch house in Thoroughfare Bldg., Broadway and 57th St., New York.

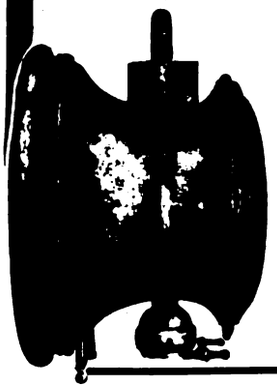
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who equip their product with Solar Lamps to the exclusion of all others, do so because they know that they are bringing their cars up to the highest state of efficiency. That is why

Solar Lamps

are part equipment on the greater majority of cars built in America. Specify Solar Lamps and Generators and they will be furnished.



BADGER BRASS MFG. COMPANY

TWO FACTORIES:
437 Eleventh Avenue
NEW YORK

Kenosha, Wisconsin



Weed Cross Chains Are Brass Plated

Insist upon getting the new Weed Brass Plated Cross Chains. They are specially hardened and will enable the user to get

Two to three times the mileage formerly secured!

As it was impossible to improve the actual efficiency, neat appearance and simplicity in construction of Weed Chain Tire Grips, we have succeeded in improving the quality of our Cross Chains.

WEED CHAIN TIRE GRIP CO., 28 Moore St. **New York**

At That

NO OTHER SPEEDOMETER except the STEWART has an equally spaced scale (an evidence of correct design).

NO OTHER SPEEDOMETER has an adjustable cam (patent) to correct readings at all speeds. Corrections are all made at the time the instrument is assembled.

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STEWART SPEEDOMETER

combines these features and others.

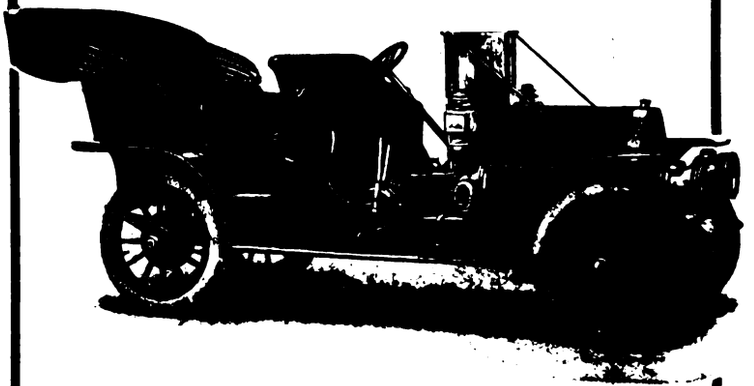
These are reasons why dealers are stocking them EXCLUSIVELY.



Stewart & Clark Mfg. Co.
509 Diversey Boulevard, Chicago, Illinois, U. S. A.

THE "JEWEL 40"

The Non-Skidding Car



SPECIFICATIONS

ENGINE—Rutenbur.
BORE AND STROKE—4¼x5".
IGNITION—Double—Bosch Magneto, Connecticut Coil and Exide Storage Battery.
LUBRICATION—Self contained system with oil level pump in crank case.
TRANSMISSION—Selective type, 3 speeds forward and reverse.
BEARINGS—Timken Roller.
FRONT AXLE—One piece drop forging.
REAR AXLE—Full floating type.
WHEEL BASE—120".
WHEELS—36".
TIRES—Goodyear, Diamond, Firestone or Hartford, 36x4" front, 36x4½" rear.
BODY—Seven passenger.
WEIGHT—3,000 lbs.
PRICE—$3,000.00 complete with top, Hartford Shock Absorbers, Prest-O-Lite gas tank, 9" Rushmore Search lights, side lamps and tail lamp, double tire irons and trunk rack.

Write for catalog.

THE FOREST CITY MOTOR CAR CO., Massillon, Ohio
New York Agency, JEWELL MOTOR CAR COMPANY, 1662 Broadway.

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Automatic



Wind Shield

**Wind shield when you want it.
Dust shield when you want it.
Out of the way in a jiffy.**

When wind or dust bother you, just put up the shield, that's all; no screws or nuts to bother with.

When the wind lets up, or you've passed through the dust, you just put the shield down again.

As easy as rolling off a log.

You need it now, you'll need it all summer and winter.

Makes motoring twice as pleasant by taking away its discomfort.

40-inch size, $35. 44-inch size, $37.50 —complete.

At all dealers. If your dealer can't supply you, send to us and we will ship it direct. Send for book anyway.

Soot-proof Spark Plug



The only spark plug that cleans itself automatically. Put it in your auto and be free from ignition troubles.

C. A. MEZGER, Inc., 1629 Broadway, New York



What Magneto Won the World's 14 Foremost Racing Events of 1908?

THE BOSCH

Did, Of Course!

From a total number of 511 cars entered, 434 were equipped with Bosch Ignition.

From a total of 313 cars that finished, **290 or 92 6/10%** were equipped with Bosch Ignition.

It follows that Bosch Ignition rightly enjoys the confidence it deserves.

Its record is one of constant reliability.

The figures given above are based on the following races:

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FRANCE—Grand Prix de l'A. C. F., Coupe des Voiturettes de l'Auto.

ENGLAND—Fiat-Napier Match, Isle of Man Race.

ITALY—Coppa Florie e Targa Bologna.

GERMANY—Prince Henry Race.

AUSTRIA—Semmering Hill Climb Race.

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If it is a

CORBIN

imported ball bearings, used wherever practical, assure him of this result. Ask owners of Corbin Cars how they stand up in every day use or write for our testimonial booklet.

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Members Association Licensed Automobile Manufacturers.

IT WILL PAY YOU TO INVESTIGATE

THE 1909 National

THE LINE IS BETTER AND MORE COMPLETE THAN EVER

Model 9-35, 4-cyl., 4¾ x 4¾,	5-passenger Touring Car	$2,750
Model 9-40, 4-cyl., 5 x 5,	5-passenger Touring Car	$3,700
Model 9-50, 6-cyl., 4½ x 4¾,	7-passenger Touring Car	$4,200
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Each National has the well-known National Ball-bearing Motor with new crank case oiler, two ignition systems (Bosch Magneto and Storage Battery) and all other tried and proven features of high grade modern motor car construction. Any of the above models can be furnished with Baby Tonneau body or as a Roadster.

Write for distributors terms and full particulars.

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The Overland Does Not Belie Its Name
YOU SEE THEM EVERYWHERE

30 H. P.
4 Cylinder
108" Wheel Base.
32x3½" Tires.

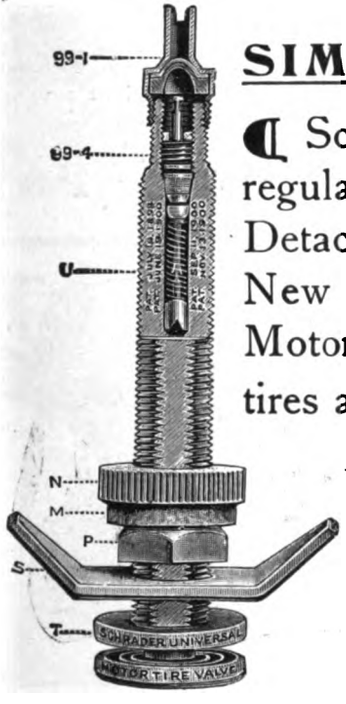
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with Magneto,
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Model 30, $1250.00
Write for our new catalogue

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Schrader Universal Valve

Trade Mark Registered April 30, 1895



SIMPLE AND ABSOLUTELY AIR TIGHT

¶ Schrader Motor Tire Valves, as shown in cut, are the regular equipment for G & J Motor Tires, Hartford Dunlop Detachable Motor Tires, Fisk Detachable Motor Tires, and New Goodyear Detachable Motor Tires. ¶ Our No. 777 Motor Tire Valve is the standard for 3-inch and smaller tires and our No. 725 Motor Tire Valve is the standard for tires larger than 3 inches.

Supplied to the Trade by All Tire Manufacturers

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STEPNEY
SPARE WHEEL

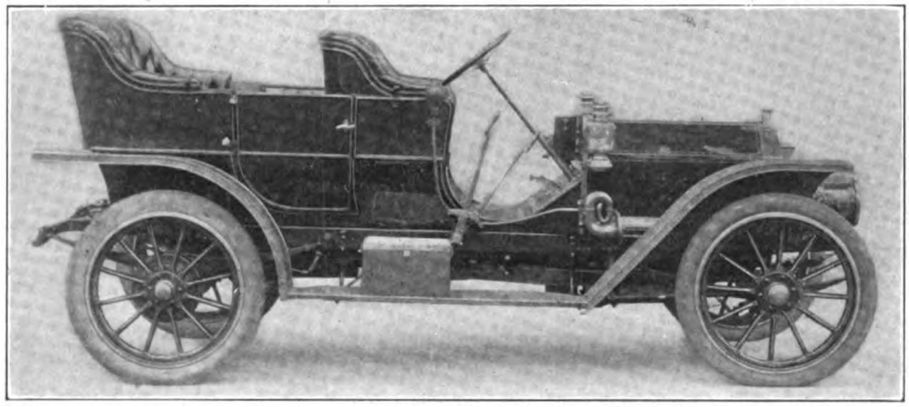
Every motorist should carry a "Stepney" and avoid all troublesome delays caused by punctures and blowouts. Write for Catalogue D.

The Only Cure for Tire Troubles

DISTRIBUTORS—AMERICAN STEPNEY SPARE WHEEL CO., 1773 Broadway, New York Ciy. AUTO SPARE WHEEL CO., 22d, Oak and Gillham Blvd., Kansas City, Mo. EXCELSIOR SUPPLY CO., 1436 Michigan Ave., Chicago, Ill.

Pullman '09

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Model "K" 30 H. P. Touring Car. 4½ inch bore, 4½ inch stroke. $2000.00, including Bosch Magneto.

Our 1909 Models are:

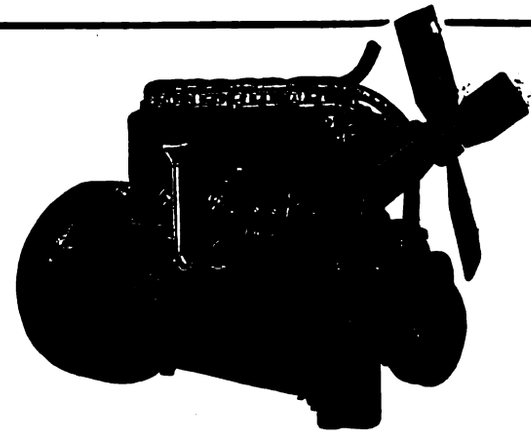
Model L, 20 H. P. Runabout. Price.	$1,500
Model L, 20 H. P. Toy Tonneau. Price	1,600
Model K, 30 H. P. 5-Passenger Light Touring Car. Price	2,000
Model K, 30 H. P. Toy Tonneau or Roadster. Price	2,000
Model 6, 30 H. P. High Speed Runabout. Price	2,500
Model 4, 40 H. P. Gentleman's Roadster. Price	3,000
Model M, 40 H. P. Seven Passenger Touring Car. Price	3,500

To the agent who expects to remain in the business permanently, and who has an eye to the future, the line of Pullman automobiles should powerfully appeal. We ourselves are building for the future by building in the present the best automobiles we know how, and dealing in them in fair and square methods.

YORK MOTOR CAR COMPANY, York, Pa.

THIS AND TWO OTHER "FOURS" —AND A 50 HORSEPOWER "SIX"!

Proved and recognized successes, with a service record. Offered in 25 horsepower, 30-35 horsepower, 40 horsepower, and the 6-cylinder 50 horsepower. All fitted with oil pan base. Equipped for magneto attachment.

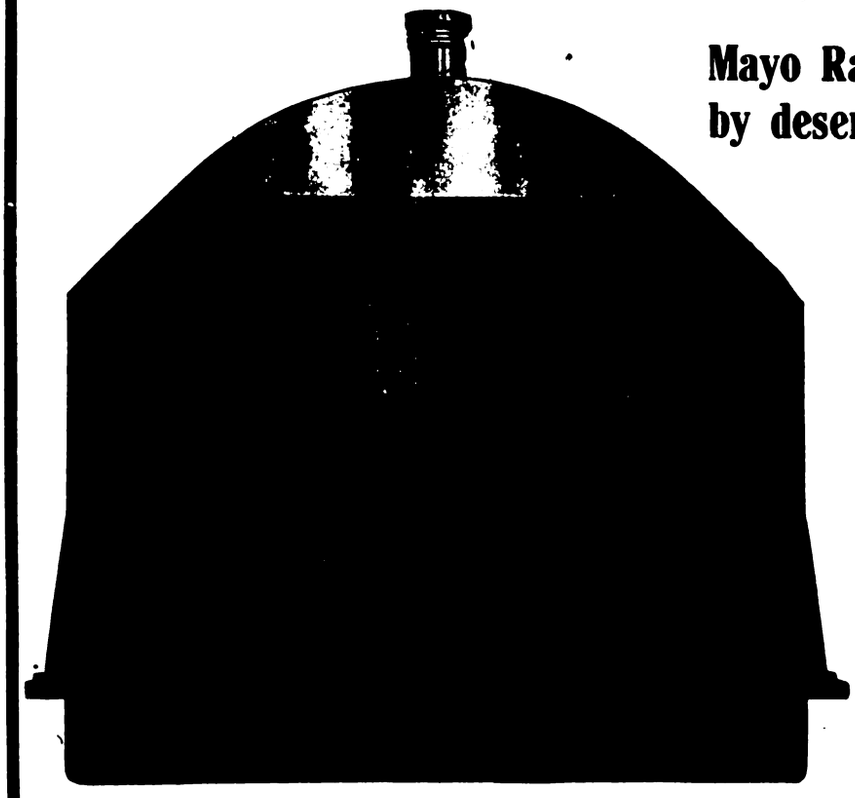


"Rutenber" Motors and Carburetors, Clutches and Fans

The Western Motor Co., Logansport, Ind.

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'Tis not in mortals to command success, but we'll do more—deserve it.



Mayo Radiators have achieved success by deserving it, and in no other way.

¶ Therefore that success is presumably of the permanent and abiding kind.

¶ Price is the cause of the absence of MAYO RADIATORS from cheap cars.

¶ Quality is the reason for the presence of MAYO RADIATORS on most of the good cars.

¶ The only argument against MAYO RADIATORS is their price.

¶ Every other consideration dictates their use.

¶ MAYO RADIATORS combine sound mechanical principles, exact design, construction and workmanship, together with graceful appearance and perfect finish; in short, all the good qualities that go to make the ideal radiator.

¶ MAYO RADIATORS are stamped with the hallmark of class.

¶ MAYO RADIATORS are really the thoroughbreds of the radiator world.

¶ MAYO RADIATORS are made in the kind of a factory that befits them and by the MAYO RADIATOR COMPANY, at New Haven, Connecticut.

WARNING!

JOHN E. THROPP'S SONS COMPANY are exclusive licensees under the Peter D. Thropp patent No. 822561, dated June 5, 1906, for the Manufacture of molds for Curing Tires in Open Steam.

Five Rubber Companies have already taken licenses for the manufacture of tires by the use of these molds and THE DE LASKI AND THROPP CIRCULAR WOVEN TIRE COMPANY, owners of the patent above referred to, are ready to license other Companies who may apply, on the same conditions as those under which the five companies have been licensed.

Parties making, using or selling molds covered by the patent above referred to, are liable for suit to infringement and it is the intention of THE DE LASKI AND THROPP CIRCULAR WOVEN TIRE COMPANY, owner of the patent, to prosecute all infringers.

The De Laski and Thropp Circular Woven Tire Company

TRENTON, NEW JERSEY, U. S. A.

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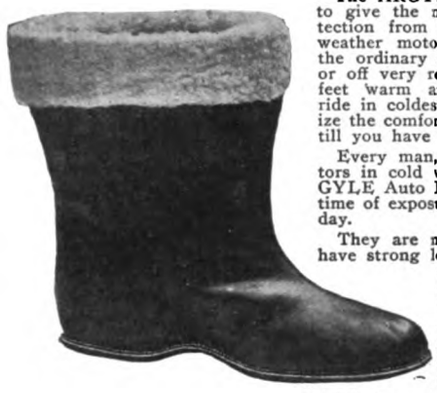
The Largest Automobile Supply House in America

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We have a large line of Leather Clothing, Caps, Gloves, Wool Vests, Wool Boots, Ways Mufflers, Storm Coats, Lap Robes, Etc.

ARGYLE AUTO BOOTS

Worn over Shoes for Comfort in Cold Weather Motoring.



The ARGYLE Auto boots are designed to give the motorist's feet complete protection from the elements during winter weather motoring. They are worn over the ordinary shoes and can be pulled on or off very readily. They will keep your feet warm and dry during the longest ride in coldest weather. You cannot realize the comfort they give in frigid weather, till you have worn a pair.

Every man, woman and child who motors in cold weather needs a pair of ARGYLE Auto Boots, no matter whether the time of exposure is a half hour or a whole day.

They are made of fine flexible leather, have strong leather Goodyear welted soles and are warmly lined throughout with genuine lambs-wool.

Made in all sizes, with long or short leg. Length of the long leg is 13½ inches,, and the short 10½ inches.

PRICES:

Long, per pair $9.00
Short, per pair 8.00

NO. 19 AUTOMOBILE GAUNTLET GLOVE



This illustration shows our No. 19 Gauntlet Glove, which is a black, seamless knit lined Automobile Gauntlet with extra large flexible cuff with 2 fastenings. This Gauntlet is made from the best selected imported black cape leather. It has a 7-inch Gauntlet with extra large cuff, 20 inches in circumference, which may be adjusted to smaller sizes. The cuff is lined and is guaranteed not to crack, and is stitched with genuine silk.

It will also be noted from the illustration, that the wrist is fitted with an elastic band, which will keep the Gauntlet tight, and comfortable on the wrist, and prevent it slipping down over the fingers.

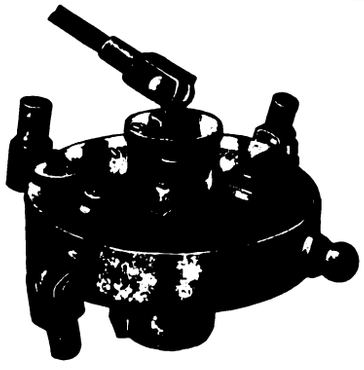
The cuff is also flexible, and can be rolled into a small space, as shown in the small illustration, for carrying in the pocket. This is the finest Gauntlet Glove on the market.

Price, seamless knit lined, per pair $3.50

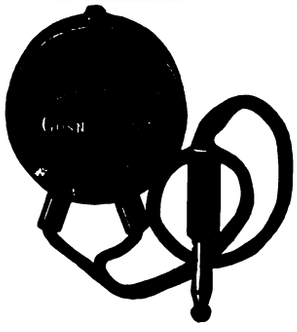
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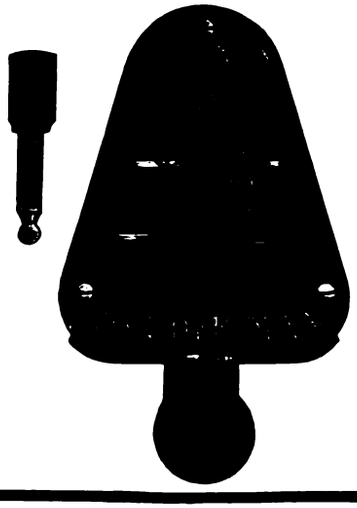
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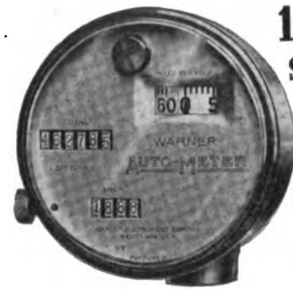
PRICE, with magneto, $2,850
XXX Baby Tonneau, - $2,900

Send for detailed descriptive matter

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1909 Style

Guaranteed
Absolutely Accurate

is the only speed indicator made on the Magnetic Induction principle. Because of the principle it accurately indicates every range of speed from zero to the maximum.

All other instruments are made on the centrifugal principle. They fail to indicate any speed whatever under 5 to 10 miles per hour.

The Auto-Meter is so durably made that practical tests have shown that it will endure a **MILLION MILES** of riding without perceptible wear, or departing from absolute accuracy more than 10 feet to the mile.

We invite comparative tests. Before you decide on any Speed Indicator, put the Auto-Meter on one side of your dash and any other indicator at any price on the other. Then use your watch over a measured course. Keep the instrument which **tells** the **truth.** We know which it will be.

The Warner Instrument Company

Factory and Main Offices—375 Wheeler Ave., BELOIT, WISCONSIN

BRANCH HOUSES—New York, 1902 Broadway; Boston, 925 Boylston St.; Philadelphia, Cor. Broad and Race; Pittsburg, 3432 Forbes St.; Cleveland, 2062 Euclid Ave.; Buffalo, 722 Main St.; Detroit, 239 Jefferson Ave.; Chicago, 1305 Michigan Ave.; Indianapolis, 330½ N. Illinois St.; St. Louis, 3923 Olive St.; San Francisco, 550 Golden Gate Ave.; Los Angeles, 1212 S. Main St.

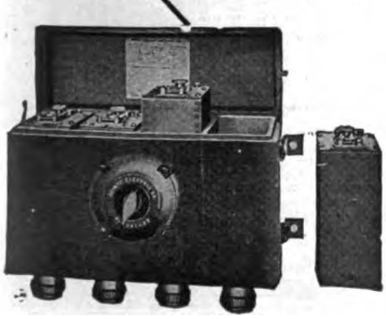
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Demonstrated before Board of Governors Harrisburg Motor Club with great success. For particulars write

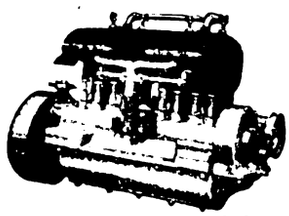
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which adds to the efficiency of the lamps, and keeps glare from blinding other users of the highways. Can be fitted to any existing lamp.

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Lambert Car

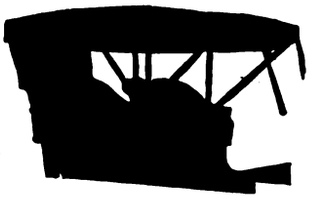
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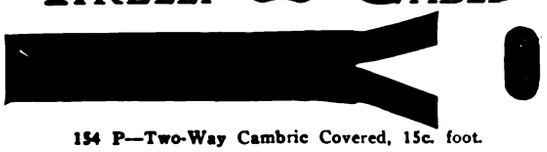
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on your automobile mean more comfort, speed, safety, economy. Prove it at our expense. 30 days free trial.
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Cannot Blow Out, Rim Cut or Puncture.
As Flexible as Rubber
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That part of a tire with a blowout or a rim cut in it will last longer than any other part if encircled by a few sections of steel.
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Give Your Car a Good Name
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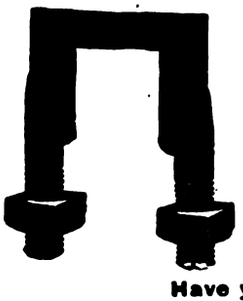
Change a bone-shaker and a spring-breaker into an easy riding, real automobile in which you can take pride and your passengers comfort. The use of S. S. S. change a near-good car to a real good car and add the finishing touch of luxury to the best cars. Our booklet tells you all about them, and is yours for the asking. Write for it.

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IGNITION ABSOLUTELY SURE

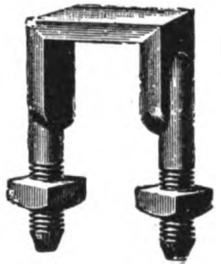
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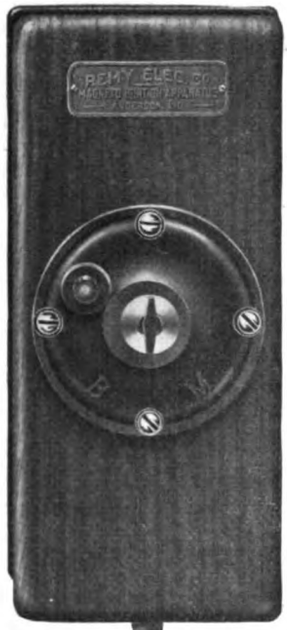
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Some Reasons Why the Remy Magneto Is Better Than Imported Magnetos For American Cars

IT HAS LARGER margins in its construction, electrically and mechanically, and does not have any delicate or sensitively adjusted parts.

IT PROVIDES FOR a double ignition system, consisting of both Magneto and battery, in the simplest possible way, not requiring additional wiring of any kind, as do all imported Magnetos where double ignition is used.

IT CAN BE installed, used or repaired by th most inexperienced motorist, with the certainty of satisfactory results.

IT CAN BE literally flooded with water or oil without injury. Too frequent oiling cannot injure it, as it will a more delicately constructed Magneto.

IT IS AN American Magneto, designed with the board margins that automobiles used on American roads require.

IT MAKES A hotter spark and permits of a larger range for advancing and retarding the spark.

IT IS GUARANTEED in a way that means something.

MORE OF THEM have been sold for American cars than all other makes of Magnetos combined.

Remy Magneto Under Water For Hours, Starts Motor on Second Turn of Crank

New Orleans, La., Jan. 16, 1909.

REMY ELECTRIC CO.,

Gentlemen: It may be interesting to you to know of some of the hardships to which your Remy Type L Magneto was subjected to, while on my trip South with my car.

A Commutator and coil system would have been utterly useless, especially at such times as when my car was buried in water over the Magneto and motor, for some times as long as four hours. It is remarkable to relate that at such times when we pulled the car from the water, by the aid of ropes, mules, and various methods, upon freeing the motor from the water with which it was filled (crank case and cylinders) and drying the spark plugs, that the motor would invariably start on the second turn of the crank from the Magneto, our batteries having been ruined from the long immersion in the water.

It is a fact that the above performance was repeated a number of times on our journey through the swamps of Florida. The first time we got the car submerged in water covering motor and Magneto, we fully expected that we would be compelled to remove the Magneto and thoroughly clean and dry it before we would be able to continue our journey.

You can imagine our surprise, when we thought we would at least try the thing before taking it off, and the motor started on the second turn of the crank. We just threw our hats and hurrahed for the Remy Magneto.

We are firm in our belief that no other ignition system could have taken our car through such trying condition without constant attention and an almost continual round of troubles, as the writer's experience with other ignition systems in wet weather firmly convinces him what would happen under such trving conditions as stated above.

My car ran a total of three thousand miles, and all the attention your Magneto required, was a few drops of oil occasionally, through mountains and sandy wastes, on low speed hours at a time without missing an explosion, sometimes the motor running at maximum speed. Our ignition system was a matter of which we rarely gave thought.

Wishing you continued success, which we are assured is yours, we are,

A. T. MOSHER.

Remy Magneto Best in Severe Tests Says Robert Burman

Famous racing pilot who led all American contestants in Light Car Race at Savannah, pays tribute to Remy Magneto, after series of successes in car equipped with this ignition system.

Flint, Mich., Jan. 2, 1906.

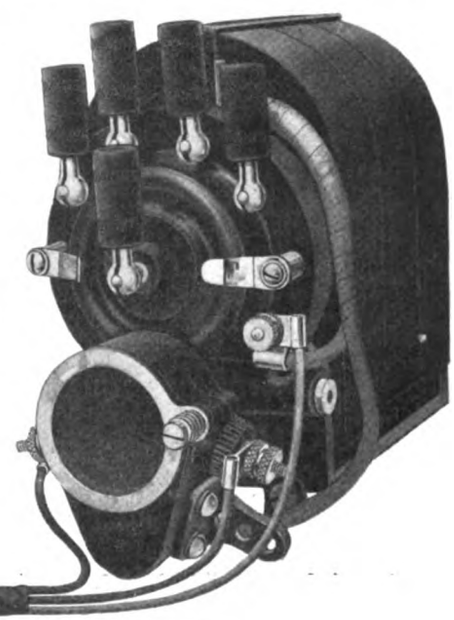
REMY ELECTRIC CO.,

Gentlemen: I have used your magneto for the past season on the Buick cars in racing and it has proven the best in the severe tests in which it has gone through. I have put the Remy through several 200 and 250 mile races and it has never had a minute's work done on it. It has never been readjusted even. I tried out other magnetos in the late Savannah races, but fell back on the Remy, because I knew that it was faster and had better staying qualities.

I was out practicing one morning and was trying out another make of magneto, when it went to the bad about one mile from our camp.

I sent my mechanician to the camp after a Remy, which I put on, and started out for a fast lap. The magneto was so fast that I could not keep the car in the road and struck a tree, chopping the car in two parts, and that is the only fault which I have to find with Remy Magneto.

R. BURMAN.



These are only samples of hundreds of letters received from satisfied drivers, manufacturers, agents and car owners.

The following firms are on the rapidly increasing list of those who use the Remy Magneto in large quantities:

Buick Motor Co.	Apperson Bros. Automobile Co.	Crawford Auto Co.
Maxwell-Briscoe Motor Co.	Overland Automobile Co.	Olds Motor Works.
Regal Motor Car Co.	Cameron Car Co.	Model Automobile Co.
Midland Motor Car Co.	Kissel Motor Car Co.	Buckeye Mfg. Co.

20,000 Remy Magnetos Sold For Use On 1909 American Automobiles

We furnish complete equipment for attaching the Remy Magneto to many of the old cars and also the new 1909 models that are not regularly equipped.

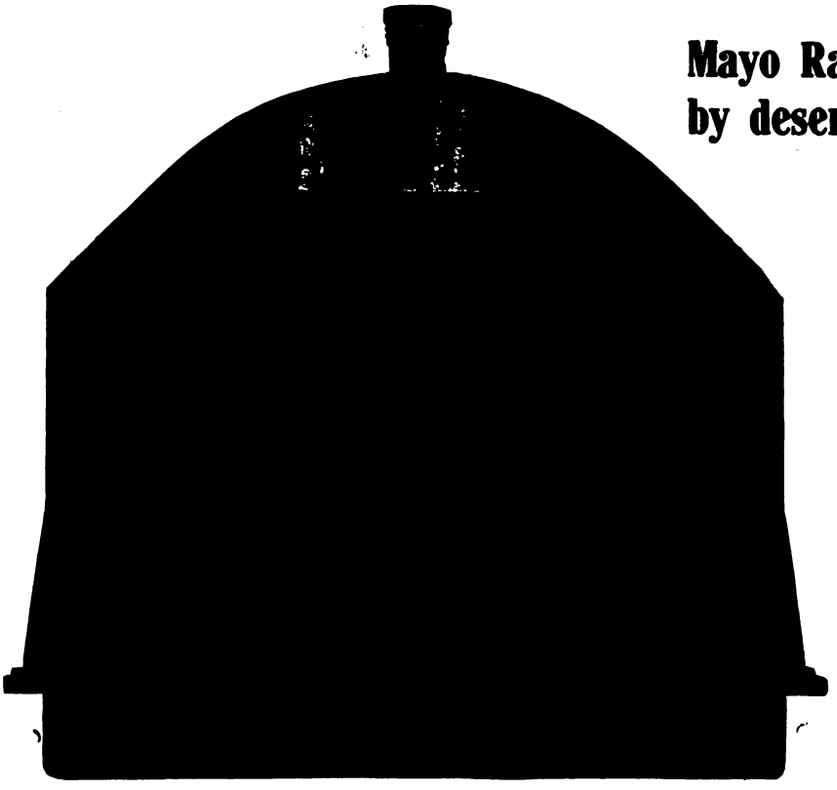
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REMY ELECTRIC CO., Dept. 11, Anderson, Ind.

Branch Office in Thoroughfare Building, Broadway and 57th St., New York City.

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'Tis not in mortals to command success, but we'll do more—deserve it.



Mayo Radiators have achieved success by deserving it, and in no other way.

¶ Therefore that success is presumably of the permanent and abiding kind.

¶ Price is the cause of the absence of MAYO RADIATORS from cheap cars.

¶ Quality is the reason for the presence of MAYO RADIATORS on most of the good cars.

¶ The only argument against MAYO RADIATORS is their price.

¶ Every other consideration dictates their use.

¶ MAYO RADIATORS combine sound mechanical principles, exact design, construction and workmanship, together with graceful appearance and perfect finish; in short, all the good qualities that go to make the ideal radiator.

¶ MAYO RADIATORS are stamped with the hallmark of class.

¶ MAYO RADIATORS are really the thoroughbreds of the radiator world.

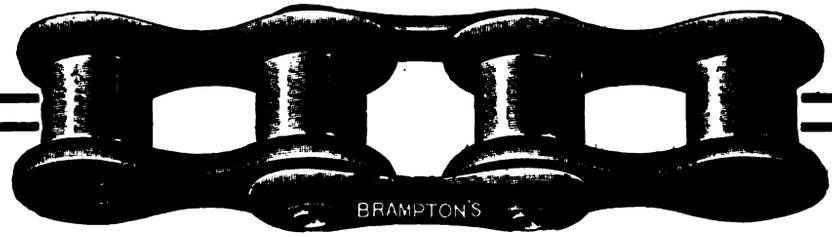
¶ MAYO RADIATORS are made in the kind of a factory that befits them and by the MAYO RADIATOR COMPANY, at New Haven, Connecticut.

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They are rapid sellers and bring many duplicate orders. Every customer a satisfied customer and a daily advertiser for you and the Brampton Chain. They are the strongest chain on the market. Made of self-hardening steel.

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The price is the same as you pay for any other chain, in fact all automobile chains now on the market are same price to manufacturers, jobbers, dealers and users, and our prices are the same as quoted by chain manufacturers.

PRICE THE SAME. QUALITY? INVESTIGATE. Get the best at the same price. Agents wanted in unoccupied territory. Catalog mailed upon request; the largest of its kind ever published.

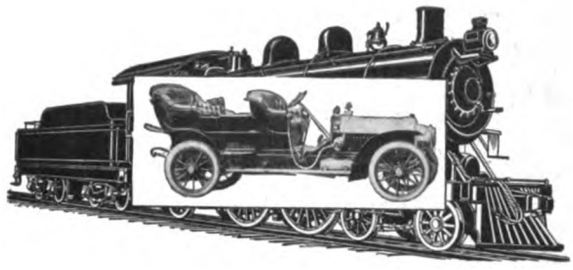
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"IT STAYS NEW"

THE

A.L.C O.

(Formerly "BERLIET")

Same French Design

Same Distinctive Quality

NEW MODELS
NEW NAME
NEW PRICES

6 Cylinder, 60 H. P. Touring Car, - $6000
4 Cylinder, 40 H. P. Touring Car, - 5000
4 Cylinder, 22 H. P. Town Car, - 4500

BETTER THAN IMPORTED CARS

AGENTS WANTED IN UNOCCUPIED TERRITORY

When you sell a man this car you make a life-long friend.

Built at Providence, R. I., with the backing of a $50,000,000 company

American Locomotive Co.

1886 Broadway
New York



1899 Model Equipped With Timken Bearings

EVENTS WON BY HAYNES CARS.

1895—(1) First prize, $150, for balanced motor, awarded by Chicago Times-Herald. (2) Speed Record, Louisville, Kentucky.
1897—(3) Speed Record, Charles River track, Boston, Mass.
1899—(4) First One Thousand Mile run made in America. This was accomplished by our phaeton, which ran from Kokomo, Indiana, to New York City.
1901—(5) Kokomo to New York City in 73 hours. (6) First Prize Blue Ribbon Certificate, Long Island Endurance run; one hundred miles during a heavy rain storm, without a single stop. (7a) First Prize Certificate in the New York-Rochester Endurance Contest. (8b) First Prize Certificate in the New York-Rochester Endurance Contest. (9) First Prize, Silver Cup, Five Mile Speed Contest, Fort Erie track, Buffalo, N. Y. (10) First Prize, Silver Cup. Ten Mile Speed Contest, Point Grosse track, Detroit, Mich. (11) Gold Medal, awarded Pan American Exposition.
1902—(12) Blue Ribbon, or highest award at the Long Island non-stop contest. (13) Blue Ribbon, or highest award at the Decoration Day run. (14) First Class Certificate in New York-Boston-New York Reliability contest, runabout model. (15) First Class Certificate in New York-Boston-New York Reliability Contest, standard model. (16) First Class Certificate in New York-Boston-New York Reliability Contest, surrey model.

All These Events Won on Timken Bearings

1903—(17) First Class Certificate in New York-Pittsburg run, touring car. (18) First Class Certificate in New York-Pittsburg run, runabout.
1904—(19) First Class Certificate in New York-St. Louis run. (20) Grand Prize at World's Fair at St. Louis.
1906—(23) In the final race, held third place on the American team.
1907—(24) Silver Cup, Automobile Dealers Association of Southern California, five-mile race for complete touring cars. (25) New York Motor Club, New York-Albany Endurance Contest, two hundred miles through mud and rain. Silver Cup for mechanical excellence and finishing first in its class. (26) Perfect score in four days Sealed Bonnet Contest, Automobile Club of America, 600 miles, with all working parts under seal; finished without a single adjustment. (27a) Perfect score in Chicago Motor Club Sealed Bonnet Contest, 176 miles, with all working parts under seal. (28b) Perfect score in Chicago Motor Club Sealed Bonnet Contest, 176 miles with all working parts under seal. (29c) Perfect score in Chicago Motor Club Sealed Bonnet Contest, 176 miles, with all working parts under seal. (30d) Perfect score in Chicago Motor Club Sealed Bonnet Contest, 176 miles, with all working parts under seal. (31) Perfect score in run from Los Angeles to Lakeside; most strenuous contest over mountain roads. (32) Perfect score in the Glidden Tour. The most difficult touring contest held in America. (33) Made fastest time of any car in its class, irrespective of price, in the Algonquin Hill Climb, Chicago Automobile Club Contest. (34) Perfect score in the New Jersey Automobile Motor Club's 24-hour endurance contest. (35) THE ONLY PERFECT SCORE IN THE CHICAGO MOTOR CLUB'S 600 mile reliability contest.

Past, Present, Future, Always Timken

1909 Still Using Timken Bearings

The Timken Roller Bearing Axle Co.

CANTON, OHIO

BRANCHES—10 E. 31st St., New York; 429 Wabash Ave., Chicago.



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New Price List

Weed Chain Tire Grips

The new price list now in effect, for Weed Chain Tire Grips follows:

American Sizes	Per Pair	American Sizes	Per Pair
28x2½	$5.00	33x4	9.50
30x2½	5.50	34x3	9.50
28x3	6.50	34x3½	9.50
28x3½	6.50	34x4	9.75
30x3	7.00	36x3	9.75
30x3½	7.00	34x4½	10.00
32x3	8.00	36x3½	10.00
30x4	8.50	36x4	10.00
30x4½	8.50	36x4½	10.50
32x3½	8.50	34x5	10.50
32x4	9.00	36x5	11.00
32x4½	9.00		

Dunlop 3, 4 and 5-inch tires require grips one size longer, as do Fisk 28x3, and all sizes of Bailey and similar treads.

CROSS CHAINS, Complete.

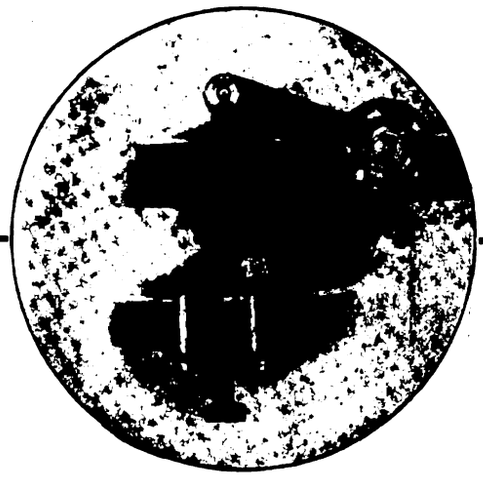
2½-inch	5 cents	3½-inch	8 cents	4½-inch	10 cents
3 "	7 cents	4 "	9 cents	5 "	12 cents

All Weed Cross Chains are specially hardened and Brass Plated. Insist upon getting brass plated chains.

WEED CHAIN TIRE GRIP CO. 28 Moore St. New York

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Should be on your car



The Standard of the World

Not an accessory—but a proven necessity. Should be as much a part of your car as its springs or tires.

For argument's sake, suppose that Truffault-Hartford Shock Absorbers had not been an integral part of every car in every great International Road Race, Glidden Tour or Endurance Contest.

Suppose that twenty prominent manufacturers did not make the Truffault-Hartford a part of their standard equipment, then if we showed you letters from men who have used the

TRUFFAULT-HARTFORD SHOCK ABSORBER

and these men told you that broken springs were unknown, that all troubles due to vibration, jar and jolt were eliminated and that their cars ran smoothly at high speed on roads that, without Truffault-Hartford Shock Absorbers would be impossible,—if we did this,—you would equip your car, wouldn't you?

WE CAN DO THIS—we have just such letters and proofs from hundreds of satisfied owners that the Truffault-Hartford Shock Absorber does more than we claim. Then consider that twenty prominent manufacturers do make the Truffault-Hartford part of their car,—that's the best proof we know that they should be on your car.

Tell us the make, model and year of your car and let us arrange to equip it with these "life-savers." At any rate, send for our catalogue and other literature, now—today.

HARTFORD SUSPENSION COMPANY
164 BAY STREET, JERSEY CITY, N. J.

Branches in NEW YORK—212 to 214 West 88th St.
BOSTON—319 Columbus Avenue

A Heart-to-Heart Talk About the "Maxwell"

AN ADVERTISING MAN called on us recently and told us how we should—or rather how he thought we should—advertise the Maxwell. "You Maxwell-Briscoe people"—said he—"talk too much about your factories and equipment.

"WHAT DOES THE PUBLIC CARE," he continued, "whether you have three great plants—one at Tarrytown, N. Y., another at Pawtucket, R. I., and a third, the largest of its kind, at New Castle, Ind.? The public don't care whether your factories represent an equipment of a million and a half dollars or not. Tell them about the car itself—bring up all the talking points you have." We thanked him of course, for we like to have ideas, but—we did not follow his advice.

BUT THE PUBLIC DOES CARE—for today there are two hundred and fifty-three different companies making Automobiles. How many of these will be in business a year hence? Judge by past records: In 1902 eighteen concerns went to the wall; in 1903 thirty failed; in 1904 forty died. During the past five years one hundred and fifty-five concerns have discontinued—that's why we know the public cares.

WHEN YOU BUY LIFE INSURANCE—do you pin your faith to the newcomer in the field or to that concern which, by hard work and ample experience has been able to give its patrons an **insurance that insures?** In every line some name stands prominent—Steinway on a piano—Smith & Wesson on a revolver—McCormack or Deering on a harvester are known the world over. Why? Because they are standard. So it is in Automobiles—the "Maxwell" is the Standard Car of moderate price—of established value.

IT HAS BEEN OUR AMBITION to build the best moderate priced car; best in material, workmanship and durability. To this we have been faithful, by refusing to compete in price with every experiment.

MR. J. D. MAXWELL I consider the best designer of automobiles in the world; a man who from the beginning has been a hater of shams and a despiser of pretense—a man who has created an American car—not a copy.

NO OTHER CAR THAN THE MAXWELL incorporates in a single design the principles of **Three-Point Suspension—Multiple Disk Clutch—Thermo Syphon Cooling—Straight Line Shaft Drive—Metal Bodies**—principles that were as much a part of the "Maxwell" in 1904 as they are today.

THE MAXWELL LINE—MAGNETO EQUIPPED—is complete. The 30 H.P. 4-cylinder touring car or roadster, for those who want a speedy, powerful 4-cylinder car, costs $1,750. The 20 H.P. 2-cylinder touring car, fully equipped, the standard 2-cylinder car of America at $1,450—is the logical car at its price. The Maxwell 2-cylinder 14 H.P. runabout, the "Aristocrat of its class," costs $825, with complete equipment.

AND, LASTLY, THE MAXWELL JUNIOR AT $500. Here is a revelation—a 2-cylinder 10 H.P. Runabout—a Maxwell Runabout—for $500—one that we give our personal warrant for reliability and performance.

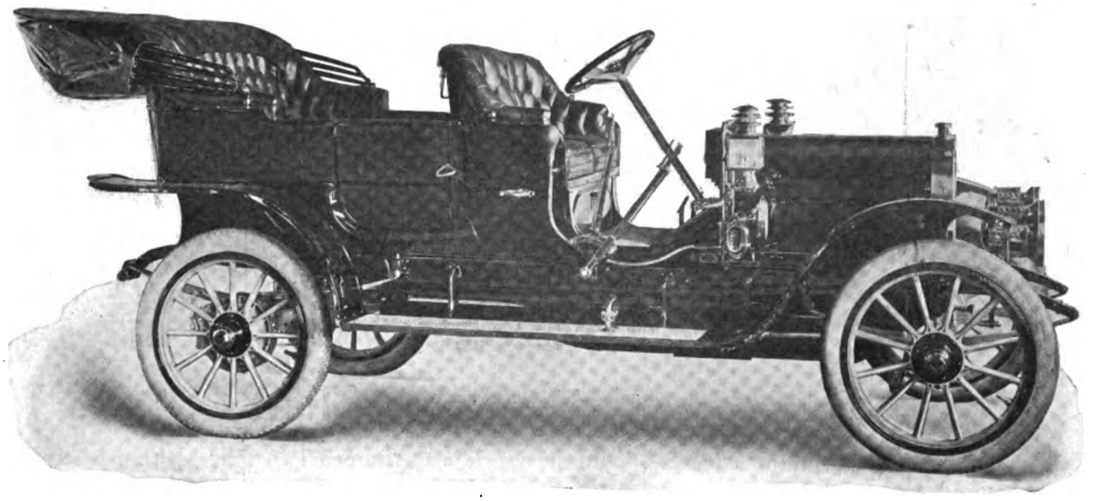
TWELVE THOUSAND SATISFIED OWNERS prove Maxwell success—and—remember, when you buy a Maxwell you buy a car behind which stands the Maxwell-Briscoe Motor Co., with an equipment which represents over a million and one-half dollars.

Benj. Briscoe
President.

MAXWELL-BRISCOE MOTOR COMPANY
P. O. Box 106—TARRYTOWN, N. Y.
Main Office and Factory.
Pawtucket, R. I. **New Castle, Ind.**

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"THE SILENT SELDEN"



$2,000 F. O. B. ROCHESTER, N. Y.

AFTER the remarkable results of our "first year"—the achieved success of 1908, we salute you with real and well established confidence as we introduce the Selden of 1909.

Not only has our promise to produce a high grade car of best materials and workmanship for $2000 been strictly fulfilled, but we have demonstrated the Selden genius in a silent, strong, comfortable, durable and handsome car. It does all that the owner wants to do and all that the chaffeur ought to do. Agents and owners are enthusiastic over it. Not a cheap car at all but one of the how-can-you-do-it-for-the-money kind.

Our 1909 wheel base is lengthened 5 inches from 109 to 114; the magneto and pump moved to left side of motor, the remaining equipment on the right; the brakes enlarged and now rigged inside the frame; the wheels now 34 inches were 32 inches; the radiator and hood made to conform in style to longer wheel base—little touches for style and convenience. No radical mechanical changes, simply because we couldn't find any necessary—no use fooling with what has proved so unusually good.

We can assure those who buy the 1909 Seldens all the efficiency of the 1908 Seldens with a little more style and a little more convenience, a little more refinement. The actual records of use and travel this year have so proven their merit, power and economic stability that it would be hard to promise anything better in practical construction.

THE COMING CAR OF MODERATE PRICE

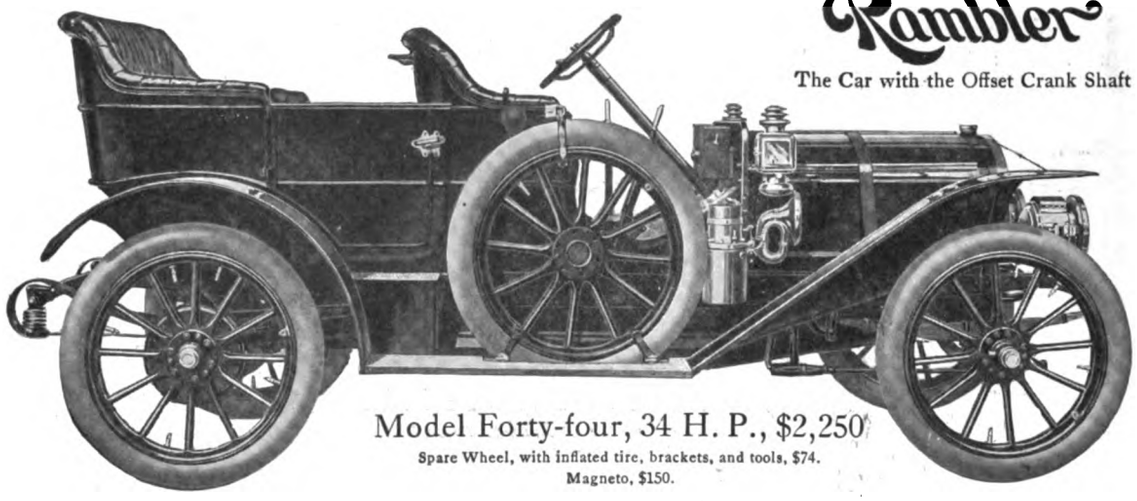
Catalog and Agency Proposition upon Request. Agencies Wanted Everywhere.

Selden Motor Vehicle Co., Rochester, N. Y.

GEORGE B. SELDEN, President

Members Association Licensed Automobile Manufacturers.

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Rambler

The Car with the Offset Crank Shaft

Model Forty-four, 34 H. P., $2,250

Spare Wheel, with inflated tire, brackets, and tools, $74.
Magneto, $150.

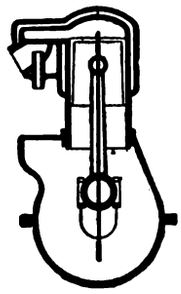
Why the Offset Crank-Shaft?

Notice a man about to mount a bicycle. He always adjusts the pedal in that position where it will receive to best advantage his full weight on the first downward stroke. This position for the pedal is just slightly forward of the center of the crank-shaft of the bicycle. If he mounted when the pedal was directly over the center of the crank-shaft, his weight would fall directly on the bearings and the first downward stroke would be retarded and therefore weak.

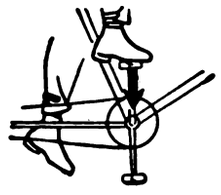
Now imagine the man's leg as the piston of an automobile engine, the pedal of the bicycle as the crank-pin, and the crank-shaft of the bicycle as the crank-shaft of the engine. In the ordinary engine the crank-pin and piston (the pedal and the man's leg) are directly over the dead center, and until the crank passes the turning point all effort is wasted. Thus when the explosion occurs the greatest force falls upon the bearings.

In the Rambler engine, at the instant the explosion occurs above the piston the crank-pin has moved past the dead center; the crank-shaft is in a position to receive the full pressure and turns without friction. No shock falls on the bearings; there is no side thrust, and wear on the cylinder walls is thus saved.

Because of this feature Rambler Model Forty-four can be operated smoothly and steadily at three miles an hour on high gear



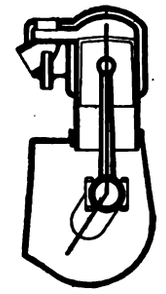
Ordinary Engine. Position of piston at explosion center.



Corresponds to position of piston in ordinary engine at explosion center.



Corresponds to position of piston in Rambler engine at explosion center.



Rambler Offset Crank-Shaft. Position of piston at explosion center.

Seven-passenger model, 45 horsepower, with offset crank-shaft, $2,500. Other models $1,150 to $2,500. A new Rambler catalog has just been issued. It describes and illustrates all distinctive features of new Ramblers--the offset crank-shaft, Spare Wheel, straight-line drive, etc. A copy on request.

THE CAR OF STEADY SERVICE

Thomas B. Jeffery & Company

Main Office and Factory, Kenosha, Wis.

Branches and Distributing Agencies: Chicago, Milwaukee, New York, Cleveland, Boston, San Francisco.

The new Rambler Models will be shown and demonstrated at the Coliseum, Space B-2, and at our Chicago Branch, 1462-1464 Michigan Ave., during the Chicago Automobile Show. Telephone Calumet 3000, give your address, and we will call for you.

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, February 18, 1909. No. 21

TIRE JACKET INFRINGEMENT SUIT

Specialty Company Claims Patent Rights in Fastening Device—New York Jobber Sued for Selling the Goods.

Trade complications resulting from the conflict of patent rights in the field of automobile accessories are becoming more pronounced as the industry progresses, as is again evidenced by the fact that suit has been brought against Charles E. Miller, the prominent New York jobber, exporter and importer, for alleged infringement in handling tire cases or jackets of a type which the plaintiff maintains comes within the range of its patent claims. The jackets are used for the purpose of protecting spare tires that may be carried on the car, and the particular style which forms the basis of the suit is equipped with snap buttons on the overlapping part, so that when the tire is enclosed, the final fastening of its protecting cover is at once expeditious and secure. A patent covering a construction of this kind is owned by the Allen Auto Specialty Co., of New York, the plaintiff in the action. It was applied for December 20, 1904, and was issued to Benjamin Nathan on September 19, 1905, bearing No. 799,662.

In the bill of complaint in the United States court, it is alleged that Miller is infringing the rights granted under the patent by selling jackets or covers made by the Gilbert Mfg. Co., of New Haven, Conn., and embodying the button fastener feature. An injunction is asked for, to restrain him from further traffic in the jackets, and an accounting for damages is requested. While Miller alone is the defendant, it is understood that the Gilbert company will assume the chief burden of the defense, both with a view to protecting Miller as their customer and to establish the non-infringing character of their product, as the issue of the case will be of wide trade effect owing to the fact that jobbers and dealers throughout the country are handling tire jackets of the type in question.

New Company to Make Wheels.

Encouraged by a government order for 70 sets of wheels with pneumatic hubs, the invention of G. W. Akehurst, of Baltimore, Md., a company has been formed in Newark, N. J., for their manufacture. It will be known as the No-Worry Pneumatic Wheel Co. The patents under which it will operate are owned by Dr. George S. Maxwell, of Velleville, N. J., and Dr. Zeno B. Babbitt, of Washington, D. C.

"Long-Arm" to Make Direct Sales.

The "Long-Arm" System Co., of Cleveland, O., announces that the sale of its products will hereafter be conducted direct instead of through a selling agency. The change is looked to as providing a clearer business understanding and closer engineering touch with customers. In the future correspondence relating to all matters should be addressed direct to the company.

St. Joe Adopts a New Name.

In moving from Elkhart, Ind., to Hutchinson, Kan., the St. Joe Motor Car Co., has undergone a change of name. It is now known as the Sellers Motor Car Co. Application has been filed for incorporation under Kansas laws with $100,000 capital. O. G. Sellers is slated for the presidency. A site has been taken on South Main street.

Boulder Building a Factory.

Boulder, Colo., is to boast of an automobile factory, which is being built by the American Machine & Mfg. Co. The concern will call its product the Linace car. J. H. Wallace, W. E. Whitacre and R. Lindemann are back of the enterprise.

Springfield in Another Springfield.

Preserving a town location that jibes with its name, the Springfield Automobile Co., in moving from Springfield, Mass., has selected Springfield, Ill., as its new home. The company has taken the third floor of the R. Haas Electrical Co.'s building.

REFILLING GAS TANKS MAY GO ON

Prest-O-Lite Fails to Secure Preliminary Injunction—Its Application Based on Considerations of Safety.

Conducting an extensive legal campaign with the object of maintaining a monopoly so far as possible on the compressed acetylene gas tank business, the Prest-O-Lite Co., of Indianapolis, Ind., in a suit brought against B. A. Carrier, of East Hampton, Conn., this week failed to convince the United States circuit court at Hartford, Conn., that a preliminary injunction should be granted to restrain the defendant from refilling Prest-O-Lite tanks with gas. The plaintiff has for some time been endeavoring to break up the practice on the part of others of recharging its tanks, and by litigation has succeeded in compelling those who engage in it to place conspicuous labels on such Prest-O-Lite tanks as they recharge, so that the Prest-O-Lite name will be concealed and the name of the recharging concern will be disclosed. Having won victories along this line, the company is trying to press matters still further by attempts to secure injunctions against those who refill its tanks, on the ground that the tanks when recharged elsewhere than at the Prest-O-Lite factory present a menace to human life because of their explosive possibilities.

Suit in the present instance was brought recently against both Carrier and George L. Wilkinson, who lives in Manchester, Conn., but action against Wilkinson was subsequently dropped and the attack concentrated on Carrier. Judge James P. Platt, of the Federal court, upon the showing made by the Prest-O-Lite Co., was not sufficiently convinced of the immediate dangers to the trade and the public which formed the basis of the company's request for a restraining order, and its motion for a preliminary injunction against Carrier, pending the final hearing, was denied.

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WANT EXPRESS BUSINESS PROBED

New York Merchants' Association Inaugurates an Important Movement—The Complaints of Shippers Invited.

Shippers in the automobile trade, having business with the express companies, are concerned in an investigation of express company methods which the Merchants' Association of New York is petitioning the Public Service Commission of the second New York district to make. To assist the association in responding to a request for as complete a statement of facts as possible, shippers who have well-defined and reasonable grounds for complaint and can give concrete instances of practices which appear to be unjust, are urged to present them.

The investigation will relate particularly to the following points: Inequalities in charges, such as different charges over the same route in opposite directions, or different charges for equal distances, etc.; extra charges for delivery, in excess of tariff rates; delays in delivery; failure to notify shippers of non-delivery; delay in returning undelivered goods; delay in settlement of claims; disregard of specified routing; unreasonable restriction of size of packages; unreasonable requirements as to methods of packing; delay in accounting for collections; refusal to collect and return "empties," and similar practices.

Already the mass of evidence which the association has prepared to show that the express companies should change materially in their treatment of the shippers, has attained large proportions, but contributions from other complainants are welcomed, and should be addressed to the association at 66-72 Lafayette street, New York City,

In its request for the investigation, the association summarizes its case as follows:

"In view of the great increase in the volume of express traffic; the presumptive decrease ir the cost of performing the service consequent upon the increase in the volume of traffic; the failure of express companies to decrease rates in proportion to decrease in cost of operation; apparently excessive profits evidenced by liberal dividends upon greatly inflated capitalization and the accumulation of vast surplus funds; and excessive terminal charges, made on the false basis of distance instead of service—this association believes that the rates charged by express companies are unjust and unreasonable in that they return an excessive profit upon the capital actually used for the necessary purposes of the express business, bear no just relation to the cost of performing the service and impose a heavy, unjustifiable burden upon shippers.

"Having further in view the numerous and varied complaints from shippers, we believe that many of the rules, practices and methods of the several express companies should be revised in such manner as to remove just cause of complaints and adjust the relation of shippers and carriers more equitable than at present.

"We therefore respectfully pray, that pursuant to the powers conferred by Secs. 48 and 49 of the Public Service Commissions Act, your Honors will: (1) Investigate the justice and reasonableness of the rates charged by each of the express companies doing business in the State of New York, and establish schedules of charges, based upon the cost of performing the service, such charges to be so adjusted as to provide no more than a liberal profit upon the capital actually required for the efficient operation of the service, and in addition such further sums as may reasonably be set aside as a surplus for contingencies. (2) Investigate the operation of the methods, practices, rules and regulations of the express companies, in such manner as to develop such defects as may exist, and thereafter order such revision, addition, amendment or abolition as will remove just cause of complaint and establish equitable relations between carriers and shippers."

To Manage Western Lamp Sales.

Charles S. Monson has been appointed western sales manager for Gray & Davis, of Amesbury, Mass. In advancing the company's lamp sales he will bring to bear a wide trade experience, having at one time been superintendent of agencies for the Gormully & Jeffery Mfg. Co., later with the Hartford Rubber Works Co. for four years, and for the past three years manager of the Detroit branch of the G & J Tire Co.

New York to Have Biggest Garage.

What is promised to be one of the largest garage buildings in the world is to be erected on a plot in Sixty-sixth and Sixty-seventh street just west of West End avenue, New York City, by William C. Boschen, George L. Hoxie and Newell Martin. The building, which will be near the New York Central railroad tracks, will consist of four stories and a basement and will have a ground floor area of 44,000 square feet.

Birdsall Resumes Engineering Practice.

E. T. Birdsall, who recently severed his connection with the Selden Motor Vehicle Co., of Rochester, N. Y., has opened an office at 41 West Sixty-third street, New York City, where he will resume his practice as a consulting engineer and an expert in law and patent cases. He has also established a brokerage department for opinions on used cars.

Redondo's New Factory in Trouble.

Trouble has fallen upon the new automobile factory at Redondo, Cal., which was launched a few months ago. Laborers and others have made demands for their pay, and threaten liens on the property.

RAINIER'S MANY TRADE CREDITORS

What the Schedule in Bankruptcy Discloses—Total Liabilities $290,355, and Nominal Assets $283,818.

Many prominent trade creditors are shown in the schedules in bankruptcy of the Rainier Motor Car Co., New York City and Saginaw, Mich. Although the company went into the hands of a receiver last fall, and has since been bought in by John T. Rainier and his associates, subject to certain conditions, the bankruptcy schedules were not filed until last Friday, the 12th inst. They disclose liabilities amounting to $290,355 and nominal assets, $283,818, consisting of stock, $43,000; machinery and fixtures, $125,000; accounts, $114,228; delivery wagon, $1,200; cash, $220, and notes, $170. There are also unliquidated claims for damages aggregating $89,292, the actual value of which is unknown. Of the liabilities $100,000 are secured and $5,787 are for wages.

Among the creditors are the Bank of Saginaw, $90,000, secured; Briggs, Carlisle & Wickes, Saginaw, $6,000, secured; Wickes, Briggs and Comstock, Saginaw, $4,000, secured; Viola C. Rainier, $39,500, money loaned; O. B. Potter estate, $2,199; Burr & Co., $3,266; Knauth, Nachod & Kuhne, $4,500; Standard Oil Co., $1,074; Henry Hook & Co., New Haven, $11,626; Diamond Rubber Co., Akron, O., $10,514; McCord Co., Chicago, $3,899; Auto Crank Shaft Co., Detroit, $5,255; Saratoga Auto Top Co., $2,776; Gray & Davis, Amesbury, Mass., $2,961; A. O. Smith & Co., Milwaukee, $2,972; L. R. Kerr, Jersey City, $2,000; Springfield (Mass.) Metal Body Co., $13,567; Garford Motor Car Co., $1,381; Lewis M. Borden, $2,196; Wilcox Engineering Co., $1,129; Western Malleable Steel Co., Detroit, $2,380; Robert Bosch & Co., $1,301; Hayes Manufacturing Co., Detroit, $1,280; Imperial Wheel Co., Flint, Mich., $1,530; and Riverside Bank, $3,300.

Newmark to Direct Oakland Publicity.

J. H. Newmark is to have charge of the newly instituted advertising department of the Oakland Motor Car Co., of Pontiac, Mich. He was formerly with the Olds Motor Works.

United & Globe a Trenton Concern.

The United & Globe Rubber Mfg. Co.s. recently reported to be making automobile tires in Newark, N. J., are located at Trenton, N. J. All of their factories are in the latter city.

Baylies an Austin Manager.

Harry L. Baylies has been appointed Chicago manager for the Austin Automobile Co., of Grand Rapids, Mich. He will commence his new duties in the near future.

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In the Retail World.

Mason A. Dingley has reopened his garage and repair shop on Maiden lane, Painesville, O.

The Melrose Automobile Co., of Melrose, Mass., has moved from Emerson street. It is now established at 364 Franklin street.

The Boston branch of the Locomobile Co. of America now is permanently located in its new quarters at 589 Boylston street.

R. K. Stout, formerly with the Toledo Motor Car Co., has opened a salesroom in Toledo, O. It is situated at 1001 Jeff avenue.

The Norris Auto Co., of Saginaw, Mich., has changed its name to the Saginaw Auto Co. Several new cars will be added to its agency list.

John Lewis has bought Whitcomb & Faulkner's repair department business at Palmer, Mass. He will conduct the garage on Main street.

The Empire Automobile Tire Co., Chicago, have leased a building at 1305 Michigan avenue, and will remodel it prior to their occupancy.

G. W. Hawkins is to be the distributor of Maxwell cars in Houston, Tex. The territory in south and east Texas will be supplied from this center.

The Ford Motor Co., of Detroit, has leased in Toledo, O., the building at 218 Superior street, and will open a salesroom for automobiles and supplies.

Robert W. Trimble and E. G. Love, of St. Paul, Minn., have opened a garage in Pine Bluff, Ark. It is located on East Court. They will handle Oakland cars.

Wallis & Culbertson Co., Dubuque, Iowa, has decided to build a large salesroom and garage. A location has been taken on Iowa street, next the Conolly carriage manufactory.

Hartford, Conn., has a new garage in an establishment just opened for the sale and care of Oakland cars. It is located at 26 Kinsley street, and A. W. Peard is the proprietor.

J. W. Leavitt & Co., San Francisco, have taken possession of their permanent quarters at Hyde street and Golden Gate avenue. Their new home is spacious and attractive.

The Guarantee Garage and Machine Co., Santa Ana, Cal., has located in a new building at Second and Brush streets. They do all sorts of automobile work and deal in supplies.

F. M. Woods, of Cedar Rapids, Iowa, having acquired the Terry Garage and the American Auto Co., both of that city, will operate them under the name of the Iowa Motor Car Co.

A. B. Haworth, formerly of the Locomobile company's Chicago branch and later with the Terre Haute Automobile Co., has begun business for himself in Terre Haute, Ind. He has leased the building opposite the Fillbeck Hotel, at the northeast corner of Fifth and Cherry streets, and will handle the Locomobile and other cars.

The Franklin Motor Car Co., representing the H. H. Franklin Mfg. Co., in Philadelphia, has secured a show room at 138 North Broad street. It is also building a garage in West Philadelphia.

A. M. Robbins, manager of the Centaur Motor Co.'s store in Chicago, Ill., has added another line to the Oakland. His establishment will be the Windy City headquarters for the Moon.

Cordner, Flinn & Toppin is the revised name of the firm in New York City which has the agency for Acme cars. C. F. Toppin, the new member, is an accession from the life insurance ranks.

Herbert Hackeler's garage at Overbrook, Pa., was burned on the 8th inst., and 14 automobiles owned by residents of Overbrook and Merion were destroyed. The loss is placed at $75,000.

The Atwood Automobile Co., Toledo, O., has leased from the Toledo Motor Car Co., its building on Madison avenue, between Tenth and Eleventh streets. The lessees will use it for a downtown branch.

B. A. Bone has sold his automobile business at Commercial and Park streets, Kewanee, Ill., to O. B. Olson. The latter will conduct a light pump manufacturing enterprise in connection with the garage.

The Wheeling Auto Co., of Wheeling, W. Va., has been organized by B. F. Perkins and Allison Dick. A commodious garage and salesroom has been opened in the Perkins building at 2321-27 Main street.

The Consolidated Motor Car Co., Franklin dealer in San Francisco, has established a branch at Oakland, with Tracy Holmes as manager. The branch is at the corner of Telegraph avenue and Twenty-second street.

The Otis Motor Car Co., South Bend, Ind., has started the construction of a new garage and Franklin sales room in the heart of the business district, near the Oliver Hotel. Its floor dimensions are 20 by 80 feet.

Firestone tires will be handled in Cleveland, O., by a direct branch of the company after the first of March. The company has leased the entire basement at 1918-1922 Euclid avenue, and is remodeling the premises.

The Iowa Motor Car Co., of Cedar Falls, Iowa, has purchased the business and equipment of the American Auto Co. and will occupy the garage at Second street and Fourth avenue. F. M. Woods will be the manager.

August J. Mandell, Arthur Zeller and C. Zeller have organized the Economy Auto Garage Co., in Detroit, Mich., and have opened up for business at 10 Selden avenue. They will make the repair and storage of automobiles their principal business, and will deal in second hand machines.

The Atlantic Automobile Co., Council Bluffs, Iowa, has filed articles of incorporation and has completed plans for a garage. The latter will be on Fourth street, directly opposite that recently erected by H. H. Van Brunt.

The Lubeck Automobile Co. of Grand Rapids, Mich., has been placed in the hands of David E. Warner as receiver, preparatory to the concern retiring from business. It is stated that the liabilities are fully covered by the assets.

Hall Brothers, of Manitowoc, Wis., were visited by fire on the night of February 5. The blaze destroyed their garage and warehouse and burned several machines. The loss was estimated at $10,000 with about $4,500 insurance.

Osmond L. Barringer, of Charlotte, N. C., has planned to build a garage on Eighth street, 50x180 feet in ground dimensions and one story high. A show room will occupy the front and a fully equipped repair shop will be in the rear portion.

The Cadillac Automobile Co., of Indianapolis, Ind., suffered a fire loss on the 1st inst., estimated at $18,000. The garage at 25 East Ohio street was badly burned and 13 cars were damaged. All the losses are thought to be covered by insurance.

The B. D. Whitten Automobile Co., recently organized in Great Falls, Mont., has taken over the machinery, fixtures and business of the Evans Engineering Co., and will conduct a garage and repair shop. B. D. Whitten will be the superintendent.

Two university boys have opened a garage in Eugene, Ore., where the University of Oregon is located. They are Roy Zacharius and Fred Moullen. The latter has considerable automobile experience, having spent several summers working in large garages.

Herbert MacKellar's garage, 2099 North Sixty-third street, Philadelphia, Pa., was swept by fire on the 8th inst., resulting in a loss amounting to about $75,000, including the cars of private owners. Only a small portion of the loss was covered by insurance.

W. R. Reid and W. E. Ludwick are about to open a garage in Moline, Ill., under the firm name of Reid & Ludwick. The establishment will be at 404 Sixteenth street. Ludwick has been foreman in the Root & Vandervoort garage in East Moline for eight years.

The Solliday Motor Car Co., of Milwaukee, Wis., has been sold to George L. Stephenson, A. E. Halderman and George A. Davis and will hereafter be known as the Stephenson Motor Car Co. The concern will handle the Overland, Speedwell and Welch cars.

The New York City office of the Hess-Bright Mfg. Co., Philadelphia, Pa., has been removed from 90 West street to 1974 Broadway, above Sixty-sixth street, where a store has been opened with a complete line of the

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company's products. George T. Gwilliam is the resident manager.

The Binghamton Auto Repair Co., Binghamton, N. Y., has been adjudged bankrupt by U. S. Judge Ray, of Norwich. The company is a co-partnership composed of Ralph Ives, Lynn D. Robinson and Fay E. Spawn

V. A. Simrell and A. J. Schnell have begun business in Scranton, Pa., as the Court House Square Garage. They have located at 527-531 Linden street, where they will handle Studebaker and E-M-F. cars. Repairing will be a branch of their business and they will carry accessories.

W. A. Fox, representing the Cartercar in Minneapolis, Minn., has moved from 249 Third avenue, S., to Ninth street and Hennepin avenue. His new space is in connection with the Minnesota Motor Sales Co., and the name of his company will hereafter be the Fox Motor Car Co.

The Martin Auto Co., a new concern in Newark, N. J., has opened the De Kamp garage, 284 Halsey street, after making extensive alterations and improvements. F. L. C. Martin, State distributor of Mitchell cars, heads the company, and A. A. Russell, secretary and treasurer, is manager.

The Guy L. Smith Automobile Co., 310-312 South Nineteenth street, Omaha, Neb., is about to begin the construction of a new fireproof building near Twentieth and Farnam streets. It will be larger than their present quarters and is to be a handsome structure with all the latest conveniences.

The property of the Continental Automobile Co., 93-99 Jefferson avenue, Grand Rapids, Mich., was seized on the 28th ult., on three attachments. The attachments are subject to a chattel mortgage held by a creditor not party to the proceedings, and amounting to $1,500. The inventory of the property totals about $3,600.

The Lozier Motor Co. will move within a few days from its present quarters at Fifty-fifth street and Broadway, New York City, to the five story building at Broadway and Fifty-sixth street, where it will have about double the room now occupied. The building has a large frontage on both thoroughfares and is thoroughly equipped.

The Levy & Hipple Motor Co., Chicago, has moved from Wabash avenue to its new building, 1467-69 Michigan ave. The building affords 20,412 feet of floor space on three floors, and a mezzanine floor which forms a gallery to the main floor. With its glass and white tile front the establishment is one of the most impressive on automobile row.

Rockford, Ill., has a new garage at Sixth and Charles streets, just completed for the Standard Auto Co. It is a one story building, 100x40 feet, constructed of concrete blocks. The equipment is up to date. The company has applied for incorporation. Dr. Emil Lofgren, Dr. G. Laon, Dr. W. E. Park, John Wester and Swan O. Widell are the proprietors. Leonard Lundstrom is manager.

The Week's Incorporations.

Detroit, Mich.—Economy Auto Garage Co., under Michigan laws, with $1,000 capital.

Chicago, Ill.—Reo Automobile Co., under Illinois laws, with $2,500 capital. Corporators—O. C. Owen, B. C. Buxton and William R. Watson.

Denver, Colo.—Griebel Motor Car Co., under Colorado laws, with $20,000 capital. Corporators—Henry R. Griebel, Blanche Griebel and A. Lloyd Wilkins.

Jersey City, N. J.—Automobile Co. of America, under New Jersey laws, with $500,000 capital. Corporators—A. C. Watson, B. Lockwood, Jr., and R. F. Tully.

Muskegon, Mich.—Muskegon Motor Specialties Co., under Michigan laws, with $20,000 capital. Corporators—C. L. Chamberlain, C. E. Johnson and J. W. Wilson.

Chicago, Ill.—Overland Motor Co., under Illinois laws, with $1,000 capital; to deal in automobiles. Corporators—W. J. Bowman, C. W. Price and Nathan S. Swyser.

Jersey City, N. J.—National Motor Cab Co., under New Jersey laws, with $2,000 capital. Corporators—The Corporation Trust Co., H. O. Coughlin, B. S. Mantz and Arthur W. Britten.

Chicago, Ill.—W. O. Dayton Automobile Co., The, under Illinois laws, with $10,000 capital; to manufacture and deal in motor cars. Corporators—W. O. Dayton, T. A. Ryan and O. F. Cole.

Providence, R. I.—Greenleaf Automobile Co., The, under Rhode Island laws, with $50,000 capital; to deal in cars. Corporators—Clarence Kinne, Grafton G. Greenleaf and Ira J. Martin.

Philadelphia and New York City—Stoyle-Vogel Co., The, under New Jersey laws, with $100,000 capital; to deal in automobiles. Corporators—Wilson H. Stoyle, Lewis G. Vogel and Frank A. Kuntz.

Vernon, N. J.—Vernon Motor Co., under New Jersey laws, with $25,000 capital; to deal in motor vehicles. Corporators—William H. Carey, Charles J. Gormley and John H. Patterson, of Jersey City.

New Rochelle, N. Y.—New Rochelle Motor Car Co., The, under New York laws, with $10,000 capital; to deal in cars and accessories. Corporators—Robert A. Joyce, Grace M. Joyce and Frederick W. Ott.

Boulder, Colo.—American Machine & Manufacturing Co., The, under Colorado laws, with $100,000 capital; to manufacture the Linace motor car. Corporators—J. H. Wallace, W. E. Whitacre and R. Lindemann.

Indianapolis, Ind.—Indianapolis Motor Speedway Co., under Indiana laws, with $250,000 capital. Corporators—Carl G. Fisher, president; James A. Allison, secretary; A. C. Newby, vice-president; F. H. Wheeler, second-vice-president.

New York City, N. Y.—Stewart Automobile Co., The, under New York laws, with $50,000 capital; to instruct in the use of automobiles and other vehicles. Corporators—A. V. Lyall, F. S. Ferguson, Jr., and W. H. Stewart, Jr.

New York City—Scientific Research Co., under New York laws, with $100,000 capital; to manufacture automobiles, motor boats, manufacturing machinery, etc. Corporators—A. Elliott Ranney, Arthur M. Day, Andrew J. Robinson, all of No. 1851 Broadway, New York.

Richmond, N. Y.—North Shore Garage, under New York laws, with $1,500 capital; to manufacture, repair and lease cars, carriages, wagons and boats. Corporators—Philip J. Freund, Tompkinsville, N. Y.; Henry M. Schloss, West New Brighton, N. Y.; Henry Decker, Broadway and 23d street, New York City, N. Y.

New York City, N. Y.—Marathon Automobile & Garage Co., under New York laws, with $1,000 capital; garage and storage business. Corporators—Robert G. Beville, 133 West Sixty-ninth street; Walter C. Wyckoff, 71 East Eighty-seventh street; Philip M. S. Chedbrum, 317 West 134th street; Hugh H. Harmer, 1 Madison avenue, New York City, N Y.

New Haven, Conn.—Consolidated Rubber Co., of New Haven, under Connecticut laws, with authorized capital of $250,000, to commence business with $5,000; deal in rubber and rubber products, or the stocks or property of similar companies. Corporators—W. B. McCarthy, Josephine L. McCarthy, Milford, Conn.; Margaret M. Hogan, New Haven, Conn.

Trade Carnival Opens on April 5.

New York City automobile dealers plan to repeat the spring trade "carnival" which last year served to stir up public interest in their offerings. The week of April 5 has been selected as the time for the "doings," and in addition to having "Automobile row" gayly decorated, the large automobile parade will again be made a feature. The arrangements are in the hands of the committee that was re-elected at the close of last year's event and of which General John T. Cutting is the head.

Reeves and Lazarnick After Tarpon.

Alfred Reeves, general manager of the American Motor Car Manufacturers Association, and Nathan Lazarnick, trade photographer, leave for Florida today, 18th inst., for three weeks of tarpon fishing and recuperation from showtime worries. They will go to Long Key, about 90 miles south of Miami, where D. J. Post will join them.

Hartford to Have More Cabs.

Taximeter cab business in Hartford, Conn,. has been so good with the single machine installed by the R. D. & C. O. Britton Co. that four more machines have been ordered. They will be put into service immediately and further additions to the equipment are probable.

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ANOTHER PATENT WAR IN SIGHT

Daimler Interests Aim to Draw Tribute from British Makers—Claims Based on Great Group of Patents.

After a period of quiescence on the subject, the Daimler interests in England have again commenced agitation on the subject of enforcing their alleged rights as holders of controlling patents on a number of different devices widely employed in motor car construction. Some little time ago the principle of the gate change for selectively operated transmission systems was claimed to be covered by patents issued to the Daimler Co., but little or nothing was done in the way of obtaining final judgment in the matter. Last December, however, the matter was taken up again and a number of firms notified that the holding company was prepared to issue licenses on this or any other of a large number of patents held to be of equal validity. The Society of Motor Manufacturers and Traders has been called into the case, and it seems likely that a more or less vigorous patent war will be waging within a short time.

The main issue is in the matter of the gate change patent, though other patents covering the original Daimler and Mercedes constructions are in question to the number of 37 in all, many of them applying only to the English Daimler car. All of these are British patents, owned by the Daimler-Mercedes Motor Co., Ltd. Some idea of the breadth and scope of the group and of the audacity of the attempt to levy tribute upon them from infringing manufacturers, may be obtained from a brief review of their specifications as published in abridged form by the Autocar. The numbers and subjects of the patents are given in each case as follows:

No. 10,257 of 1898—This is the first "honeycomb" radiator patent. In this case the cooler is made of round tubes, after the manner of a fire tube boiler.

No. 7,270 of 1899—Splayed driving wheels obtained by the use of a countershaft bevel-driven from the driving shaft. The splaying is obtained by using two sets of bevel driving gears, one for each half of the countershaft, and mounting the differential gear upon the driving shaft.

No. 7,271 of 1899—A water-cooled brake, in which the water tap is turned on when the brake is applied, and turned off when the brake is withdrawn.

No. 9,805 of 1899—This is the original gate change patent. The invention consists in the use of two sliding gear wheel sleeves, each having its own operating rod, the two rods being brought side by side, and adapted to be connected up to a single speed lever working backwards and forwards in two slots connected together by a "gate."

No. 21,652 of 1900—Locking mechanism for gate change gear sleeves. The selecting quadrant carried by the change speed lever actuates a locking bolt having one slot in it for the passage of only one selecting rod at a time.

No. 3,023 of 1901—An expanding brake having a pair of shoes anchored to the frame by a link, and separated by a toggle mechanism actuated by a crank.

No. 3,235 of 1901—A honeycomb radiator is built up of a number of rectangular tubes separated by wires, which cause spaces to be left between the tubes for the water circulation.

No. 6,976 of 1902—A cooling system in which the bonnet is made without louvres and enclosed underneath, the fly wheel being formed with fan vanes, so that the air is drawn through the radiator and discharged underneath the car.

No. 28,259 of 1902—This relates to the tubes of honeycomb radiators which are constructed with enlarged ends so that the ends fit together, leaving intermediate water spaces.

No. 3,571 of 1904—A combined steam and petrol engine, in which the exhaust gases heat the jacket water, which in course of time generates steam used in a steam engine cylinder.

No. 3,572 of 1904—A cooling system which is completely closed, the water being arranged to boil in the jacket and be condensed in the radiator, the return from the radiator to the jacket being effected by a pump.

No. 3,573 of 1904—The same construction is employed as is used in the previous patent, No. 3,572 of 1904. The invention consists in using a liquid having a lower boiling point than water, such as alcohol.

No. 4,956 of 1904—A compound engine in which the high pressure cylinders are provided with a combined inlet and exhaust valve, the exhaust passages being extremely short, so that the heat lost in passing through them into the low pressure cylinder is reduced to a minimum.

No. 23,990 of 1904—To facilitate starting the engine, the engagement of the starting handle with the engine shaft forces along the cam shaft to bring about half compression in the usual manner. A large number of different constructions are described and illustrated.

No. 22,947 of 1905—A pneumatic transmission system having the air compressor arranged between the cylinders, the air passing into a heater kept hot by the exhaust gases, and thence supplied to two driving motors. The feature of the invention consists in coupling the inlet and exhaust valves of the compressor together in a certain manner.

No. 6,685 of 1906—An automatic carburetter. Over the jet nozzle is arranged a pendant cam device. This cam device turns about its pivot under the influence of the engine suction, affording a larger or smaller passage of air past the jet according as the engine speed increases or decreases.

No. 7,337 of 1906—A reversing gear of the bevel type for boats.

No. 25,051 of 1906—To reduce the length of the engine, the governor and its casing is placed between the cylinders. It otherwise operates in the usual manner.

No. 25,067 of 1906—Front driving wheels, the wheels being driven through bevel gearing with an intermediate shaft on the steering center.

No. 25,076 of 1906—A system for enabling the driving wheels to be splayed when internal gearing is used. The pinion and internal gear are provided with helical teeth.

No. 25,081 of 1906—For starting engines, compressed air is kept in a tank and passed through a carburetting device into the engine. A dynamo, rotated by hand, supplies current through a contact breaker to the cylinders.

No. 25,103 of 1906—This relates to the mounting of the spring platform and the radius rod so that the spring platform takes a suitable bearing on the axle.

No. 1,696 of 1907—This carburetter is formed with a movable sleeve, by which the amount of air passing the jet can be cut down, and that passing round the jet can be simultaneously increased, or vice versa.

No. 1,696A of 1907—This refers to a carburetter having a vertical moving sleeve operated by rack and pinion mechanism, the sleeve being formed as a choke tube, and having air passages in it.

No. 2,360 of 1907—A flexible coupling between the engine and the gear box taking the form of an intermediate shaft, with specially shaped ends allowing universal movement.

No. 3,514 of 1907—Automatic device for advancing and retarding the ignition according to variation of engine speed. A governor slides along an angularly slotted arm, which is engaged by a pin projecting from a shaft. This shaft is rotated so as to advance or retard the ignition as the governor sleeve moves along.

No. 5,104 of 1907—Transmission gearing for cars, in which all four wheels are driven. The power is taken from the gear box by means of a lower shaft, which projects forwards under the fly wheel and engine to the front axle, and backwards to the back axle.

No. 6,202 of 1907—The differential gear is mounted upon the end of the propeller shaft, which is universally jointed to the main propeller shaft, the tail end being at an angle to the axis of the car. Each half of the driving axle has its own bevel transmission, and thus dished driving wheels can be used.

No. 6,346 of 1907—An expanding brake in which one end is pivoted to the fulcrum of the operating lever, the other end being connected to the operating lever by an adjustable spindle.

No. 7,028 of 1907—This is a shock absorber comprising a pair of frictional surfaces carrying face cams, which in their normal position are separated. When big relative movement takes place, the cam surfaces fit between the surfaces owing to the spring.

No. 10,263 of 1907—To reduce the overall length of crank shafts without impairing their strength, the webs are made of eccentric discs.

No. 11,407 of 1907—A duplicated clutch in which the surfaces are split conical rings, which spring outwards and engage under their own pressure before that of the main clutch spring comes into effect.

No. 11,407A of 1907—This clutch comprises a spring-controlled wedge-like ring which engages a cone on the driving member and a split ring interposed between the wedge and a drum on the driving member, respectively.

No. 14,850 of 1907—A differential gear is constructed like an epicyclic gear with an internally toothed ring, two sets of planet pinions being used, these being carried by the driving member, one of each set engaging the internal ring and the other the sun pinion.

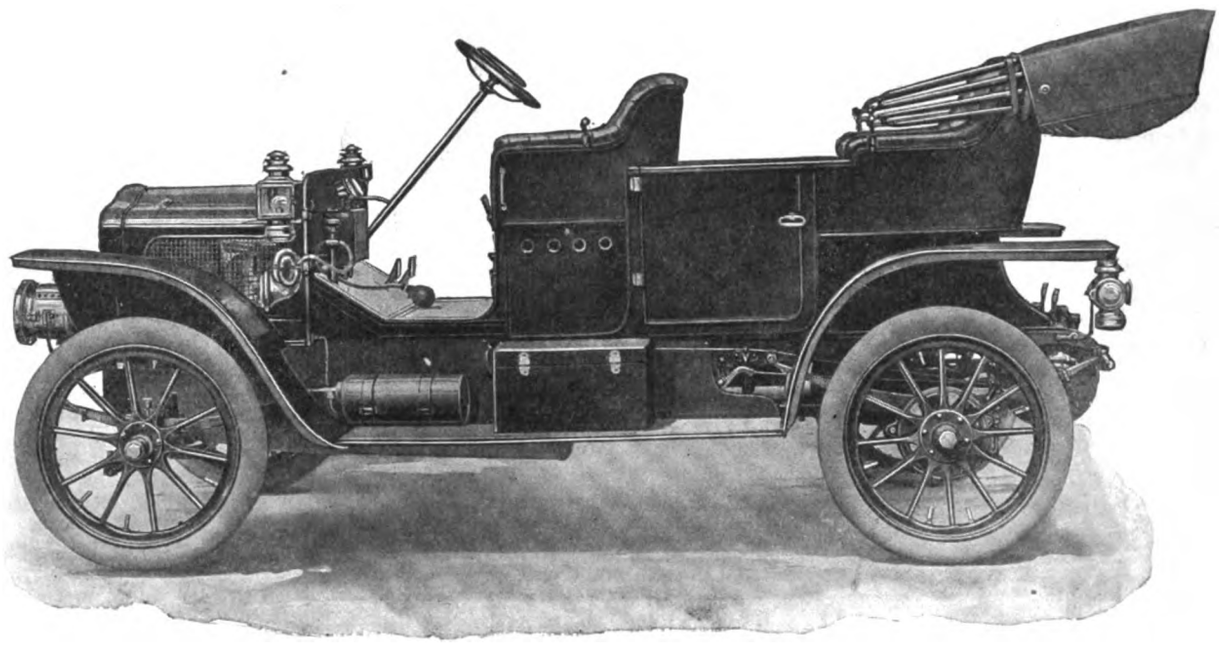
No. 14,851 of 1907—A brake for heavy vehicle wheels when internal gearing is used. The rim is extended and formed with a V groove engaged by V slipper blocks.

No. 19,269 of 1907—This invention consists in water cooling the crank chamber and gear box, so as to keep the oil at a low temperature. The parts are water jacketed and in the ordinary circulation.

No. 20,298 of 1907—A forced feed lubricating system, comprising a number of pumps, a common distributing valve, and a casing with ports in it, the valve being composed of two rotatable parts connected together by a spring.

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The Government of the Sport.

The American Automobile Association has found it necessary to announce that it still issues sanctions and governs racing, despite the fact that it has "nothing more to do with racing on horse tracks."

But as most races are run on such tracks and since they no longer come within the scope of the A. A. A., if the wise Mr. Hower will kindly submit a diagram showing just how the A. A. A. governs the whole sport while remaining blind to a large part of it, it may become possible to discover whether the organization is standing on its head or on its heels.

If the wise gentleman will make public also the long list of the clubs and other promoters that have conducted events of whatever sort without A. A. A. sanction and will name, say, even a dozen men who have been disciplined for competing in such unsanctioned contests, the extent and true character of its government will be made clearer. For its sins of omission have been many, indeed.

The A. A. A.'s control of sport always has been more amusing than consistent, and since the organization decided to have nothing more to do with track racing its government has become almost a real farce. For, as anyone can do anything on the track without either sanction or supervision, and without fear of punishment and yet be free to compete in sanctioned contests, the farce cannot well be carried to much greater lengths. If the A. A. A. believes that track racing is dangerous and a detriment to the whole sport, its plain duty is not to close its eyes to it nor to shirk responsibility, but to crush it by forbidding it and by punishing all who may engage in it; it cannot be improved or made safer by being permitted to run wild, so to speak.

What the A. A. A. long has needed in its government of sport is a man who does not fear to do his whole duty by enforcing the rules—and all of them—exactly as they are laid down and without resort to the apparently fixed policy of first stopping to consider whether the enforcement will offend or antagonize any club or any man of influence in the trade or outside of it. In no other way is it possible to give a square deal to all and to merit unstinted respect and support.

The A. A. A. is the logical and proper body to control the whole sport of automobiling, and had it controlled it manfashion, in strict accordance with its rules, there would be neither need nor room for a Manufacturers' Contest Association or anything else of the sort. The existence of that association is a reflection on the A. A. A. manner of government.

The Function of the Catalog.

In connection with the implied criticism of current methods of cataloging motor cars, which is given in another column, some little stress is laid upon the fact that almost without exception manufacturers are in the habit of failing to discriminate between current models and those which have preceded them, except where entirely new machines are built, or where the most striking differences in practice exist. All of which leads to the observation that it has been the policy of a large number of manufacturers to follow out in the advertising the principle that their product is a standard one, practically in all respects, and that whatever alterations are made in it from time to time are of a purely minor nature—hardly worthy of more than passing comment, in fact. Further, it must be granted that the wisdom of such a policy has been proved in many instances.

Still it is questionable whether the same ends might not have been served had it been the custom to indicate in every case just what changes had been made from year to year or season to season so that those who were thoroughly familiar with the car—particularly with its shortcomings—might be made to appreciate the advantages of the new models as compared with the old.

In the last analysis, it may be considered a question of whether the catalog is intended to appeal most strongly to the prospective purchaser who is of the class assumed to be entirely ignorant of the general construction of any particular car, or to the enormous and preponderating class of those who are pretty well posted on the construction of all the better known cars on the market, who are able to grasp the more important structural details of the vehicle from specifications and detailed illustrations, and who peruse such catalog as they may be able to lay hold of more in an effort to discover how the various machines differ from one another and what of novelty they contain, than with the idea of making a close study of their absolute characteristics.

This they reserve for an actual inspection of the machine, in most instances, it should be observed, while to the catalog must be left the difficult function of re- should be observed, while to the catalog for comparative purposes, and of displaying eye-catching details of one sort or another. Certainly wherever these elements may be subserved by the introduction of the elements of newness or difference from other machines, the impression of the more stable features of the machine is most likely to be impressed upon the mind.

Actual sales due to catalog work alone probably are very rare. Indeed all trade literature, in this, as in other lines of merchandising, is to be regarded in the aspect of a selling help rather than as a direct medium of sales business. On this account the catalog must be made as able and instructive an assistant to the selling force as possible, and further, it must be molded along lines which shall make it most acceptible to the reader and most easily and quickly digested. All this being so, it is

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difficult to find reasonable objection to the practice of recording in cojent and definite form not simply the individual characteristics of the machine as contrasted with others of its own or other classes, but, also its points of difference from other machines which have been its immediate predecessors.

Developing Formulas of Design.

It has taken a pretty long time—relatively speaking—for the motor vehicle designer to learn even vaguely the relationships existing between the various conditions which are laid down preliminary to the design of a car, and further, to learn to develop them in mutual harmony. Ultimately it may come about that, given one or two variables in the specifications of a machine, the apt and up-to-date draughtsman will be able to define exactly the other specifications of the car, and so to lay down its design without more adoo. Up to this time, however, there has been a vast deal of uncertainty in the average factory engineer's office, while even yet there is more of cut and try in the construction of a new model than is pleasing.

One point, as showing how questions of design are gradually and certainly converging toward an ultimate corelationship which shall be understood by those skilled in the craft, came to notice recently when an engineer whose work reveals thorough comprehension of the conditions involved in automobile service ventured a rather novel opinion in the matter of cooling.

"The cooling problem may be considered practically as a function of the ratio of weight to power," he observed. "That is to say, it is comparatively easy to keep an engine down to a reasonable working temperature if it is well below full load when working under average conditions, while similarly an engine which is constantly laboring, requires a greater proportionate cooling effect in order to keep it from overheating. And this principle holds good practically without regard to the speed of the vehicle."

Indeed, it may be said that the proportion between the output of the motor and the total weight on wheels is of far greater importance than generally has been appreciated up to this time, and that upon close and analytical investigation it may be brought into definite relationship with a number of other considerations which usually have been treated more or less independently. Due perhaps in large measure to the popular desire to have ample power for hill climbing, not at hill climbing speeds, but at ordinary road speeds; and for high speed work, the power of the average touring car has been raised gradually during the past two or three years until in many instances it has come to be beyond all reasonable relation to actual requirement. It has been demonstrated in this connection, however, that machines which are overpowered in this way are far more durable, take it all in all, than those which are figured more closely in the matter of power, and also that they are at once more flexible and silent in action—as naturally would be expected.

As practically every element in the machine is in some way contingent upon either the weight carried or existing in the vehicle itself or upon the power developed or transmitted by its mechanism, the importance of firmly establishing a proper proportion between these two basic factors is plain to see. How from it, other and subordinate elements may be developed according to a scale of purely dependent quantities, thus establishing a system of complete standardization in the dimensional rather than the qualitative sense, may be inferred from further consideration of the above quoted hypothesis, which serves as an apt illustration.

The Motor re-Print is still up to its old tricks. In a single issue of the house organ of a western manufacturer there is reproduced thirteen different items taken from that publication and of the thirteen, ten originally were stolen bodily from the Motor World by the re-Print. Fortunately or unfortunately, however, they were not of sufficient length for that grand larcenist of automobile journalism to employ its usual fraud of attaching to the items the names of mythical engineers or other persons who exist only in its peculiar imagination.

Unless it is what is vulgarly termed a publicity stunt—an opinion held in some quarters—the real friends of the manufacturer who is suing for the return of his fee paid for the entry of a car in the Vanderbilt cup race should take him aside and whisper in his ear a few words of unbiased advice. If it brings a man's sportsmanship into public question or seems to place him in the attitude of a hard loser, even a spectacular or legal "publicity stunt" at whatever price, is of doubtful value and serves doubtful purposes.

COMING EVENTS

February 15-20, St. Louis, Mo.—Automobile Manufacturers and Dealers Association's annual show.

February 15-20, Bangor, Me.—Eastern Maine automobile show, Auditorium.

February 16-18, Denver, Co.—Denver Motor Club's first annual show, Auditorium.

February 17-20, San Jose, Cal.—Automobile show, Auditorium Rink.

February 20, 21, 22, New Orleans, La.—New Orleans Automobile Club's Mardi Gras carnival 3 days race meet.

February 20-27, Newark, N. J.—New Jersey Automobile Trade Association's show.

February 20-27, Hartford, Conn.—Automobile Dealers Association's show.

February 22, Los Angeles, Cal.—Automobile Dealers Association of Southern California's annual hill climb on Altadena hill.

February 22, Omaha, Neb.—Omaha and Council Bluffs dealers' show, Auditorium.

February 22, Cleveland, O.—Cleveland Automobile Dealers Company's show, Central Armory.

February 22-27, Portland, Me.—Automobile show.

February 24-27, Baltimore, Md.—Automobile Club of Maryland's show, Fifth Regiment Armory.

March 1-6, Buffalo, N. Y.—Buffalo Automobile Club's 7th annual show, Convention Hall.

March 1-6, Providence, R. I.—Automobile show.

March 2-6, Rochester, N. Y.—Automobile and Motor Trades Association of Rochester show, Convention Hall.

March 6-13, Boston, Mass.—Boston Automobile Dealers Association (Inc.) seventh annual show, Mechanics Building.

March 8-13, Kansas City, Mo.—Kansas City Automobile Dealers Association's show, Convention Hall.

March 8-13, Portland, Ore.—Portland Automobile Club's show.

March 10-13, Memphis, Tenn.—Automobile show, Auditorium building.

March 13-20, Minneapolis, Minn.—Minneapolis Automobile Show Association's show, National Guard Armory.

March 15-20, Rochester, N. Y.—Rochester Automobile Dealers Association's show, Convention Hall.

March 16, 17, 18, Chattanooga, Tenn.—Three days race meet and hill climb on Lookout mountain.

March 27-April 3, Pittsburg, Pa.—Automobile Dealers Association's show, Duquesne Garden.

April 15-17, Louisville, Ky.—Louisville Automobile Association's show, Coliseum.

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GARDEN SCENE AT DETROIT SHOW

Many Cars Staged Amid Venetian Landscape and Singing Birds—Display of Accessories a Big Feature.

Three hundred little canary birds singing in their gilded cages are the clamorous element of decorative setting for the second annual show of the "DADA," which is holding the boards at the Wayne Casino at Detroit this week. After seven years of experience under various conditions from those of a side attraction at a sportsman's show to the full fledged motor shows of the past five years, the Detroit Automobile Dealers Association, otherwise passing under the cryptic which rhymes with Papa, have learned how such an affair should be managed. Last year for the first time, the experiment of an automobile show under an automobile management was successfully tried out at Riverside Park. Efforts at outdoing all previous records have resulted this year in what is fondly termed by manager E. Le Roy Pelletier, "the picture show of the country."

For the decorative arrangement of the lower floor of the Casino the semblance of a Venetian garden has been chosen. The walls are lined with huge paintings representing various sorts of automobile lore, while the booths are marked off with lattices, each exhibit being distinguished by a stained glass sign. From the latticed ceiling great quantities of smilax are hung, while concealed among the leaves are the 300 little birdies in their cages, ready to be counted. The second floor is laid out according to a scheme of staff work, centering about a massive fountain in the middle of the floor, which introduces an allegorical novelty, so to speak, in the shape of "chauffeur-mermen," four of whom support the font of the piece. A touch of beauty is added to the decorative treatment of the bowl itself by the presence of a row of "racing faces," while various automobile scenes are empanelled about the base of the structure. The total height of the affair is some 30 feet, and the diameter of the bowl is of practically the same measurement. Staff columns serve to mark off the spaces between the booths, while strings of electric lights are festooned about them and to and from the roof.

In the placing of the show, Detroit has taken advantage of the recent closing of the Chicago show, two express train loads of cars having been required to transfer the exhibits which were to do second duty after the shutting down of the Coliseum last Saturday night. A rough count of the cars on view shows them to number somewhere about 200, while the accessory exhibits are of more than usual interest because of the manufacturing strength of the locality. This factor, it should be observed, serves to make this one of the most important, if not the most important of the local shows. Michigan is said to be responsible for no less than 59 per cent. of the automobile output of the world, and though the estimate is liberal, to say the least, there is no question of the importance of the state as a center of automobile manufacture. Detroit's proportion of this output is of great significance as between 40,000 and 50,000 operatives are employed in producing it. On this account quite as much as because of the representative nature of the exhibits, the show is of considerable significance. The doors of the Casino were opened on Monday last, 15th inst., and the show will remain open during the remainder of the present week.

Newark Show Ready for Opening.

Preparations for the opening of Newark's second automobile show in the Essex Troop armory on Saturday evening of this week, 20th inst., are rapidly nearing completion. A glance at the list of exhibitors shows that the exhibition will be a more nearly representative one than the average of its class. Some thirty different makes of car will be on view, including the Acme, Brush, Cadillac, Chalmers-Detroit, Ford, E-M-F. "30," Jackson, Kisselkar, Locomobile, Marmon, Maxwell, Mitchell, National, Oldsmobile, Overland, Pennsylvania, Pierce-Arrow, Peerless, Premier, Rambler, Regal, Reo, Stevens-Duryea, Stoddard-Dayton and White.

About 75 or 80 cars will be on view during the week, in addition to the full line of accessory exhibits. An elaborate program has been arranged for the week, including music every afternoon and evening, and a moving picture exhibition every night. The show will be opened by George E. Reeve, president of the Newark Board of Trade, who will deliver an address from the balcony of the armory building at 8 o'clock Saturday night.

San Jose Show Opens with Pageant.

Following the example of Los Angeles, San Jose, Cal., inaugurated yesterday its automobile show, which is scheduled for February 17-20, inclusive, with a pageant and parade. V. A. Hancock, who is promoting the affair, has arranged for the purchase of a silver trophy to be donated to the owner of the best decorated car. The show itself, which is held in the Auditorium rink, will follow the lead of the more pretentious national exhibitions to the extent of having uniform signs which will form the chief motive of the decoration.

Trenton Abandons Its Proposed Show.

The automobile show which was to have been held in Trenton, N. J., on February 18, 19 and 20, has been abandoned. The military board in control of the local armory wanted too much money and no other building in the city was available for the purpose.

DENVER'S FIRST SHOW A SUCCESS

Representative Display of Automobiles, Motorcycles and Accessories—Some Local Products Exhibited.

A striking monument to western enterprise, the first automobile show held under the auspices of the Denver Automobile Club draws to a close tonight after a three days run in the big Auditorium. The show opened on Tuesday last, 16th inst. For its purposes, the cement floor of the auditorium proper, where the Democratic convention was held last year, was covered with a wood flooring which also is extended over one-half of the orchestra. With ample space for the exhibits so that the overcrowding which characterizes so many of the local shows was eliminated, an original and pleasing decorative scheme, and a good representation of the better known manufacturers, as well as one or two local products, the affair must be counted a remarkable achievement.

As a matter of fact, its success may be regarded as all the more noteworthy because the Denver Automobile Club has been in existence less than a year. It was formed only last July, since which time its membership has risen to its present strength of nearly 400. The show was its crowning achievement for the winter season and indeed, the biggest undertaking it has yet embraced. It was brought to a successful issue under the guidance of Ralph W. Smith, C. P. Allen, Edward F. Dean, George E. Turner and W. H. Sharpley, who constituted the show committee, and was conducted under the active management of Robert W. Spangler.

The total roster of exhibitors numbers something over half a hundred names, fully two-score of them being those of automobile manufacturers or their agents. A feature which attracted much attention was the motorcycle section, wherein no less than seven different makes of the two-wheeled machines were shown, while the accessory section provided its usual quota of instruction and diversion. The full list of exhibitors together with their wares, is as follows:

Automobiles—Barnett, W. W., Stoddard-Dayton; Bilz, Charles, Franklin; Botterill, Tom, Pierce-Arrow; Brinker-Vreeland Automobile Co., Matheson, Moon and Rauch & Lang; Central Motor Co., Midland; Colburn Automobile Co., Colburn; Colorado Automobile Co., Cadillac; Cumbe, E. R., Mitchell and Rambler; Denver Motor Car Co., Overland and Baker; Elkhart Motor Car Co., Sterling; Felker Automobile Co., Stevens-Duryea; Fernald Automobile Co., Maxwell; Ford Motor Co., Ford; Fritchle Auto and Battery Co., Fritchle; Griebel Motor Car Co., Speedwell; Hannan, George, Jackson; Havens Motor Car Co., Dorris

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and Frayer-Miller; McDuffee, J. H., Chalmers-Detroit; MacFarland Automobile Co., Packard and Buick; Mathewson, E. Linn, Thomas, Oldsmobile and Columbus; Narmore, Jesse C., Reo; Newson, C. S. White; Studebaker Automobile Co., Studebaker; Tobin Motor Car Co., Apperson and Peerless; Wilson, A. T., Kisselkar and Oakland.

Motorcycle Section — Botterill, Tom, Pierce and Harley-Davidson; Boot Motorcycle Co., Reading Standard; Hathaway Motor Co., Indian; Mead, P. A., Excelsior; Williams, Fred H., Thor and N. S. U.

Accessories—Boss Rubber Co., tires; George J. Kindel, automobile cleaner; S. E. Gillard, agent, tires; Carstarphen Electric Co., electrical supplies; Scott Tool & Supply Co., automobile supplies; Denver Auto Goods Co., automobile supplies; Metal Polish Shop, automobile polishes; Consolidated Supply Co., automobile supplies; Auto General Supply Co., automobile supplies; General Electric Co., mercury arc rectifiers; Westinghouse Electric & Mfg. Co., mercury arc rectifiers; Continental Oil Co., automobile oils; Atlantic Refining Co., automobile oils; Great Western Oil Co., automobile oils; G. D. Wands & Co., automobile safety locks; Pickens Bros., automobile clothing; Standard Carriage Works, automobile tops; Brooke Airless Tire Co., tires; National Paint & Mfg. Co., automobile paint.

Pipestem Makes Emergency Repair.

Motorists who smoke a pipe may find a useful suggestion in the experience of a resourceful driver. While bowling along with everything apparently working properly, the engine—of the single cylinder type—suddenly developed a skip, accompanied by popping in the carburetter. The car was brought to a halt and investigation disclosed a choked carburetter jet. After disconnecting the gas making apparatus, in removing the choked jet for cleaning, it broke in two in the jet chamber. This calamity was further enhanced by the fact that the carburetter was of an antiquated type, and no spare jet was available. While casting about for a way out of the difficulty, the idea of using the round vulcanic pipestem presented itself. Fortunately it proved to be of a suitable size, with the additional good feature that it readily lent itself to the requirements of a jet. While not performing the functions of its predecessor quite so satisfactorily, with a few changes in the air adjustment the engine was easily started and the car brought home.

Keeping Control of the Pedals.

With a car traversing rough roads, the position of the driver should be such as to prevent the feet being jolted off the foot pedals. The clutch should always be withdrawn in passing over a rough spot and the car allowed to coast, and if the feet are jarred off the pedals permitting the clutch to slam in, a great strain is put on the gear box mechanism.

ST. LOUIS TAKES A BIG JUMP

Manufacturers' and Dealers' Show Doubles Last Year's Figures—Local Makers Stage Several New Cars.

Among other features of greater or less significance at the St. Louis automobile show, which is being held this week from Monday until Saturday, is the presence as an exhibitor of automobiles, of an electric light and power company. The fact in itself may be presumptive evidence of the awakening of the electric current producers in certain quarters to the great possibilities of revenue derivable from the charging and maintenance of electric vehicles for which they are so aptly fitted. As a show, this, the third effort of the St. Louis Automobile Manufacturers and Dealers Association, is crowned with marked success. The transfer from the Jai Alai building to the Coliseum, made this year for the first time, has resulted in the provision of ample accommodation for the half-hundred exhibitors. Indeed, so active has the association's show committee under the direction of Manager Lloyd H. Rickart been, that practically twice as many exhibitors are in the show as took space in the last exhibition of its kind, while the number of different makes of car shown is about the same as the total number of exhibitors who were in evidence in 1908.

Of peculiar local interest are the exhibits of the St. Louis manufacturers—the St. Louis Car Co., Moon Motor Car Co., Dorris, Success, Victor, Darby and Eureka companies. Several of these have not shown their products before this year, as is true of the American Mors, Frayer-Miller, Darby, Victor, Success and Stanley. One or two of them, indeed, are brand new cars, notably the Darby, which also is numbered among the products.

Moving pictures of various automobile events of the past year figure in the show, as is customary at all such affairs, but in rather a novel way in this particular instance. Lacking a suitable auditorium, separate from the main place of exhibition, in which to show the pictures, it was decided to display them in the hall itself. Accordingly the lights are extinguished for a few minutes twice during each evening, while the pictures are projected from the east side of the hall to a screen on the west side. In addition to the efforts of the inevitable band, music is furnished by a mammoth Gabriel horn-organ, such as was used at the Palace show in New York.

The decorations are in red and black, the colors of the dealers' association. For the most part these colors predominate, but use also is made of deep blue and white to relieve any possible monotony resulting from over-indulgence in either of the other hues. As is the case at Detroit's show, which is running simultaneously with this, many of the exhibitors made use of the Chicago show in drawing material for their displays, and in consequence a twenty-car special train left the Windy City as soon after that show closed as it could be loaded, and was rushed through on fast freight schedule arriving just in season for the cars to be unloaded and rolled into place in the Coliseum before the opening on Monday night.

Opening night, despite the hindrances of a storm in which snow and wind combined to discourage the would-be visitors, proved in no sense an exception to the rule of automobile-show first nights. The crowd was there in response to the irresistable lure of the usual handout of "paper" and though as always is the case, no overwhelming business results were reported as coming from the opening session, the important object of advertising the show in all its magnificance was amply accomplished.

The preliminary list of exhibitors is as follows:

Automobiles: Bagnell Automobile Co., Cadillac; Brown, C. F. & J. R., Peerless; Buick Motor Co., Buick; Colonial Automobile Co., Studebaker and E-M-F.; Darby Motor Car Co., Darby; Deere Plow Co., John, Jackson; Delmar Motor Car Co., Regal; Dorris Motor Car Co., Dorris; Eureka Buggy Co., Eureka; Ford Motor Co., Ford; Gardner Motor Car Co., Franklin; Halsey Automobile Co., Stevens-Duryea and Packard; Jeffery & Co., T. B., Rambler; Kerdell Bros., Lewis, W. C., Reo, Wood's electric; Maxwell-Briscoe Motor Vehicle Co., Maxwell; Mississippi Valley Automobile Co., Stearns and Detroit electric; Moon Motor Car Co., Moon; Olds Motor Works, Oldsmobile; Park Automobile Co., Overland; South Side Automobile Co., Matheson, Corbin and Stanley steamer; St. Louis Car Co., American Mors; Swingley Motor Car Co., Stoddard-Dayton; Success Auto Buggy Mfg. Co., Success; Union Electric Light & Power Co., R. & L. and Studebaker electrics; Van Automobile Co., Marmon; Victor Automobile Mfg. Co., Victor; Western Automobile Co., Pierce Arrow.

Accessories: Barcus, J. Curtis; Behen-Faught Motor Car Equipment Co., Doyle-Curran Motor Car Co.; Chaudet, Felix R.; Electric Auto and Battery Co.; Henderson, Willis Welding and Cutting Co.; Horn Trunk Co., T. L.; Hurck Motor & Cycle Co.; Phillips Automobile Co.; Phoenix Auto Supply Co.; Union Electric Car Co.; Tam Oil Refining Co.; Travelers' Insurance Co.; Vehicle Top & Supply Co.; Weber Implement Co.; West St. Louis Machine and Tool Co.

American Cars at Edinburgh Show.

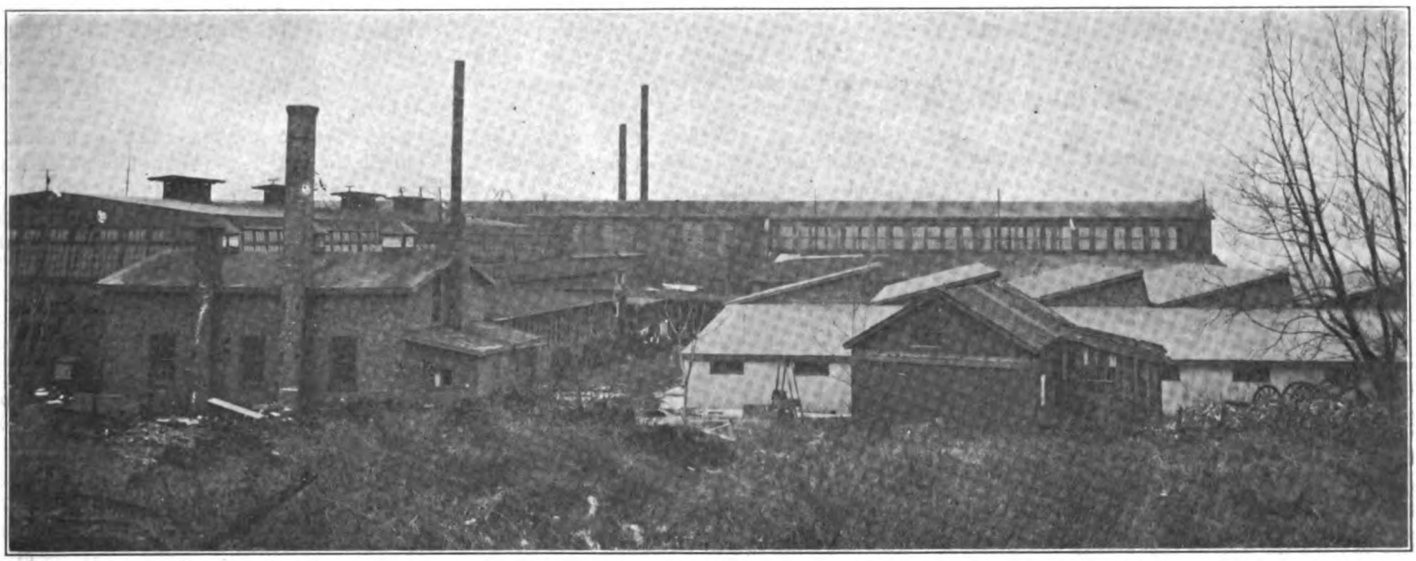
At the recent Edinburgh (Scotland) Motor show, America was represented by the White, Stanley and Ford cars. One of the novelties of the exhibition was a car which included three ignition systems in its equipment.

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MAXWELL-BRISCOE PLANT EXTENDS

Ingersoll-Rand-Drill Works Added to the Tarrytown Establishment—Company Pushing Work of Alteration.

Rapid expansion of the business of producing Maxwell automobiles of various types has necessitated a further addition to the factory space already occupied, as a result of which the fourth plant in the chain established by the Maxwell-Briscoe Motor Co., has been assumed at Tarrytown, N. Y., where are the headquarters of the company and the principal shops. This was evidenced by the announcement last week that a lease had been taken of the factory formerly occupied by the Ingersoll-Rand-Drill Works. The extent and general facilities offered by the new works may be judged from the accompanying picture.



MAXWELL-BRISCOE MOTOR CO.'S NEW FACTORY AT TARRYTOWN, N. Y.

When asked about the significance of the acquisition, F. D. Dorman, secretary of the company, said: "Yes, it is true that we have leased the Rand-Drill Works to take care of our overflow. Our business has grown so fast that we have utilized nearly all of our available space, and it was impossible to put up buildings on the premises fast enough. We will take possession immediately."

This extension of the Tarrytown property is of considerable importance to Tarrytown itself, where are stationed at present about 1,000 Maxwell employes with an average weekly pay roll of $12,000. Work of adapting the new quarters to immediate use has been commenced already, and will be rushed through as rapidly as possible.

It is announced that for 1909 the combined output of the three factories now in service will amount to about 12,000 cars. For 1910, however, with the increased facilities available, a considerable increase is in contemplation. Indeed, it is said that present plans specify no less than 20,000 machines as the output.

New High Mark in Tire Mileage.

Tall records for tire mileage have developed during the past two years, but J. L. Martin, of Fowler, Ind., appears to have hit the high mark for a single set of pneumatic tires. He claims that with the one set of Diamond tires he has covered 40,872 miles, with no trouble beyond two punctures, according to the record kept by a reliable speedometer. By reason of the fact that this was the largest figure ever reported to the Diamond Rubber Co., of Akron, O., for a single set of its product, the company looked into the matter and asserts that analysis appears to verify Martin's claim. The car used was of the roadster type and Martin, being in the windmill business, drove almost constantly in his daily work, in addition to which he did considerable evening and Sunday driving for pleasure. His own estimate, aside from the speedometer figures, places his average daily running at 75 to 100 miles, and the mileage total which he claims for his tires was all made within a period of 18 months.

Tire Information in a Booklet.

Motor truck tires, together with the methods of applying them, form the subject for instructive illustrations and text in a special booklet just issued by the Diamond Rubber Co., of Akron, O. In addition to considerable general information as to tire practice in the commercial field, tables and diagrams are supplied which give valuable information as to tire, flange, band and felloe sizes. The manner of applying or removing Diamond wire mesh base and Diamond side wire tires is fully shown in halftone pictures and line drawings, while the various types of Diamond motor truck tires are also illustrated.

DEVELOPING EXPERT REPAIR MEN

School of Instruction in Operation at the Franklin Works in Syracuse—First Squad of Pupils Enlisted.

A school for the instruction of automobile repair men is one of the most recent undertakings entered into by the H. H. Franklin Mfg. Co., at its Syracuse (N. Y.) plant. The object is to render it possible at any time for the company to furnish any of its 150 dealers throughout the country with trained and competent help. In this way it is hoped to relieve the dealers of what has become a very troublesome problem within the past year or two.

The work is being inaugurated under the direction of I. O. Hoffman, formerly an instructor in the College of Applied Science at Syracuse University, and the school will be housed in a building now approaching completion. According to the present plan of operation the recitation hours are to be at night, and the course can be completed in from 28 to 35 weeks. Already the first squad of pupils is at work in the engine assembly room and other parts of the factory. They are employes of the factory and are to continue as such during the period of special instruction. Admission to the classes is obtained through special familiarity with machine shop work or with the gasolene motor.

Among the special equipment of the school will be several Franklin engines showing the changes in design in the successive years on from 1903; and parts of cars, used in the construction of the various models during the same period. The development of the carburetter, the rear axle and other parts will be demonstrated by the display of the parts themselves for the several years.

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HOW TO COMPILE THE CATALOG

Some of the Most Common Faults Pointed Out by an Expert—His Suggestions for an Ideal Compilation.

It is a tribute to the bright and energetic spirit which pervades the automobile industry that the subject of cataloging their products has been given a huge expenditure of attention and money by the manufacturers engaged in the field, practically without exception. At the same time it is a fact beyond question that much of this outlay has been ill-advised. In some instances the investment in letterpress and cut work has been out of all proportion to the probable returns obtainable and the volume of business done, while in others its distribution has been made without proper regard to proportion, or the proper balance of the necessary elements which must enter into trade literature of the business-getting variety. Wholesale advice on the compilation of the effective motor car catalog, offered by Selling Magazine, indicates a number of points in which many of the automobile manufacturers might improve the efficiency of their catalog systems.

"The most common fault in motor car catalogs is the lack of a summary of the constructional changes incorporated in the new models," says the print in question. In fact, the writer avers that after an inspection of practically every piece of advertising matter issued by the motor car manufacturer during the past eight years, but one, and that of very recent issue, has come up to the mark in this important respect.

"It should be borne in mind in compiling a motor car catalog that, generally speaking, two classes of readers are being addressed," he continues, "one familiar with the specifications and constructive features of previous models of the car described; the other class ignorant of the same. Hence, either a special catalog must be prepared for each class or one catalog arranged to meet the needs of both classes. The single catalog idea is best under usual circumstances. For the information of the partly informed reader, for example, a user of a previous model of the car, the changes in the new model should be given a prominent position in the catalog so that he can readily obtain the data he desires without wading through a lot of descriptive matter with which he is already familiar. If the new features are brought prominently to his attention he is much more liable to be impressed by the merits of the changes, and will be more easily convinced of the advisability of his purchasing the new model. On the other hand, for the guidance of those who know nothing of the car, a small index, or references of some sort, should be placed near or immediately following the summary of changes, directing the reader to the pages on which can be found fuller details and explanations of the value of the changes, and detail data regarding the various features of the car.

"Preceding the summary of changes, an introductory outlining the manufacturer's claims to the reader's consideration, would add to the strength of the catalog, especially if the manufacturer has an exceptional reputation, many years experience in the motor car or some other mechanical field. . . . . or any strong argument in his favor. Naturally, it is impossible to give very definite advice regarding this introductory, as each case must be handled on its own merits, but a few general observations will not be amiss. . . . . The car's performances in contests might also be mentioned in a general way, but to avoid undue length, full details regarding victories and trophies won in contests should be reserved for special mention in another part of the book.

"Following the introductory and the summary of changes should come explanations of the changes, and then details regarding the exclusive features of this make of car; that is, particulars regarding such constructive features as make it different from other cars—the reasons for its existence, as it were.

"The arrangement of the illustrations is a very weak point of many motor car catalogs. Apparently no other method has been followed than that of scattering the illustrations to break up the reading matter. . . . . Instead of scattering the illustrations of the various models through the catalog, with their specifications scattered in other parts, the cuts and specifications should be paired up so that anyone can refer to the specifications of any model as he examines the illustration, without fumbling pages back and forth to various parts of the catalog. The most stupid blunder in this mixing of specifications and cuts is the habit of placing an illustration of, say Model A with the specifications of Model B facing, and a cut of Model B backing up the page containing its specifications. . . . . .

"Where the size of the catalog permits the use of a full page for the cut, and another page for the specifications, the two pages should face each other, and in any case the cut should be placed with the base parallel with the lines of the text, so that either cut or text may be referred to without turning the book. The less mental fatigue and inconvenience caused by getting at the contents of a catalog, the more easily will those contents be absorbed and retained by the reader. . . . .

"So much of the text matter; to revert to the illustrations, the most effective for the front part of the book are attractive landscapes, with the car in favorable settings. Such illustrations placed either on pages opposite the reading or used on the same pages as the reading to break it up, will brighten up the pages and help to create a desire to own a motor car, or intensify that desire, if it already exists. These illustrations will help hold the reader's attention while he reads the introductory and summary of changes. Throughout the description of exclusive features, line drawings and phantom half-tones will serve to impress on the reader's mind the various points in which the car differs from others, and show him why these features have been adopted. In the description of general features, cuts of the important parts, such as the motor, change gear, axles, etc., can be used to advantage, and by all means a plan view of the complete chassis should be used, as it shows the arrangement of the various parts and enables the reader to follow the description much more intelligently.

"Nothing has been said of decorative illustrations, cover design and other artistic features, the object of this article being to call attention to certain practical features which should be common to all motor car catalogs.

"The ideal catalog herein suggested, is planned first to get the reader's attention by suggesting by illustration the pleasures of motoring while he peruses the first few pages, and learns of the stability and standing of the manufacturer; then holding his interest by vivid illustrations and descriptions of the distinctive features of the car —its talking points—until he has a desire to read the general description and learn of the various models offered, and of the performance of the car, all of which may create a desire to possess the car advertised."

Proper Treatment of the Oil Lamp.

It is the practice generally among motorists when extinguishng their oil lamps to turn down the wick to save wear and tear on the door hinges which frequent usage occasions. Instead of turning the wick up again, when the flame has gone out, it is usually put off until the lamp is again required, by which time it is forgotten which way to turn the thumb wheel to bring the wick up. The operation in many cases results in the wheel being turned the wrong way, and the wick dropping down into the oil reservoir, whence it has to be fished out, a proceeding which is not likely to add to the motorist's amiability. While the best way to extinguish the light is to open the door of the lamp and blow it out, thereby leaving the wick in a proper position for relighting, those motorists who insist on adhering to the practice of turning down the wick to extinguish their lamps should turn it up again before leaving it, so that it will be in a proper position for future use.

Precaution that Will Obviate Trouble.

When valves are to be ground it will be found worth while to tie a piece of strong cord to a piece of waste and push the latter into the cylinder. In the grinding operation if any of the abrasive should drop into the passages, the waste will prevent its finding its way to the interior of the cylinder, and it can be removed when the waste is withdrawn by means of the string.

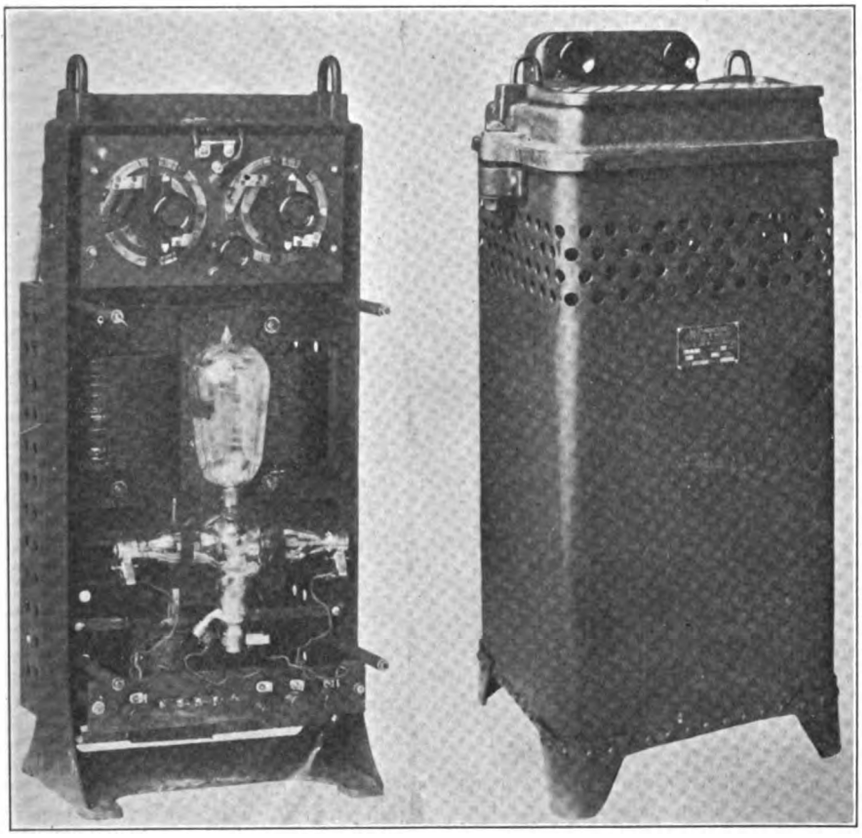
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FOR RECTIFICATION OF CURRENT

Simplicity the Feature of the Westinghouse Charging Sets—Almost Automatic Character of Their Operation.

Perhaps no single factor can be said to have contributed more forcibly to the practicability of the electric vehicle for the private owner than the development of the mercury arc rectifier whereby the alterations of the current commonly sold for lighting purposes can be eliminated and a direct current developed. As the direct current alone is useful for charging purposes, without the use either of some apparatus corresponding in action to the rectifier or a mechanical motor-generator, it would be necessary in many instances either to recharge batteries at special stations, or else to install separate wiring systems for this purpose alone. With the introduction of the rectifier the requirement of costly installations of either variety was done away with and the use of the alternating current brought directly within the range of the small consumer as well as the non-technical user of the electric automobile.

In this connection attention is directed to the battery charging sets produced by the Westinghouse Machine Co., Pittsburg, Pa., which are especially designed for use in public as well as private garages and for which an extremely high efficiency is claimed at both full and light loads; as well as simplicity in operation, compactness and long life. Two styles are produced, one for charging batteries of any sort, and designated as type "A," and the other, which is known as type "E," which is a small, self-contained rectifier set intended to be used in charging ignition batteries. It is similar in principle and action to the more pretentious and higher capacity types of rectifier produced by the same company, but is mounted on a small panel board which may be bolted to the wall where it occupies a minimum of space.



WESTINGHOUSE TYPE "A" MERCURY RECTIFIER, OPEN AND ENCASED

The operation of these instruments is extremely simple. It is only necessary to set the regulating dial pointers according to the table on the instruction card which accompanies the outfit. The rectifier then is cut into the vehicle battery and the primary current supply switch closed. The apparatus is immediately started, and proceeds to supply direct current. No readjustment is necessary during the charging. If at any time the current is interrupted for any reason, the rectifier automatically stops itself. This permits the individual owner to run the vehicle into his private garage, connect it to the charging outfit and retire, knowing that in the morning he will find his batteries fully charged and ready for service. In other words, an outfit of the sort enables him to give the vehicle practically all the attention it requires with practically no expenditure of time or labor.

SOME COLD WEATHER PRECAUTIONS

Danger of Starting the Engine When the Water Pipes are Frozen—How to Prevent or Deal with Trouble.

Knowledge of the damage which may result if an attempt is made to start the engine while the water pump is frozen would seem to be a sufficient incentive to insure precautions being taken to prevent such an occurrence. While it may appear a matter easy of accomplishment to drain all the water from the cooling system of a car, experience has taught otherwise. When the car is stored in an unheated building with the attendant possibilities of trouble, the careful motorist takes pains to open the drain cock before leaving and assuring himself that all water is permitted to escape from the pipes. While these precautions would seem to be sufficient, an invisible agency is making for trouble. After the main body of water has been drained off, taking with it a large proportion of heat, the pipes cool rapidly. There still remains, however, a film of water on the inner walls, which slowly finds its way to the lowest part of the system, which frequently happens to be the pump. During the interval the pump probably has reached a freezing temperature, so that instead of finding its way out of the system, the water congeals.

The water pipes being closer to the cylinders naturally retain their warmth for a longer period and the water in them continues to trickle to the pump until the pipes also become clogged with ice at the pump inlet. When the system is filled with fresh water, and the engine is turned over, the pump goes to pieces. Even if hot water be used to hasten thawing of the ice the possibility of trouble is yet present, for it takes quite some time to melt the ice.

If the pump tap be opened, and water allowed to run out from it, before starting the engine, it will be a reasonable assurance that the system is open. Great care should be exercised to see that the pump is free, before turning over the engine, inasmuch as the latter turns stiff when cold, and owing to the great leverage secured at the starting crank the pump easily may be put out of commission, without the operator being made aware of it. Under these conditions, the spring drive for the pump is of great value, as its action will permit a quick discovery of a clogged shaft in time to prevent serious damage.

Avoid Quick Drying Varnishes.

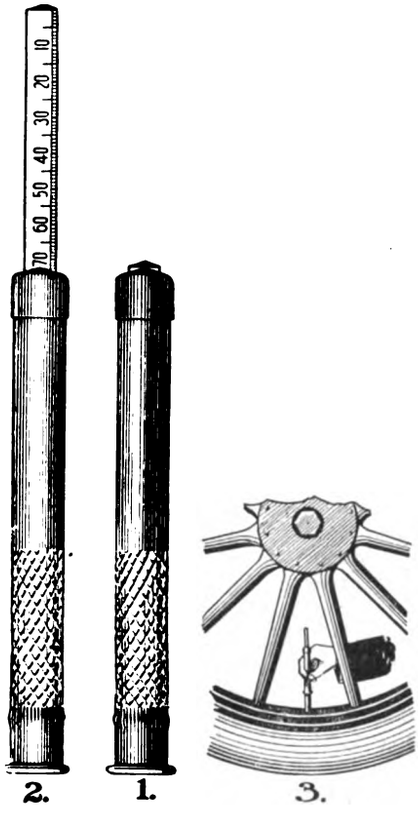
"Avoid using quick-drying rubbing varnishes so far as possible," observes the Carriage Monthly. "Motor car surfaces, as a rule, are wide reaching, and subject, during service, to great strain and intense vibration, both of which are alike destructive to varnish possessed of brittle tendencies."

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FOR DETERMINING TIRE PRESSURE

Here is a Simple Gauge of Vest Pocket Proportions—Easy to Use and Tells the Story at a Glance.

It is seldom realized by the average motorist what an important bearing the proper inflation of his tires has on their life, and the amount of service which they give. While the manufacturer has striven diligently to impress on him the necessity for keeping his tires pumped to just the right pressure, if he would desire the fullest satisfaction from their use, the user is prone to be guided by rule-o-thumb in this important matter.



A prime regard for comfort may induce him to run his tires partially inflated, but the continuous flexing of the tire at an acute angle, when passing over obstructions soon results in a rupture of the fabric, which pressages rapid disintegration.

Pressure gauges have been recommended as a means of overcoming this trouble, but many of those which have been available for this purpose, were either expensive or inaccurate. To meet the demand for an instrument at a reasonable price, which would enable motorists to quickly and easily ascertain the proper pressure for their tires, the W. D. Newerf Rubber Co., of Los Angeles, Cal., is introducing the Twitchell air gauge.

In the accompanying illustration Fig. 1 shows the device in closed form, its total length being 3½ inches, making it convenient to carry in the vest pocket. Referring to Fig 2, the gauge is shown extended as in use, and its practical application to a tire is depicted in Fig. 3. The Twitchell gauge is guaranteed to register accurately and is claimed not to be liable to derangement under ordinary conditions.

This Tire Promises a Revolution.

Again has "the perfect substitute for the pneumatic tire" been found, and " the resiliency and elasticity of the pneumatic tire has been retained while objections thereto have been overcome." This time the solution comes from Chicago, and in place of air the inventor proposes woolen yarn. Being a maker of pool table pockets and fringes, F. M. Georgi, of the Windy City, is intimately familiar with the ability of woolen cords to absorb such objects as pool balls, "pills" and cubes of cue chalk, and this quality appeals to him as of possible practical application in swallowing the shock of road pebbles, stones and other road roughnesses. As a substitute for the air inflated inner tube, therefore, he has devised a filling consisting of closely lying woolen strands held together by an external wrapping of cord. The convolutions of the cord are "in mutual contact" making the core look like one of those elaborately wrapped imported goose liver sausages, which are the delight of the delicatessen epicure. The core is placed in the usual outer shoe, but the latter is laced tightly over it. According to Georgi's theories, "the core gives to the tire the required elasticity and resiliency, equal in all respects to the usual inflated tire, while the weight is much less."

Tells of Progress in Locomotion.

That chapter of evolution which deals with vehicular development though frequently retold, always is pertinent in connection with the improvement of the motor vehicle—most wonderful vehicle of all. Rehearsed in brief and entertaining form together with suggestive half-tone page headings, it has just appeared in a brochure entitled "Progressive Locomotion," and forming about one-half of the subject-matter of the pamphlet. The other half is devoted to the entertaining "life story" of the automobile tire, which was recently printed in these columns, and which is thus incorporated into the literature of the Firestone Tire & Rubber Co., Akron, O., by whom it was produced. In addition to illustrations showing the development of the tire from tree to wheel, a limited amount of space is devoted to illustrations of the various Firestone tire products.

Symptoms in the Acetylene Light.

If acetylene lamps are observed to light up quickly with a yellowish flame, the symptom may be taken as indicating a leak. When the system is in proper condition the light should start up slowly with a hissing noise and a clear white flame.

BATTERY TESTER OF A NEW TYPE

Pocket Volt-Ammeter with Many Notable Improvements—How It Combines Two Instruments in One.

For 1909 the Connecticut Teleprone & Electric Co., Meriden, Conn., have increased their already numerous line of pocket meters by the addition of a new type of dead beat volt-ammeter for testing batteries. Many notable improvements have been incorporated in the new instrument which tend to increase its efficiency.

Most conspicuous among the advances is the use of an etched metal dial replacing the former paper card dial, which is now universally used for this purpose, and in addition greatly enhances the appearance of the instrument.



The new dial eliminates warping and bulging, a fault common to the paper dial and which caused the pointer to stick in taking a reading. Internally the construction has been redesigned and is now non-oscillating. Last but not least, the pointer has received attention, and is of a new type.

This instrument is but one of a number of different styles of pocket battery meters which are made by the company in question. The volt ammeter is as a matter of fact, two instruments in one. The voltage side is used in testing the pressure on storage batteries, while the ampere side is employed in ascertaining the strength of dry cells. In the former instance, as the makers of the instrument explain, each cell when tested individually should show 2½ volts after the battery is fully charged and is still charging, while an indication of less than 1.7 volts, should be taken as an intimation that recharging is necessary. A storage battery on open circuit, when fully charged should show between 2 and 2.2 volts. In testing dry cells, each unit should be tried out separately, the minimum of 6 amperes being sufficient indication that a new cell is required.

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BUCKING THROUGH SNOWDRIFTS

Four Secure Perfect Scores in Rochester's Endurance Run—Must Again Contend for the Two Trophies.

With heavy drifts of snow at least four feet high barricading the road in many places the first annual midwinter endurance run of the Automobile Club of Rochester on Thursday last, 11th inst., scarcely can be designated as a pleasure run. The only part of the route that did not bother the 16 contestants was in going out of Rochester. An investigation held later in the week by the police of that city disclosed the fact that Rochester's street cleaning department had little to do the remainder of the week but to play pinochle, seven-up at 5 cents a corner, and other harmless amusements. It is stated on none too good authority, however, that residents along the line of march, or rather scorch, could not go out doors for several days without first getting into hip high boots. Such a burning pace was set by the automobiles, it is asserted, that the snow melted and flooded the streets.

Whether this be true, or merely the sour-grape noise made by the unfortunate class of non-motorists, it is certain that nearly all of the 16 starters managed to survive the wind-biting, snow-bucking journey from Rochester to Buffalo and return, and equally certain is it that at least four of the drivers managed to check in on time, without having made repairs, and thereby earned perfect scores. After all the hard work occasioned by driving a car over 151 miles of snow-choked country roads in 9 hours 10 minutes the fortunate quartet did not get the promised reward. There were only two cups up for the two best scores and it is not an easy matter to divide that number of trophies between twice as many drivers. In view of this the perfect score quartet—who by the way are Henry Selden (Selden); William C. Barry, Jr., (Selden), Richard Guyer (Cadillac), and F. Q. Shannon (Gearless)—some time within the next two or three weeks will have to do the stunt all over again in an effort to break the present tie.

The heavy drifts of snow encountered between Rochester and Batavia, the first checking station, were of the mountainous variety and the drivers had to scorch at every available opportunity in order to cover the distance at 35½ miles in the allotted time of 2 hours 20 minutes. Better roads were met with later, and 2 hours 10 minutes were allowed to cover 40 miles. Upon the return trip a slight deviation of two miles was made.

Most of the trouble experienced by the drivers was due to the drifts, which resulted in stalled motors and clutch trouble. Ora D. Davis (Gaeth), Ray Bettys (Cadillac), Edward White (Mitchell), F. W. Peck (E-M-F.), William Bennett (Chalmers-Detroit), Harold Pye (Cadillac), and L. B. Kirkpatrick (Oakland), lost points through these troubles. A. V. Hart (Thomas) lost one point for checking in ahead of time, while Charles Young (Selden) was assessed 18 points because of delays caused by carburetter difficulties. The Brush, driven by George Berger, lost the maximum number of 1,000 points.

There were only two accidents and one of them, fortunately, did not prove serious. In rounding a sharp turn east of Buffalo the Selden car driven by Hector Caramella turned turtle and was wrecked, the driver escaping with light injury. Earlier, Bert Van Tuyle, in the pacemaking car, ran into the ditch on the same turn, but the car was quickly righted and proceeded toward Rochester. Charles Young was disqualified for speeding. The official summary, showing the points assessed each driver, is as follows:

Driver. Car.	Points.
Henry Selden, Selden	0
William C. Barry, Jr., Selden	0
Richard Guyer, Cadillac	0
F. Q. Shannon, Gearless	0
Ora W. Davis, Gaeth	1
Harold Pye, Cadillac	1
A. V. Hart, Thomas	1
Ray Bettys, Cadillac	2
William Bennett, Chalmers-Detroit	3
L. B. Kirkpatrick, Oakland	6
Fred Wilson, Selden	18
F. W. Peck, E-M-F.	33
Edward White, Mitchell	95
Charles Young, Selden	1,000
Hector Carmella, Selden	1,000
George Berger, Brush	1,000

Willard Wins in Houston's First Run.

P. W. Willard, driving a Stearns car, was the only one of five drivers that participated in the first endurance contest promoted by the Chauffeurs' and Auto Mechanics' Club of Houston, Texas, from that city to Beaumont and return, Saturday and Sunday, 7th and 8th insts., who finished with a perfect score, not a point having been marked against him for making repairs or breaking any of the rules. Sherman Brady, Franklin, lost only five minutes in making repairs, while George Ayres, Dixie-Seven, was delayed several hours after running into a stump. Their desire to reach Beaumont first proved the undoing of D. B. Kent, Chalmers-Detroit, and J. W. Bell, White. After reaching the city limits Bell and Kent raced for the control at the Crosby House, and this act resulted in their disqualification.

Germans Plan a Big Motor Speedway.

Germany is to have a Brooklands of its own if the plans of the promoters of the project materialize. A company with a capital of $100,000 has been formed to sponsor the scheme, and it is proposed to build the new course in the vicinity of Potsdam. Work on it will be begun immediately, with the idea of holding the opening meets in the autumn.

PLUGGING THROUGH MUD PUDDLES

Eighteen Perfect Scores Made by San Francisco Endurancers—Only Two Failures—Tires to Blame.

Plastered with mud so thickly that both cars and passengers scarcely could be recognized, 18 cars of a possible 20 entered in the 200 miles endurance "mud-plug" of the San Francisco Automobile Dealers Association, Sunday, 7th inst., finished with perfect scores. Despite the fact that the roads were covered with mud, the cars rolled off miles through rain and hail with clocklike regularity, and the two cars that failed to finish on time were retarded by tire troubles.

Although it was pouring rain at 6.30 a. m., 20 cars started from Van Ness and Golden Gate avenues, at one minute intervals. The course was to Twelfth and Broadway, Oakland, a checking station being established at San Jose to insure the cars running all the way around the bay and covering the required distance of 200 miles.

From the time the cars left the paved streets of San Francisco until they entered the confines of Oakland, mud in all its forms, from sticky adobe to deep slush, was encountered in wholesale quantities. From the city limits of San Francisco to Redwood City the roads were in terrible condition, and more than one of the cars had difficulty in getting through this part of the course successfully.

Several hairbreadth experiences were related by the survivors. Among the number was Charles S. Howard, chairman of the tours and runs committee of the association. In following a supposed short cut Howard allowed a team to take a bridge ahead of him, and he thanked his lucky star that he did so, for both horses went out of sight in the muddy water, which proved to be the only support of the deceptive structure.

Of the two cars that failed to finish on time, both were victims of tire trouble. The Premier driven by G. W. Freeman was the most unfortunate sufferer in this respect. Freeman had to stop seven times to attend to tires, but despite these setbacks almost made up his time, being only six minutes late at San Francisco. The other car that failed to finish was a Tourist. Following are the drivers who made perfect scores:

L. B. Harvey, Rambler; C. S. Howard, Buick; J. H. Eagle, Studebaker; F. Mick, Apperson; M. S. Harris, Studebaker-E-M-F.; F. Murray, Buick; Max Rosenfeld, Peerless; E. L. Cutting, Ford; R. C. Anthony, Reo; E. S. Martin, Mitchell; Norman de Vaux, Auburn; A. E. Hunter, Mitchell; C. Aurandt, Tourist; A. D. Plughoff, Stoddard-Dayton; C. Christenson, Buick; F. Stork, Franklin; R. G. Fowler, Overland, and Walter Morris, Autocar.

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BIG CARD FOR FLORIDA SANDFEST

Twenty-two Events on Program for Four Days Meet—Schedule of Contests and List of Prizes.

Announcement was made this week of the program for the seventh annual sandfest on the Ormond-Daytona beach. This year the affair is to be promoted by the Motor Contest Association, Inc., as manager, of which W. J. Morgan retains his long cherished position as personal director of the project. At the same time, the affair is characterized as being "under the patronage of" the Florida East Coast Automobile Association, which means that the Ormond end of the old-time rivalry is entirely shut out of the profitable phases of the meet. Entry blanks have been issued, and entries will close March 10th with the manager, whose office is in the Thoroughfare building, 1777 Broadway, New York City.

The program announcement calls for no less than 22 events to be contested during the four days of the meet, which include in addition to the automobile items, motorcycle and bicycle races and a series of aeroplane speed trials—all duly sanctioned and to be run under the rules of the American Automobile Association, Automobile Club of America, Federation of American Motorcyclists and the National Cycling Association, as properly arranged. Numbered among the 1[illegible] events devoted to automobile contests will be the two-miles-a-minute speed crown race, against Demogeot's record of 58⅕ seconds; the Vanderbilt Cup competitors' race, open to all cars in past Vanderbilt cup contests; a 200 miles piston displacement class race, and others. The list of events in full is as follows:

No. 1: Florida Stock Car Price Class Race, 200 miles.—Class E: Cars listing at $999 and under. Class D: Cars listing at $1,000 to $1,750. Class C: Cars listing at $1,751 to $2,450. Class B: Cars listing at $2,451 to $3,750. Class A: Cars listing at $3,751 and upwards. First prize in each class, $200 cash or plate; second, silver shield; third, gold medal. Entry fee each class, $50.

No. 2: Piston Displacement Class Race, 200 miles.—Class F: 230 cubic inches, (for example up to 4-inch bore, 4½ stroke). Class G: Between 230 and 320 cubic inches (for example up to 4½-inch bore, stroke 10 per cent. greater). Class H: Between 320 and 460 cubic inches (for example up to 5-inch bore, stroke 10 per cent. greater). Class I: Above 400 cubic inches (all above Class H limit). First prize in each class, $200 cash or plate; second and third, gold and silver medals. Entry fee each class $50. A special prize of $250, in cash or plate, to the driver who produces the best results in both this race and in the price class race combined.

No. 3: Minneapolis Trophy Race, 100 miles, for the $2,000 Minneapolis Trophy—First prize, $300 cash or plate; second, $150 cash or plate; third, $50 cash. Special prize if winner covers 100 miles within one hour. Entry fee, $50. Present holder of trophy, the Fiat, which, like the Mercedes and Napier, has won it once. It must be won twice to become the property of the winner, not necessarily in succession.

No. 4: Two-mile-a-minute Speed Crown Race—Winner to receive the Gold Speed Crown, and $300 cash or plate; second, $150; third, $50. Winner must equal 120 miles an hour. Entry fee, $50. Present holder of two-mile record, Victor Demogeot, Darracq, who covered the two miles in 1906 in 58⅕ seconds.

No. 5: One mile, best two in three heats, record race for the Sir Thomas Dewar $2,000 trophy, to be given outright, with $250 cash or plate to the winner; $150 to the second, and $50 to the third. Present holder of trophy, Fred Marriott, mile record, 28⅕ seconds. Entry fee, $50.

No. 6: International Free for All Race, 1, 5 and 10 miles, best two in three—First prize, $300 cash or plate; second, $150 cash or plate; third, $75. Entry fee, $50.

No. 7: Southern Price and Horsepower Handicap, 5 miles, open only to residents of Southern States—Prizes, gold and silver medals. Entry fee, $10.

No. 8: Vanderbilt Cup Competitors' Race, open to all cars in past Vanderbilt Cup Races, 50 miles.—Trophy and $400 cash to winner; second, $250; third, $100. Entry fee, $50. Must be four starters.

No. 9: One Mile Record Gold Medal Races, best in two in three, open only to entrants in events Nos. 1 and 2.—Silver and bronze medals for second and third in each class. Entry fee, $20.

No. 10: Motorcycle Marathon, 100 miles, two classes, 30-50 and 61 cubic inches piston displacement. F. A. M. rules. Prizes, gold, silver and bronze medals. Entry fee, $5.

No. 11: One hour Motorcycle record race, to beat the Brooklands, England, track record of 67 miles 1,655 yards, standing start, two classes same as above, F. A. M. rules. Silver shield to first; bronze shield to second. Entry fee, $5.

No. 12: Aeroplane speed trials.

No. 13: Invitation Match Race, George Robertson, Lewis Strang, Herbert Lytle, Ralph De Palma, and other noted drivers. Purse, $1,000 gold. Must be three starters.

No. 14: Motorcycle Speed Trials, kilometer, mile, 5 and 10 miles.

No. 15: Bicycle Races and Trials.

No. 16 to 22: Amateur and professional straightaway bicycle championships under the sanction of the N. C. A., ¼, ½ mile, kilometer and mile races. Cash prizes to professionals and medals to amateurs. $1,000 in prizes. $150 cash extra for the fastest mile. Mile motor paced bicycle record trials. Prizes, $100 first prize for each professional race, $50 to second, $25 to third. Entry fee, amateurs, $1. Professionals, $2.00.

Incorporates to Build a Speedway.

The Indianapolis Motor Speedway Co., which is the corporate title of the body promoting the project of a huge motordrome at Indianapolis, Ind., has assumed tangible shape. Articles of incorporation naming a capitalization of $250,000 were filed last week, and it is stated that an engineer's office having been opened on the ground of the proposed course, the work of surveying the track is already under way. Contracts have been made with the Aero Club of America to have the course finished by June 1st in order to serve as the starting point of the next balloon race.

AMERICA WINS THE DEWAR CUP

Royal Automobile Club Awards the Trophy to the Cadillac—Award Based on Last Summer's Standardization Test.

Announcement was cabled this week that in acknowledgment of the remarkable standardization test of last summer the Dewar Cup has been awarded to the Cadillac Motor Car Co., of Detroit. The significance of the honor may be appreciated when it is understood that the rophy is awarded annually by the Royal Automobile Club of Great Britain for the most noteworthy performance of the year. This is the first time in its history that the cup has been presented to an American manufacturer. The award is based upon the special trial conducted by a special committee of the R. A. C. last summer when, following a 25 miles road test, three Cadillac cars were completely dismantled, their parts interchanged and mingled with certain other parts taken from stock, three new cars subsequently being assembled from the material in hand. No fitting of any sort was permitted during the test, and all three cars afterward were run a 25 miles endurance on the Brooklands course, where they averaged nearly 30 miles an hour. The demonstration created quite a sensation in England at the time.

Planning New York to Seattle Race.

Thomas Francis Moore, who modestly disclaimed all knowledge of the project, when the idea of a New York to Seattle race for next summer first was broached, has at length been won over to the scheme and is reported to be actually on his way to Seattle where he will interview the commissioners of the Alaska-Yukon-Pacific Exposition and the governors of the Seattle Automobile Club in an effort to arrange the details of the contest. Conceived by the officials of the exposition, the plan was at once placed under the patronage of Robert Guggenheim, who has donated a $2,000 trophy for the main prize, in addition to which cash prizes will be offered; amounts aggregating more than $5,000 already have been promised, according to the promotors. It is planned to start two pathfinding cars, one from New York and one from Chicago on March 15th, while the start of the race itself will occur either on May 15th or June 1st, according to the condition of the roads.

Date for Altadena Hill Climb.

The annual Altadena hill climb promoted by the Automobile Dealers Association of Southern California, which is one of the most important contests of the sort held in America, will take place on the hill between Pacadena and Altadena Monday next, 22d inst. Several important changes have been made in the rules governing this year's contest.

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CLARIFYING THE RACE SITUATION

Conditions Under Which the A. A. A. Becomes Sole Governing Body—Some of Its Promises for the Future.

Complete clarification of the racing "situation," by which the American Automobile Association will hereafter be the sole recognized and authoritative governing body in the United States, has been undertaken by the combined forces of the Association itself and of the motor car manufacturers and importers who for a time threatened to set up an alleged race control association of their own. According to the program which has been decided upon, the A. A. A. will not only govern all of the large events, but will abandon its position as to automobile racing on small horse tracks, no longer leaving this form of racing to uncontrolled and irresponsible promoters.

Furthermore, the plan provides that the powers assumed by the Automobile Club of America in its celebrated "peace agreement" with the A. A. A., as to the control of "international" races held in this country, are in the main to be restored to the association by acquiescence on the part of the Club. The latter is thought to have no warm enthusiasm over being involved in the difficult task of controlling and sanctioning race meets which become "international" through the simple process of being advertised as such, and it is believed that it will yield part of the fruits of its diplomatic victory to aid the racing cause.

Matters came to a head as the result of the formation at Chicago during the show of an organization known as the Manufacturers' Contest Association, having for its general object the protection of the manufacturers' interests in racing matters. A meeting of makers and importers anxious for an improved government of racing matters had been held at the Hotel Victoria, New York, in January, during the Madison Square Garden show, at which time the sentiment had been largely for an independent governing body composed of the makers and importers themselves. The impracticability of this idea, however, was sufficiently apparent to make the later meeting at Chicago take a different turn.

While the makers organized, in accordance with the tentative program advanced at New York, they dismissed the plan for a governing body of their own, and decided to support the A. A. A. as the proper organization to control racing. Nevertheless, they undertook to advance their common interests as far as possible by seeking recognition in the counsels of the A. A. A. in racing matters so that the wishes of the manufacturers as a body might be given due consideration in the framing of rules and the regulation of contests in general.

The meeting at Chicago was held on February 10, 35 manufacturers and importers being in attendance. Benjamin Briscoe, of the Maxwell-Briscoe Motor Co., was elected president, and William E. Metzger, of the E-M-F. Co., secretary-treasurer, with Russell Field, of New York, as assistant secretary and Howard E. Coffin, of the Chalmers-Detroit Motor Co., as chairman of the committee on rules. The latter committee was determined upon to prepare racing rules framed as the racing interests themselves would like to have them, for the consideration of the A. A. A. Conferees were appointed to meet with the A. A. A. officials and apprise them of the new organization's attitude.

Negotiations with the A. A. A. have resulted in an agreement between the two bodies that the Manufacturers' Contest Association will support the A. A. A. in its control of racing and that the latter will give the M. C. A. recognition even to the extent of letting it have an advisory committee with a voice in the proceedings of the A. A. A. contest board. The contest board is composed of Chairman Frank B. Hower, Frank G. Webb and A. L. McMurtry, while the advisory committee from the M. C. A. consists of Alfred Reeves, E. P. Chalfant and E. R. Hollander, representing the "independent," the "licensed" and the importing elements, respectively, of the new organization. The function of the advisory committee will be purely "advisory," and it will have no vote as to the contest board's actions.

Rules governing all racing events for 1910 will be formulated by the rules committee of the M. C. A. and will be submitted for approval or alteration by the A. A. A. contest board, so that as finally adopted and promulgated by the latter they shall be ready before the first of September, thereby giving the manufacturers an opportunity in advance to construct the types of cars that will be eligible for the 1910 racing season.

Quite enspirited by the support which the manufacturers have pledged to it, the A. A. A. is exuding good resolutions and noble promises as to the strict but broad and impartial lines on which it will insist that automobile racing shall be conducted hereafter. Confessing that up to the present time its "control" of racing has been under a "haphazard and disjointed system," it forecasts for the future so gushingly as even to declare that no race will be sanctioned unless the contest board has positive assurance "that the spectator will be rewarded at least to the extent of the admission price," not to mention the measures that will be insisted upon for his safety. Indecorously alive to the trade side of the "sport," the Association intimates also that the makers who compete under the new order of things will receive "more good wholesome advertising and publicity" than before, and it is altogether lavish in picturing the thoroughness and efficiency with which it intends to exercise its powers.

Members of the M. C. A. express the hope that the A. A. A. will "make good" in shouldering it's responsibilities as it should and presenting a contrast to its jelly-spined and indifferent attitude of the past, so that the qestion of racing control may find its satisfactory solution under the arrangement effected. To this end, the manufacturers and importers declare themselves as pledged to give every aid, so that with a strengthened hand the A. A. A. can fulfill its proper function as the supreme race governing body.

More Money for the Motor Parkway.

Financial affairs of the Long Island Motor Parkway have been bobbing into prominence for the last few weeks through the fact that it became known that the enterprise was greatly in need of further funds to carry on the work of construction. The original bond subscription of $500,000 appears to have been eaten up already in the construction of the nine miles actually built out of the total of 40 miles which the scheme contemplates, and in laying out of parking spaces in connection with the racing events so far held. Rumors that the project was to be abandoned as a failure were set at rest late last week, however, by the announcement that J. Pierpont Morgan, W. K. Vanderbilt, Sr., and H. B. Hollins had subscribed for $1,000,000 more of bonds, thus figuratively putting it on its feet again, so that the work of completing the Parkway will commence in the spring.

Hartford Plans a Four-Ply Run.

At the regular monthly meeting of the Automobile Club of Hartford, held last week, the report of the contest committee providing for a 200 miles endurance contest to be held on May 22 was accepted. The plan adopted calls for a run over four different routes of approximately 50 miles each, radiating from Hartford, where will be the only point of control; and a time schedule allowing for a speed of not more than 20 miles per hour. Penalties, exclusive of tire troubles, are to be assessed for each minute lost in making repairs, at the rate of one point per minute; and all stops to be added to schedule time. Any "obvious" breakages or deformation of springs, spring hangers, frames, axles, pivots, wheels or parts thereof, are to be penalized.

Working up a Climbfest for Chattanooga.

Encouraged by the interest aroused in the forthcoming Mardi Gras meet at New Orleans, in which he has a hand, the well-remembered W. A. Pickens is active in the promotion of a three days hill climb and race meet to be held at Chattanooga, Tenn., March 16, 17 and 18. The program includes a hill climb on Lookout Mountain for the first day, followed by a two days meet on the Olympic track. A match race between Lewis Strang and De Palma, "the great French driver," figures conspicuously in the preliminary announcements.

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REVISING BAY STATE STATUTES

Highway Commission Reports on Codification—It Prefers a Uniform New England Law Which It Submits.

One of the busiest committees of the Massachusetts legislature at the present time is that on roads and bridges, to which is referred all proposed legislation affecting motor vehicles. The grist falling into the legislative hopper this session is quite as voluminous as during previous sessions, and the committee has given several important hearings. It now has to take up and consider the report of the State highway commission, made in accordance with the resolve passed last year directing the codification of the motor vehicle laws of the State. This report is a printed document of 56 pages, including not only the codified laws of the State with the Commission's report thereon, but also the proposed uniform motor vehicle law for New England, which was drafted as a result of the conference of New England governors in Boston last fall. The Commission recommends that the uniform law be adopted in place of the codification of the existing laws.

The codified law consists of 32 sections and includes not alone the existing statutes, but rules which the Highway Commission has made under authority of statute, likewise some new provisions, which in the opinion of the Commission are desirable. Following are some of the most important features:

Section 2 has to do with registration and a new clause gives the Highway Commission power to refuse to register a vehicle which it considers unsafe or improperly equipped, and for the same cause it may revoke registrations. Section 5 is entirely new and relates to the display of number plates, which must be placed so as always to be visible, in a horizontal position with the bottom not less than 15 and not more than 36 inches from the ground. The rear plate must be illuminated at night so that it can be seen at a distance of 60 feet.

Under section 7 the Commission has incorporated a new provision requiring that every motor vehicle of more than 10 horsepower shall have at least two powerful and separate brakes, one of which must act on the rear wheels. One must be a foot brake. Sections 9 to 15 have to do with the operation of motor vehicles. A chauffeur teaching an unregistered person is made liable for an infraction of the law by that person. The time for lighting up is changed from an hour to a half hour before sunrise and after sunset. Rear lights must show red and also white to illuminate the number plate. When left unattended the motor must be stopped and upon approaching a curve or intersecting way the driver is required to slow down and give a signal with his horn or other device. There is also included a clause requiring drivers to turn square corners.

The speed limits remain the same, but the law relating to local regulations is so changed as to prevent the exclusion of motor vehicles from State highways and other main roads. By section 28 the Commission's rule, somewhat amended, requiring the keeping by dealers and manufacturers of a record of the cars entering and leaving their garage is extended to all garages, thus covering private cars kept in public garages.

The most striking difference between the codified and the uniform law is in the matter of registration and fees. Under the uniform law there is arranged a system of graded fees based on horsepower, which is to be determined by the commission. The fees run from $5 for a car under 10 horsepower, and the charges for a dealer's or manufacturer's registration is made $50. For the registration of a non-resident's car during the summer months, or of any car between October 1st and the end of the year, a half rate fee is proposed. Another important change incorporated in the uniform law is the increase of the speed limit from 20 to 25 miles outside the thickly settled sections. Driving faster than the limit is made conclusive instead of prima facie evidence of an infraction of the law.

The system of penalties for speed violations is made more severe. For conviction of a second offense of driving while under the influence of intoxicating liquor, the punishment is made imprisonment for from six months to two years. Racing on the highways is made an offense punishable the same as reckless driving. This includes driving for a record. The uniform law would do away with all local speed regulations except those of the Metropolitan Park Commission and of the town of Nantucket.

Under the uniform law a person who has a regular residence or place of business in the State for three months in a year is considered a resident. Non-residents may use their cars in the State for ten instead of seven days and may take out three months' registrations, covering July, August and September. On the matter of determining the horsepower the bill reads: "The horsepower of every motor vehicle sought to be registered shall be determined by the commission, and such determination shall be final and conclusive."

French Tax Rating Unsatisfactory.

Much dissatisfaction is being manifested among owners and manufacturers in France over the new system of basing automobile taxation on the highest rating of cars. In the past, for example, a 20-30 horsepower car was taxed on a medium rating of 25 horsepower, and this basis was considered equal to all, but now the rate has been raised and in the future car owners will be taxed at the highest power value assigned their machines.

JOY RIDES FREE FOR EVERYBODY

Motoring Carnival to Mark the Opening of New York's Newest Bridge—Unusual Treat Planned for the Public.

Plans maturing for the opening of the Queensborough bridge on June 12 include a great motoring carnival to continue through the week, and which, the celebration committee expects, will enable "everybody and his wife or sweetheart" to enjoy a free automobile ride over the bridge and back. For the opening day the committee anticipates having more than 5,000 automobiles at command for this purpose, and they will be dispatched over the bridge under a two minutes headway during the day. It is believed to be vary probable that many of the real estate concerns engaged in developing home sites on Long Island will improve the opportunity to give prospective purchasers a taste of touring over the charming roads to which the big bridge will afford an approach from Manhattan, and the continual strengthening of this probability is one of the reasons for spreading the celebration over the entire week. The committee reckons also upon a big participation by automobile makers and dealers who will regard the occasion as affording especially favorable opportunity for demonstrating their machines. This expectation is reasonable in view of the fact that the great cantilever structure stretching across the East River between Manhattan and Long Island, with its central supports on Blackwell's Island, is the first big bridge in the world upon which special provision has been made for automobile traffic.

Arrangements for the carnival have been placed by the celebration committee in the hands of a special committee, the chairmanship of which has been accepted by A. R. Pardington, vice-president and general manager of the Long Island Motor Parkway. The vehicles crossing the bridge on the opening day will be under the control of the celebration committee and each will carry a sign indicating that it is free to any one who desires to take the ride. No person operating a machine on the bridge that day will be permitted to charge any fare.

In order to accommodate the operators of automobiles all conveniences will be provided free of charge, including gasolene, the making of repairs and the hospitalities of the garage. Small cards giving the various points at which these conveniences will be afforded will be given to all chauffeurs. Guide books telling of the principal points of Long Island and the best roads will be furnished all automobile owners on application to the automobile committee of the celebration committee. That many thousands of people will indulge in this unusual opportunity for an outing is a very safe prediction.

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AMONG CLUBS AND ASSOCIATIONS

Jersey Motorists to Confer on Laws—Support for Federal Legislation Invited—News of Club Elections.

An important gathering of New Jersey motorists is planned for Thursday evening, 25th inst., in connection with what is to be known as "Club Night" at the Newark automobile show. Secretary H. A. Bonnell, of the Associated Automobile Clubs of New Jersey, has sent out a call for a general meeting of all motorists holding membership in the various automobile clubs affiliated with the association, to be held in the Essex Troop armory. Secretary A. B. Le Massena, of the New Jersey Automobile and Motor Club, also has notified the 1,400 members of that Newark organization, and expects a big attendance from among the number.

The meeting is called in order that the representatives of the different clubs throughout the State may have opportunity to discuss in open session the different phases of the motor vehicle law and to suggest amendments to the present act that may be deemed advisable to the motoring fraternity.

It is expected that a large and representative gathering of club members will take part in the deliberations, as hundreds of automobilists have planned to visit the show on that evening. As the session will be held in the executive offices adjoining the exhibition hall, it will be convenient for the show visitors to attend.

At the regular monthly meeting which was held at the Auditorium Annex in Chicago last week, the executive committee of the American Automobile Association unanimously adopted the recommendations contained in a communication from Chairman Terry, of the legislative board requesting the support of the allied motor clubs in pushing the federal registration bill through Congress.

The bill provides that a motorist residing in any State upon filing with the proper bureau at Washington a statement that he has complied with the provisions of the law of the State of his residence, accompanying the same with a fee of $5, will be entitled to a United States number, which will be shown on his car when traveling from state to state, and will not be obliged to take out registration or pay any license fees in any state through which he may desire to pass.

Owing to internal dissensions within the ranks of the Bay State Automobile Association of Boston, several of its active members have withdrawn and formed a new organization, to be called the Boston Motor Club. R. R. Ross and A. E. Adams, who are the prime movers in the new club, have met with good success in their efforts to develop interest in the project, and the new club will start with over 200 members. A committee from the Bay State A. A. addressed a meeting of the members of the new organization, requesting them to reconsider their action and return to the fold, but it was decided to go ahead with the new club. At a temporary meeting held last week, committees were appointed to draft a constitution and by-laws, and secure quarters for the infant body. In answer to the question as to whether there is room for still another organization of the kind in Boston, the founders of the new club state that it is not in any way intended to antagonize the Bay State Club, but to strive to make the new club a social center for the motoring fraternity.

New life was instilled into the Illinois State Automobile Association, which had fallen into a state of lethargy at a mass meeting of the members held in Chicago last week. L. E. Myers, of Chicago, was placed in the chair and a vigorous campaign will be instituted to secure favorable legislation for motorists, co-operation in the work of state roads improvement, the erection of sign boards, the securing of discounts on motor car supplies for members, and in agitating the subject of uniform state laws in the middle West. The election of officers resulted as follows:L. E. Myers, Chicago, president; George W. Ehrhart, Decatur, first vice-president; P. A. Whitney, Peoria, second vice-president; E. W. McCready, Chicago, third vice-president; F. H. Trego, Chicago, secretary; John Farson, Chicago, treasurer.

At its recent annual meeting the Quaker City Motor Club elected a new set of officers and board of governors. Unusual interest centered in the fight for president and board of governors, and after a spirited contest, L. D. Berger was elected president The other officers chosen were M. E. Brigham, first vice-president; G. D. Bartlett, second vice-president; H. C. Harback, secretary; G. T. Stewart, treasurer. Board of governors, F. G. Dunlop, R. E. Ross, G. H. Gantert, J. R. Overpeck, W. J. Donnelly, E. H. Lewis, Richard Sellers, A. T. James and Max R. Greene.

At its annual meeting last week the Motor Club of Harrisburg, Pa., elected the following officers for the coming year: O. C. Robertson, president; C. C. Cumbler, first vice-president; F. J. Brady, second vice-president; A. G. Forster, third vice-president; J. C. Myton, secretary; J. C. Nissby, treasurer. Members elected to the board of governors were: W. O. Hickok, to serve two years; F. A. Stees, C. C. Cochlin and J. S. Sible, for three years.

After a not very successful existence the California Women's Automobile Club, which has its headquarters in San Francisco, has passed into the "great beyond." Last week the club closed its affairs, but the members immediately formed another organization, to be known as the Pacific Coast Motor Club. It was stated that the old name had been a hindrance to the advancement of the club. The officers of the new organization are: President, Mrs. J. W. Leavitt; vice-president, Mrs. J. C. Perry; secretary-treasurer, Mrs. J. H. Healy.

Motorists of Marshalltown, Iowa, having decided that an organization was needed to properly take care of their interests, last week formed the Marshalltown Automobile Club, with a charter membership of 25. At the election of officers the following were chosen to preside over the club's affairs: James L. Denmead, president; Charles C. Eldridge, first vice-president; A. J. Clark, second vice-president; Merritt Greene, Jr., secretary; H. K. Denmead, treasurer.

Brimfield (Ill.) motorists recently formed the Brimfield Automobile Club. After adopting a constitution and by-laws, the following officers were chosen: Dr. A. A. Knapp, president; E. M. Maher, vice-president; A. Mainville, secretary-treasurer. The club was launched with a membership of twelve, with bright prospects of a substantial increase.

At its annual meeting last week the Oneida (N. Y.) Automobile Club elected the following officers: John Maxwell, president; H. M. Reynolds, vice-president; Frank W. Farnam, secretary; Fremont Chapin, treasurer. After disposing of this important matter a constitution and by-laws were adopted and a good roads committee appointed.

At its recent annual meeting, the Automobile Club of Parkersburg, W. Va., elected the following officers for the coming year: W. T. Carter, president; C. L. Muhleman, vice-president; Joseph Russell, secretary and treasurer. Three members chosen for the board of directors were: W. S. Smith, Sherman Dils and O. S. Hawkins.

The destinies of the Rhode Island Automobile club for the coming year will be in the hands of the following officers, who were elected at the recent annual meeting: H. R. Nightingale, president; C. A. Russell, vice-president; F. M. Barber, secretary; E. E. Boyden and E. F. Crowell, members of the board of governors for three years.

At Columbus, O., on February 15, the Columbus Automobile Club took formal possession of their new club house, said to be one of the finest in the Middle West. Open house was held, and tradesmen, members and their friends took occasion to inspect the new quarters and participate in the house warming ceremonies.

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The Week's Patents.

901,767. Brace for Supplementary Vehicle Springs. William Young, St. Louis, Mo., assignor to Supplementary Spiral Spring Company, St. Louis, Mo., a Corporation of Missouri. Filed Nov. 24, 1905. Serial No. 288,899.

1. A rigid brace for a supplementary vehicle spring composed of a pair of arms and a pair of cross-pieces connecting same, said cross-pieces containing openings by which said brace is attached to the device to be braced, the opening in one of said cross-pieces being in a different vertical plane from the opening in the other.

901,826. Differential Gear for Motor Vehicles. Charles J. Pittman, Redfern, near Sydney, New South Wales, Australia, assignor of one-half to Frank Ireland, Sydney, New South Wales, Australia. Filed May 11, 1908. Serial No. 432,186.

1. A differential gear for vehicles comprising a driving shaft, an arm fixed to turn therewith, a part loosely balanced on said shaft, a notched wheel also loosely mounted on said shaft, and a pawl pivotally mounted on said arm and fulcrumed on said part, said pawl having an arm adapted to be engaged relatively to the notched wheel by a relative rotation of said arm and part.

901,842. Detachable Shoe for Self-Propelled Vehicle Wheels. William P. Shattuck, Minneapolis, Minn., assignor of one-half to M. McVoy, Jr., New York, N. Y. Filed April 22, 1907. Serial No. 369,674.

1. The combination, with a wheel and its tire, of a flexible shoe and means for securing it to the tire, metallic plates secured to said shoe on each side of the center line of the tread of the tire, said shoe being adapted to yield between said plates and allow them to conform to the compression of the tire, and propelling blades mounted on said plates and adapted to engage the soil as the wheel revolves, and pack it ahead of them on each side of the wheel, for the purpose specified.

901,898. Steering Mechanism for Self-Propelled Vehicles. Charles B. Hatfield, Cortland, N. Y., assignor to Hatfield Motor Vehicle Company, Cortland, N. Y., a Corporation of New York. Original application filed Jan. 26, 1907. Serial No. 354,308. Divided and this application filed April 24, 1907. Srial No. 370,027.

1. A steering mechanism for self-propelled vericles in combination with a steering axle, a segmental guide secured to the axle, said guide constituting a fifth wheel section, a bearing for said segmental guide, a chain passed around the guide and connected to the axle, a steering post and means on the steering post for engaging and actuating the chain.

901,907. Wheel. Arthur L. Jiminez, New York, N. Y., assignor of forty-five one-hundredths to Joseph Lopez Jiminez, and one-twentieth to Juan M. Rigau Carrera, New York, N. Y. Filed July 1, 1907 Serial No. 381,689.

1. A wheel comprising a sheet metal body portion and a tire portion, said body portion comprising two plates secured together and each provided with a peripheral bead, the peripheral beads of the respective sheet metal body members co-operating to form a hollow rim disposed within the tire portion and a pneumatic tube within the tire portion and constituting a bearing for the hollow rim formed by the peripheral heads on the plates of the body portion.

901,921. Automobile Lamp. John Markman, Pittsburg, Pa. Filed April 30, 1908. Serial No. 430,161.

In a device of the type described, a lamp box comprising a base and side walls secured thereto, guides carried by said side walls adjacent the upper and lower edges thereof, reflectors secured in said guides, braces connecting said side walls at the ends thereof, a transparent plate seated in the brace at the forward end of said box and in the said base, a sign-plate secured over said transparent plate, a perforated metallic top-plate for said box, hinged door for the rear end of said box, and a reflector carried by the inner face of said door.

902,015. Tire Protective Rivet. Edwin B. Stimpson, Brooklyn, N. Y., assignor to Edwin B. Stimpson Company, a Corporation of New York. Filed Jan. 30, 1908. Serial No. 413,373.

1. A protective rivet, comprising a base member having a hole through it, a shank member projecting from said hole having a headed portion too large to pass therethrough, a ring-like member secured on the base member by infolding the latter against it and having the walls of its ring opening in an engagement with the shank head adapted to prevent movement of said shank head away from the base member, said ring member being recessed on its outer face to have ring-like road contacting walls, one within the other and separated by a space.

902,045. Differential Mechanism. Emile Aze, Minneapolis, Minn., assignor of one-half to Hans Bjelland, Minneapolis, Minn. Filed May 15, 1908. Serial No. 432,980.

1. A differential mechanism comprising a gear wheel, a casing secured thereto and having hubs, axles journaled in said hubs and having eccentrics on their inner ends, a primary cross head having a guideway in said gear, secondary cross heads having guideways in said primary cross heads and movable in a direction substantially at right angles to the direction of movement of said primary cross head, said secondary cross heads having openings to receive said eccentrics, and means whereby the movement of one secondary cross head will be transmitted to the other one.

902,072. Wheel. Richard K. Gregory, Greensboro, N. C. Filed March 16, 1907. Serial No. 362,706.

In a vehicle wheel, the combination with a channeled rim and its support, and a circumferentially extending series of shoes movable within said rim and spring pressed outwardly and formed with transversely enlarged inner ends producing outwardly facing shoulders, the rim being formed with coacting shoulders to limit the outward movement of the shoes, the sides of said enlargement being formed with sockets, each shoe being formed at one end with spaced sockets in line with the sockets of the enlargements and between said end sockets with a groove, each being formed at its opposite end with a tongue of less width than the shoe and in alignment with the side enlargements, said tongue being adapted to fit in the groove of the next adjoining shoe, anti-friction devices mounted in the sockets of the side enlargements of the respective shoes and bearing against the sides of the rim, and other anti-friction devices in the end sockets at opposite sides of the grooves, said last named anti-friction devices bearing against the end of the respective adjacent shoes.

902,117. Automatic Headlight Deflecting Mechanism. Joseph J. Shipley, Washington, D. C. Filed May 17, 1906. Serial No. 317,370.

1. In a motor vehicle, a spring supported body, steering knuckles, duplicate lamps rotatably supported from said body, a connection between the lamps whereby they may be moved in unison, means connecting one of the steering knuckles with one of the lamps, and means connecting the other steering knuckle with the other lamp, whereby both of the said lamps may be rotated to project the light in the path of travel of the vehicle when turning corners or rounding curves.

902,147. Tire. Edwin T. Greenfield, Kiamesha, N. Y. Filed Oct. 30, 1906. Serial No. 341,255.

In a tire, the combination of a resilient tube, an armoring therefor consisting of sheet metal of U shape cross section partially inclosing the tube and so formed as to provide spaces between the tube and armoring having openings in the face thereof, and projections supported on the tube and extending through the openings in the armoring, said projections being provided with means for preventing them from passing through said openings, substantially as set forth.

902,149. Driving Mechanism for Motor Driven Vehicles. Hans T. Hansen, Milwaukee, Wis., assignor, by mesne assignments, to T. D. Lovering, St. Paul, Minn. Filed May 29, 1905. Serial No. 262,760.

1. In a motor driven vehicle, the combination of a motor mounted on a yielding frame, and connected to drive the four wheels through rotary axle shafts—said connections comprising a flexible motor shaft, and a set of transmission shafts connected therewith by differential gearing, and operatively connected to drive the respective axle shafts, one of the transmission shafts being flexibly jointed between said differential gearing and the axle shaft, and supported at the joint from the yielding frame.

902,212. Sectional Tire. Horace O. Craven, Schenectady, N. Y. Filed Nov. 11, 1905. Serial No. 286,794.

1. In a tire section, two end supports of metal constructed to be attached to a wheel, a layer of textile material extending between said supports and connected thereto and an outer sheathing of elastic material covering said textile material and receiving said supports.

WHO IS RESPONSIBLE FOR THE RED HEAD?

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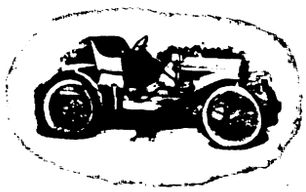
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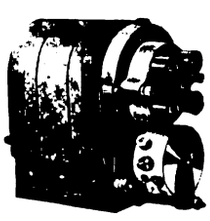
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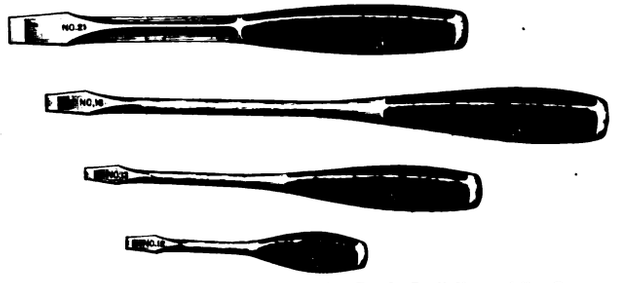


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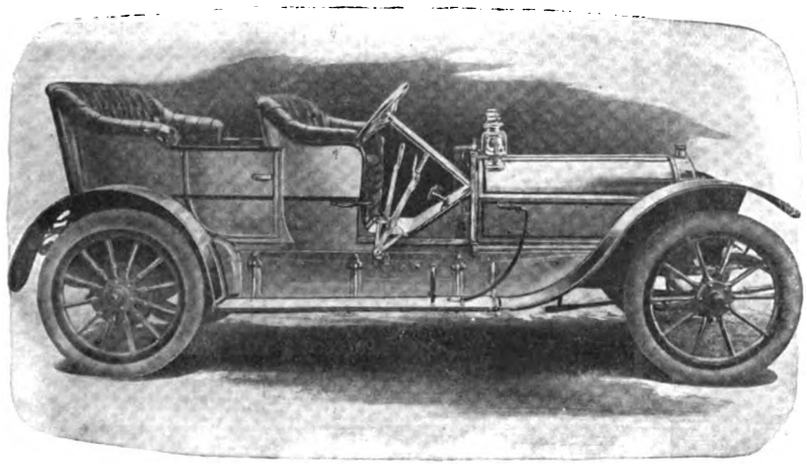
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A Dependable Car.
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The Simplest Automobile in the World.
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GRADUATE of stationary, automobile and marine gasolene engineering, with thorough technical training and two years actual experience, desires position as chauffeur, demonstrator, or in any other branch of the automobile business, in any part of the world. References and particulars furnished on application. CYRUS THOMPSON, Ravenwood, Mo.

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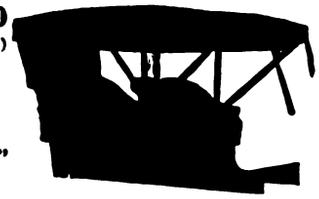
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Saving of time and saving of money explain the popularity of the Goodyear Detachable Auto Tire on Goodyear Universal Rim. On or off in less than 60 seconds with no tools except a wrench. This is the
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ALL CARS SOLD LICENSED UNDER AND GUARANTEED BY US ARE SELDEN PATENT FOR ONE YEAR.

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Nickel steel used to secure lightness and strength. Imported F. & S. ball bearings exclusively. Bosch high tension magnetos and multiple disc clutches in all models. Drop forged I beam, front axle—four-speed selective type, sliding gear transmissions with direct drive on third speed. All brakes equalized, all expanding type and on rear wheels. Universal joints on all steering connections. All types shaft driven, all moving parts enclosed in dustproof cases.



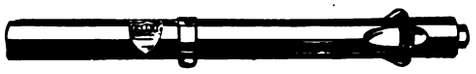
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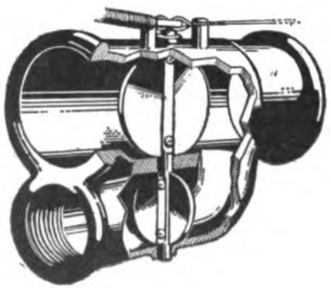
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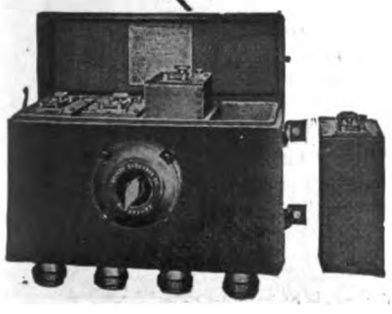
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is made possible by the low cost of the simple Lambert friction transmission, which is more efficient than any type of complicated, expensive gear transmission.

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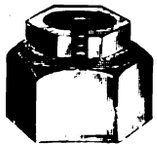
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That part of a tire with a blowout or a rim cut in it will last longer than any other part if encircled by a few sections of steel.
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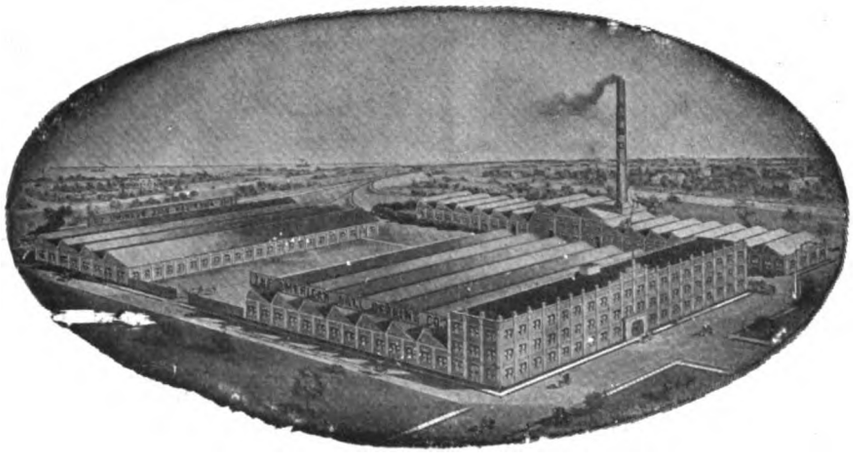


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Model B—Brush Runabout

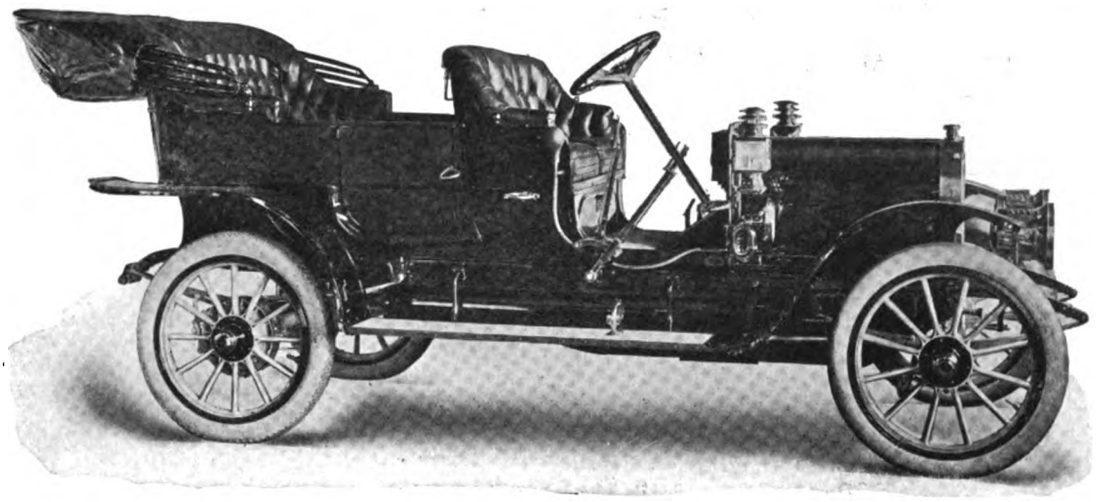
A CAR OF SIMPLE DESIGN MADE WELL
NOT A COMPLICATED DESIGN MADE CHEAPLY

Its records and the opinions of its users speak more loudly than self praise. Agencies for 1909 are being closed rapidly. Much good territory still open.

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$2,000 F. O. B. ROCHESTER, N. Y.

AFTER the remarkable results of our "first year"—the achieved success of 1908, we salute you with real and well established confidence as we introduce the Selden of 1909.

Not only has our promise to produce a high grade car of best materials and workmanship for $2000 been strictly fulfilled, but we have demonstrated the Selden genius in a silent, strong, comfortable, durable and handsome car. It does all that the owner wants to do and all that the chaffeur ought to do. Agents and owners are enthusiastic over it. Not a cheap car at all but one of the how-can-you-do-it-for-the-money kind.

Our 1909 wheel base is lengthened 5 inches from 109 to 114; the magneto and pump moved to left side of motor, the remaining equipment on the right; the brakes enlarged and now rigged inside the frame; the wheels now 34 inches were 32 inches; the radiator and hood made to conform in style to longer wheel base—little touches for style and convenience. No radical mechanical changes, simply because we couldn't find any necessary—no use fooling with what has proved so unusually good.

We can assure those who buy the 1909 Seldens all the efficiency of the 1908 Seldens with a little more style and a little more convenience, a little more refinement. The actual records of use and travel this year have so proven their merit, power and economic stability that it would be hard to promise anything better in practical construction.

THE COMING CAR OF MODERATE PRICE

Catalog and Agency Proposition upon Request. Agencies Wanted Everywhere.

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MORGAN & WRIGHT TIRES

are good tires.

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We have pleasure in stating that we have a car fitted with your tyres, which has been running successfully since May last. This car has covered up to date 12,000 miles, and about 7,000 miles were covered on your tyres, and although the treads are badly cut up, we have had the tyres re-treaded with anti-skidding bands, and the tyres are now as good as ever. We consider the rubber used in these tyres to be the finest we have come across.

We are, Dear Sirs, yours faithfully,
W. A. CLOUD.

Which only goes to prove that the world over *"there is no method of making friends equal to the method of making good."*

MORGAN & WRIGHT TIRES will "make friends" and "keep friends" with you if you specify them on your car.

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The Overland is no experiment. It has established a reputation the equal of any car at any price.

The extraordinary simplicity of its design, coupled with the quality of material and workmanship employed, make it absolutely fool-proof.

A child can learn to drive it in ten minutes.

The most exacting driver can get all the speed, all the power, all the service, and all the pleasure that he desires from it.

It is everybody's car, and does not belie its name.

Write for catalogue.

MODEL 30—$1,250.00.

OVERLAND AUTOMOBILE CO., Indianapolis, Ind.

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MILLER'S

Anti-Freeze Compound

DIRECTIONS FOR USE.

The radiator should be thoroughly washed out with hot solution of caustic soda, which will remove any dirt, and then clean water should be put in to see if the radiator leaks any place.

If the radiator is found not to leak, put in the solution. To get a mixture that will not freeze at 15 degrees below zero, Fahrenheit, add ten pounds of the compound to two gallons of water. To get a solution that will not freeze 30 degrees below zero, Fahrenheit, add ten pounds of the compound to every six quarts of water.

The cover on the can should be kept closed tight at all times while it contains any of the compound.

Price, 10-lb. cans..... $1.00 each.

Pan-American Automobile Body Polish



Pan-American Polish was awarded the Bronze Medal ("the only one awarded") at the Louisiana Purchase Exposition at St. Louis, 1904. This polish has been carefully prepared for the Automobile trade. It is also applicable to the carriage trade, or can be used on any varnished furniture or wood-work of any kind. It will remove stains, cover scratches; leaves the automobile with its original new lustre without being sticky or greasy.

It can be used on the leather seats or tops with the very best results. Can be used on any color or kind of varnish from the clearest white to the darkest black. Furnished in eight-ounce bottles.

For sale by all automobile dealers.

Price, 60 cents per 8-oz. bottle. Price, $3.00 per gallon.

Special prices quoted manufacturers, jobbers and dealers. Catalog on request.

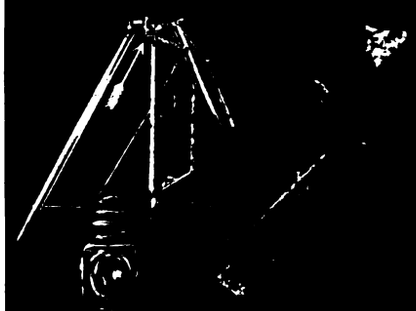
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Wind Shield

Up in a jiffy when you want it—down in a jiffy when you don't.

Like a tactful friend—never in the way and never out of the way.

Wind shield in the cold and windy part of the way—out of the way when the wind is down and the sun is up.

Dust shield when you are passing through a cloud of dust—out of the way the next moment.

Bug shield when you are passing through marshy country—out of the way the next moment.

You use the "Automatic" every day in the year. You can't use the ordinary wind shield in summer—only in winter, for protection from the wind and cold. There is no shield like the "Automatic" —not only because it is automatic, but for its thorough construction and handsome appearance.

40-inch size $35. 44-inch size $37.50—complete.

If your dealer can't supply you, send to us, and we will ship it direct. Send for book anyway.

Soot-proof Spark Plug



does everything that a spark plug can do to keep you free from ignition troubles. Always clean; no short-circuiting.

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1899 Model Equipped With Timken Bearings

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1895—(1) First prize, $150, for balanced motor, awarded by Chicago Times-Herald. (2) Speed Record, Louisville, Kentucky.
1897—(3) Speed Record, Charles River track, Boston, Mass.
1899—(4) First One Thousand Mile run made in America. This was accomplished by our phaeton, which ran from Kokomo, Indiana, to New York City.
1901—(5) Kokomo to New York City in 73 hours. (6) First Prize Blue Ribbon Certificate, Long Island Endurance run; one hundred miles during a heavy rain storm, without a single stop. (7a) First Prize Certificate in the New York-Rochester Endurance Contest. (8b) First Prize Certificate in the New York-Rochester Endurance Contest. (9) First Prize, Silver Cup, Five Mile Speed Contest, Fort Erie track, Buffalo, N. Y. (10) First Prize, Silver Cup. Ten Mile Speed Contest, Point Grosse track, Detroit, Mich. (11) Gold Medal, awarded Pan American Exposition.
1902—(12) Blue Ribbon, or highest award at the Long Island non-stop contest. (13) Blue Ribbon, or highest award at the Decoration Day run. (14) First Class Certificate in New York-Boston-New York Reliability contest, runabout model. (15) First Class Certificate in New York-Boston-New York Reliability Contest, standard model. (16) First Class Certificate in New York-Boston-New York Reliability Contest, surrey model.
1903—(17) First Class Certificate in New York-Pittsburg run, touring car. (18) First Class Certificate in New York-Pittsburg run, runabout.
1904—(19) First Class Certificate in New York-St. Louis run. (20) Grand Prize at World's Fair at St. Louis.
1906—(23) In the final race, held third place on the American team.
1907—(24) Silver Cup, Automobile Dealers Association of Southern California, five-mile race for complete touring cars. (25) New York Motor Club, New York-Albany Endurance Contest, two hundred miles through mud and rain. Silver Cup for mechanical excellence and finishing first in its class. (26) Perfect score in four days Sealed Bonnet Contest, Automobile Club of America, 600 miles, with all working parts under seal; finished without a single adjustment. (27a) Perfect score in Chicago Motor Club Sealed Bonnet Contest, 176 miles, with all working parts under seal. (28b) Perfect score in Chicago Motor Club Sealed Bonnet Contest, 176 miles with all working parts under seal. (29c) Perfect score in Chicago Motor Club Sealed Bonnet Contest, 176 miles, with all working parts under seal. (30d) Perfect score in Chicago Motor Club Sealed Bonnet Contest, 176 miles, with all working parts under seal. (31) Perfect score in run from Los Angeles to Lakeside; most strenuous contest over mountain roads. (32) Perfect score in the Glidden Tour. The most difficult touring contest held in America. (33) Made fastest time of any car in its class, irrespective of price, in the Algonquin Hill Climb, Chicago Automobile Club Contest. (34) Perfect score in the New Jersey Automobile Motor Club's 24-hour endurance contest. (35) THE ONLY PERFECT SCORE IN THE CHICAGO MOTOR CLUB'S 600 mile reliability contest.

All These Events Won on Timken Bearings

Past, Present, Future, Always Timken

1909 Still Using Timken Bearings

The Timken Roller Bearing Axle Co.
CANTON, OHIO
BRANCHES—10 E. 31st St., New York; 429 Wabash Ave., Chicago.



PALMER SINGER

ALL CARS SOLD LICENSED UNDER AND GUARANTEED BY US ARE SELDEN PATENT FOR ONE YEAR.

Specifications Common to All Palmer-Singer Models

Nickel steel used to secure lightness and strength. Imported F. & S. ball bearings exclusively. Bosch high tension magnetos and multiple disc clutches in all models. Drop forged I beam, front axle—four-speed selective type, sliding gear transmissions with direct drive on third speed. All brakes equalized, all expanding type and on rear wheels. Universal joints on all steering connections. All types shaft driven, all moving parts enclosed in dustproof cases.



Palmer-Singer Four-Thirty Skimabout, $2,250; equipped except top.

Palmer & Singer Mfg. Co.
1620-22-24 Broadway, New York. 1321 Michigan Ave., Chicago.
DISTRIBUTORS THE SIMPLEX.

STEVENS-DURYEA
XXX RUNABOUT

THIS car is popular priced and constructed along thoroughly modern lines. Has same power plant as embodied in Model X.

True worth of an automobile is based on its antecedents—mechanical excellence—economy of maintenance and durability. These main essentials are strikingly exemplified in the XXX Runabout—built to meet the demand for a gentleman's roadster.

PRICE, with magneto, $2,850
XXX Baby Tonneau, - $2,900

Send for detailed descriptive matter

STEVENS-DURYEA CO.
CHICOPEE FALLS, MASS.
Member Association Licensed Automobile Manufacturers.

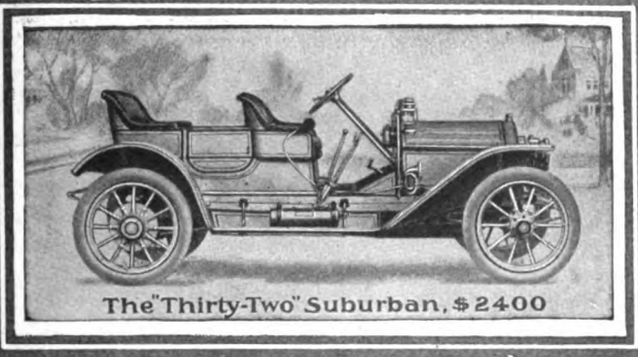
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THE MARMON

"A Mechanical Masterpiece"







Service. Not Sensation

There is but one way to attain the durability and constant reliability which are the very foundation of motor car value.

Fifty years of experience in manufacturing the highest grade of machinery have taught us the necessity of designing and manufacturing from the ground up.

It is this thoroughness of construction which has given the Marmon its fame for mechanical excellence, ideal service and length of life.

With all doubt about these vital attributes eliminated, the Marmon "Thirty-two" presents a notable value to the buyer who looks ahead.

Motor, 4 Cyl. 4½x4½. Water-cooled. 32-40 H. P. Three-point support. Ignition, Bosch H. T. Magneto, dual system. Lubrication, Marmon system of automatic force feed through hollow crankshaft. Drive, straight line shaft. Selective transmission and rear axle one compact unit, very accessible. Large brakes, effective and very durable. Materials, absolutely the best of everything, including Krupp and Chrome Nickel Steels. Hess-Bright imported ball bearings. Tires, Q. D.,34x4. Wheel base, 112 in. Weight, 2100 lbs. Equipment, complete and high-class. Bodies, Sheet Metal. Touring Car seats five; Suburban (detachable tonneau) seats four; Roadster seats two. Also Coupe or Limousine Town Car.

Marmon "Fifty" (Seven Passengers), $3,750.

Nordyke & Marmon Co. (Estab. 1851) Indianapolis, Ind.

Standard Mfrs. A. M. C. M. A.

The Easiest Riding Car In The World



STEPNEY

SPARE WHEEL

Every motorist should carry a "Stepney" and avoid all troublesome delays caused by punctures and blowouts. Write for Catalogue D.

The Only Cure for Tire Troubles

DISTRIBUTORS—AMERICAN STEPNEY SPARE WHEEL CO., 1773 Broadway, New York City. AUTO SPARE WHEEL CO., 22d, Oak and Gillham Blvd., Kansas City, Mo. EXCELSIOR SUPPLY CO., 1436 Michigan Ave., Chicago, Ill.

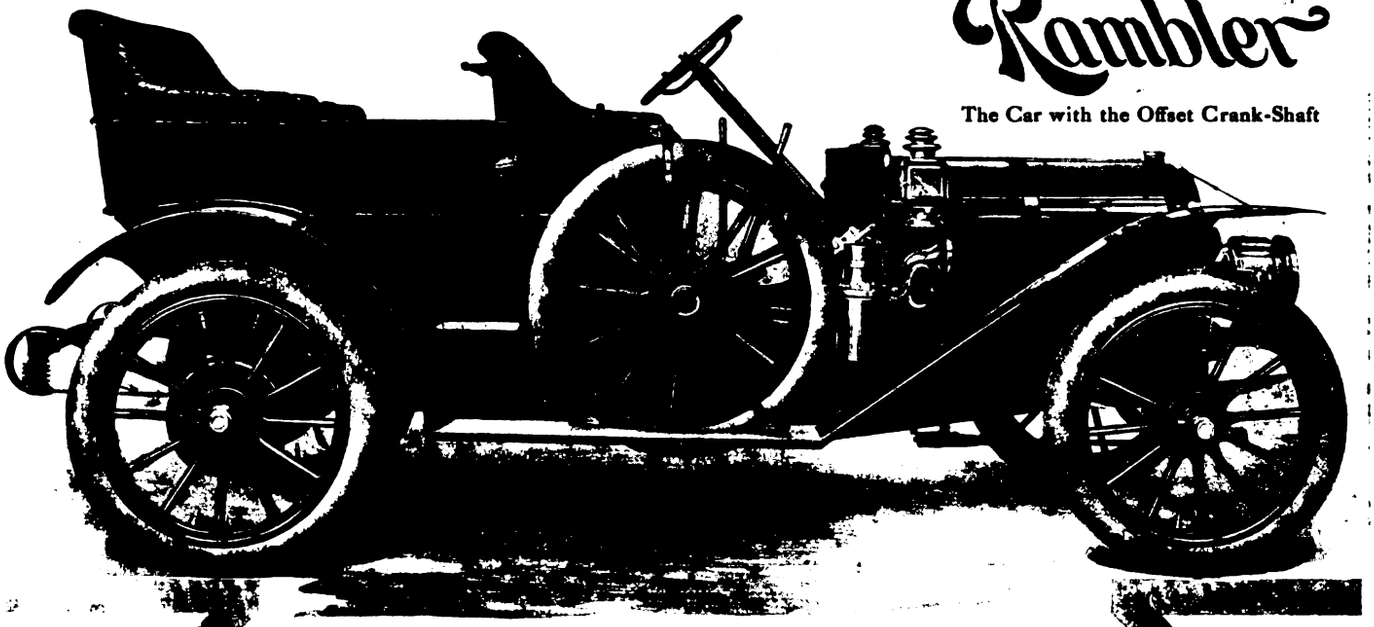
Model B—Brush Runabout

A CAR OF SIMPLE DESIGN MADE WELL
NOT A COMPLICATED DESIGN MADE CHEAPLY

Its records and the opinions of its users speak more loudly than self praise. Agencies for 1909 are being closed rapidly. Much good territory still open.

BRUSH RUNABOUT COMPANY, Detroit, Mich.

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Rambler

The Car with the Offset Crank-Shaft

Model Forty-four, 34 H. P. $2,250.

Spare Wheel, with Inflated Tire, Brackets, and Tools, $74. Magneto, $150.

The Rambler Spare Wheel

Have you ever had to stop on the road to repair a punctured tire when you were in a hurry to reach your destination?

All 1909 four-cylinder Ramblers are fitted for the Rambler Spare Wheel, a wheel complete, excepting hub center, with an inflated tire. Can be substituted for front or rear wheels within three minutes' time. Only six nuts to remove—done quickly with special tools provided.

Completely obviates all tire worries; makes punctures mere incidents of a trip and saves the tiresome task of pumping up the new tire. The price of the Rambler Spare Wheel complete is $74 or $85, according to tire size.

Write for catalog describing in detail Rambler offset crank-shaft, straight-line drive, and other exclusive Rambler features.

Seven-passenger model, 45 horsepower, $2,500. Other models, $1,150 to $2,500

Thomas B. Jeffery & Company

Main Office and Factory, Kenosha, Wisconsin

Branches and Distributing Agencies

Chicago, Milwaukee, Cleveland, Boston, New York, San Francisco. Representatives in all leading cities

THE CAR OF STEADY SERVICE

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, February 25, 1909. No. 22

RECEIVERSHIP FOR OSCAR LEAR

Petition is Filed by a Stockholder—Assets are Said Greatly to Exceed the Liabilities.

A receiver has been appointed for the Oscar Lear Automobile Co., of Springfield, O., in accordance with a petition filed on the 18th inst., by Harry C. Downey, a stockholder, on behalf of the other stockholders. The action is stated to be the result of the failure of the company in its efforts to increase its operating capital to a point commensurate with its business. The total indebtedness of the concern is given as $144,140, while the assets are estimated at $308,000. The company moved from Columbus, O., to Springfield in the summer of 1907, and was then reorganized with $300,000 capital stock. In addition to producing Frayer-Miller automobiles it has latterly devoted considerable attention to commercial vehicles, a field in which it has met with considerable success.

"We have been realizing for some time," said Oscar Lear, in connection with the receivership proceedings, "that the capital of our company was inadequate, and owing to some pressing claims we have found it necessary to ask the protection of the court, feeling confident that this would be merely a temporary measure, and that in this way the additional capital needed might be secured under advantageous terms."

Grossman Heads a New Company.

Emil Grossman, prominent in the trade through his interests in the National Sales Corporation and the Motor Car Equipment Co., of New York City, has organized a new corporation, capitalized at $100,000, to be known as the Emil Grossman Co., of which he will be the president. The company's chief products for the immediate future will be wind shields and spark plugs, the latter being made in both the porcelain and mica types. In connection with the wind shields a new hydraulic controlling device will be disclosed, arranged to prevent the folding section of the shields from dropping too suddenly if accidentally released when being turned down, although the company will also make a model with spiral spring control.

American Distributing Moves.

The American Distributing Co. moves on March 1st from Cleveland, O., to 207 West South street, Indianapolis, Ind. It will act as exclusive sales managers for the following concerns: The Westinghouse Electric & Mfg. Co., Pittsburg, Pa.; The Hayes Wheel Co., Jackson, Mich.; The Lewis Spring & Axle Co., Jackson, Mich.; The Jackson Drop Forging Co., Jackson, Mich.; The American Gear & Mfg. Co., Indianapolis, Ind.; The Elyria Machine Parts Co., Elyria, O.; The Kinsler-Bennett Co., Hartford, Conn.; and the Sparks-Withington Co., Jackson, Mich.

Pneu L'Electric Alleged Insolvent.

A petition in bankruptcy was filed Wednesday, 24th inst., against the Pneu L'Electric Co., which has been making carburetters at 238 West 108th street and selling tires and carburetters at 1610 Broadway, New York City. The petitioning creditors lent money to the concern and now declare it to be insolvent.

Kirk Joins Forces with Houpt.

The W. S. Reed Co. has been organized in Massillon, O., for the manufacture of automobiles. The machines as planned are to be six cylinder roadsters of high power, and a demonstrating model is being completed in a temporary shop in West Tremont street.

Reed to Make Roadsters.

Ezra E. Kirk, of Toledo, O., who has been conspicuously identified with the automobile industry almost from the start, has become financially interested with Harry S. Houpt and will become the western sales manager for the Herreshoff and Houpt cars. His headquarters will be in Detroit, Mich.

ARNSTEIN DECLARED BANKRUPT

Chicago Jobber Put into Receiver's Hands by Trade Creditors—A Veteran in the Field.

Involuntary bankruptcy proceedings have been brought against Eugene Arnstein, one of Chicago's oldest and best known jobbers in motor car supplies, and, as a result, the business has been placed in the hands of a receiver. The petition was filed on the 18th inst., by William A. Rogan, acting as attorney for a group of unsecured trade creditors, whose claims are stated to aggregate in the neighborhood of $40,000.

Following the filing of the petition, the American Trust & Savings Bank, of Chicago, was appointed by the court to act in the capacity of receiver, and it was at once put in custody of all the assets. No estimates are offered as yet either as to the total of the liabilities or of the assets, but the work of taking an inventory has already been begun with a view to making early schedules of both.

Because Arnstein is a recognized veteran among the wholesalers, the failure comes as a surprise to those of the trade not intimately in touch with the trend of the jobber's financial affairs. For many years devoted to the jobbing of bicycle goods and enjoying a wide patronage, the business added automobile accessories and supplies to its lines when the use of motor cars developed this field, and while not as conspicuous in trade activities as in former years, was regarded as substantial.

Homer the Home of the Homer.

Homer, Mich., is to have a motor car factory, the Homer Auto Truck Co. having been formed to manufacture automobile trucks, drays, delivery wagons and pleasure vehicles. The principal stockholders include Earl J. Fellows, C. L. Lenn, W. H. Courtright, Frank Mount and Charles R. Church.

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In the Retail World.

Harry H. Mundy has been appointed Buick manager at Utica, N. Y. The offices and salesroom of the Utica branch are at 231 Genesee street.

Frank L. Apgar, for some years connected with the Motor Car Co. of New Jersey, has become New Jersey State manager for Fiat cars. He will shortly establish headquarters in Newark.

The Ford Sales Co. has prepared for business in Utica, N. Y. Its new salesroom was opened this week at 65-67 Columbia street, in the big double store of the Blasier building.

The Samoset Garage & Transportation Co. has been organized in Plymouth, Mass., and will shortly open a salesroom and garage. Eugene H. Dorr is president and James W. Cooper, treasurer.

The Countryman Automobile Co. is a new sales organization in Minneapolis, Minn., and it will handle the Halladay line. A location has been taken at 108 Tenth street, S., in the Paulman motor buildings.

At Spirit Lake, Iowa, a partnership for the automobile business has been formed by Adrian Hurd and John W. Hartman. They will have a garage on the lot east of the Hotel Milo, and will handle Reo cars.

Frank S. Corlew and H. C. Kilbourne have formed the Kilbourne-Corlew Motor Co., to handle the Velie in Boston and elsewhere in New England. The headquarters of the company will be at 26-28 Bowker street.

F. Shirley Boyd, New England representative for supplementary spiral springs, and H. T. Brown, agent for Dow tires and tubes, have changed their location in Boston, Mass. They have moved from 880 Boylston street to a new store at 893 Boylston street.

The Metropolitan Garage, at Seventy-seventh street and Broadway, New York City, was purchased on February first by the Monarch Motor Co., which will operate it as a high class storage establishment. It is announced that the garage will be made one of the largest and finest in Manhattan.

The Stoughton-Folkins Co. have opened a garage in Portland, Me., occupying the ground floor of a large building on Oak street, long noted as a big stable. It has been provided with a concrete floor and has been remodeled completely, now containing a fine show room, office, lounging room for chauffeurs and other convenient apartments. A repair shop has been fitted up in a thorough style. The firm will handle the Maxwell.

Harold Brinker, one of Denver's daring road drivers, has decided to cash in one some of his fame by going into the automobile business for himself. In partnership with B. G. Vreeland he has formed the Brinker-Vreeland Automobile Co., which will have its readquarters in the front part of the ground floor of the Denver Omnibus and Cab Co.'s big garage at 1627 Court place, where Matheson, Moon and Rauch & Lang cars will be handled.

In order to meet the growth of its business in Boston, the Goodyear Tire & Rubber Co. has secured for its own exclusive occupancy the five story building at 669 Boylston street. It has a ground area of 24x90 feet, and is to be remodeled from the basement up, the new conveniences including electric elevators. The salesrooms and general offices will be made very attractive. On the completion of the alterations, about May 1, the Boston branch will be transferred from its present location at 261 Dartmouth street. William T. Teagan is the company's local manager.

Death of Rossell Drisko.

Rossell Drisko, manager of the Boston branch of the Jones Speedometer, died at his home in Jamaica Plain, Mass., on the 17th inst. His death is ascribed to a severe cold said to have been contracted during the Madison Square Garden automobile show in New York, which in connection with heart trouble, induced fatal complications. He was 28 years old and had been prominent in Boston automobile circles for several years. A widow survives him.

Bassette Resigns from Corbin.

Buel B. Bassette is announced as having tendered his resignation as secretary of the Corbin Motor Vehicle Corporation, of New Britain, Conn., and further changes in the company's organization are intimated. His resignation takes effect in March, when he will become connected with another manufacturing concern.

Stewart Speedometer in Detroit.

C. E. Brelsford has been appointed manager at Detroit, Mich., for the Stewart & Clark Mfg. Co., of Chicago, Ill. An office has been opened at 697 Woodward avenue, from which the local trade and all the automobile manufacturers in Michigan will be supplied with the Stewart speedometers and specialties.

Ford Gives Harper New Duties.

H. B. Harper, advertising manager of the Ford Motor Co., Detroit, Mich., has assumed new duties. He is now assistant commercial manager of the company, working in conjunction with Commercial Manager Hawkins.

Hopkins Goes to the Centaur.

L. A. Hopkins, formerly sales manager of the St. Louis Car Co., at New York City, has become the sales manager of the Centaur Motor Co., of Buffalo, N. Y. He will have his headquarters in the latter city.

Clinton and Bergdoll in New Positions.

Harry T. Clinton has been made manager of the Chicago branch of the Fiat Import Co. In leaving Philadelphia he has placed the Fiat agency with Louis J. Bergdoll.

The Week's Incorporations.

Chicago, Ill.—Emery Motor Livery Co., under Illinois laws, with $50,000 capital. Corporators—W. W. Dixon, A. Lindhelm and W. S. Jameson.

Detroit, Mich.—Taxicab Co., The, under Michigan laws, with $5,000 capital. Corporators—Frank E. Robson, Irwin S. Scrimger and Ransom G. George.

Greeley, Colo.—Greeley Automobile Co., under Colorado laws, with $10,000 capital. Corporators—L. C. Vanderlip, W. T. Lynn, W. D. Mancher and F. E. Reinks.

Salt Lake City, Utah—Oldsmobile Company of Utah, under Utah laws, with $10,000 capital. Corporators—J. H. Garrett, A. O. Treganza and Fred Strouse.

Jersey City, N. J.—Bruns, Kimball & Co., under New Jersey laws, with $35,000 capital; to deal in and repair motors, etc. Corporators—W. Bruns, C. C. Kimball and M. C. Kimball.

Cleveland, O.—Charles B. Shanks Co., under Ohio laws, with $5,000 capital; automobile agency. Corporators—R. H. Williams, C. A. Burk, L. M. Henders, J. A. Burk and C. A. Aaron.

Mineola, L. I.—Automobile Building Co., under New York laws, with $100,000 capital. Corporators—William Willett, Jr., H. H. Frost and F. E. Malone, of New York City, and Rhoda Miller, of Jamaica.

Minneapolis, Minn.—Countryman Automobile Co., The, under Minnesota laws, with $25,000 capital; to deal in motor cars. Corporators—George H. Countryman, O. W. Howe, P. O. Heide, H. N. Stabeck and F. O. Gold.

Trenton, N. J.—Mitchell Sales Co., under New Jersey laws, with $50,000 capital; to deal in and manufacture automobiles. Corporators—Frank L. C. Martin, Plainfield; Clarence B. Ackers and John W. Mosher, Trenton.

Buffalo, N. Y.—Auto-Car Manufacturing Co., under New York laws, with $250,000 capital. Corporators—John B. Pierce, Chicago, Ill.; George W. Atterbury, George D. Pratt, Edward B. Green and George H. Frost, Buffalo, N. Y.

Suffolk, Va.—Parker Manufacturing Co., under Virginia laws, with $50,000 capital; to deal in and repair automobiles. Corporators—B. E. Parker, president, Franklin, Va.; J. W. Weitzell, secretary, Richmond; G. W. Nurney, Suffolk.

New York City, N. Y.—Overbaugh-Martin Motor Car Co., under New York laws, with $50,000 capital; to manufacture automobiles, etc. Corporators—D. C. Overbaugh, Nyack; A. L. Martin and R. H. Overbaugh, New York City.

Cincinnati, O.—Cincinnati and Munroe Automobile Co., The, under Ohio laws, with $4,500 capital; to operate buses between Cincinnati and Munroe, O. Corporators—L. H. Bunnell, Frank Williamson, A. T. Smith, J. H. Sigg and C. M. Robinson.

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BONDHOLDERS WANT E. V. CLAIMS

They Offer 25 Cents on the Dollar to Merchandise Creditors—Figures Upon Which the Offer is Based.

Merchandise creditors of the Electric Vehicle Co., of Hartford, Conn., which has for some time been in the receivers' hands, are being offered 25 cents on the dollar for their claims by the bondholders of the company, the latter presenting a showing of the concern's liabilities to indicate the advisability of acceptance. As agent for the bondholders, C. Wendell Woodward, of Philadelphia, Pa., makes the following statement:

"A careful examination of the condition of the property at the present time indicates that under foreclosure of the mortgage a sum will be realized from the sale sufficient to pay only a small part of the bond issue, and that, therefore, the bondholders will become entitled to share in the distribution of the remaining assets with the unsecured creditors. Under these circumstances if the foreclosure suit and the receivership proceed to the final decree, the net amount realized will not (probably) pay the general creditors more than 15 cents on the dollar, if so much."

In support of these conclusions, the records of the indebtedness of the company are submitted, showing that of the total bond issue of $2,250,000, the amount of bonds sold is $1,521,000 and the amount deposited as collateral is $729,000. The total merchandise claims are given as approximately $274,469.76, subject to increase with later claims that may be proved, while the outstanding obligations, including money borrowed on notes, interest on bonds, etc., is stated to be $551,928.41, making a total of $3,076,398.17, including the bond indebtedness. It is stated that the bondholders propose the suggested settlement with the merchandise creditors to avoid the loss likely to result from a forced sale of the assets.

Jeffery Plans Mammoth Factory.

So great are both the present volume of business and the prospects for the future, that Thomas B. Jeffery & Co., of Kenosha, Wis., have planned what is declared will be the largest automobile factory in the world, and contracts will shortly be let for four new factory buildings, one of which will have a greater floor space than the Chicago Coliseum. This enormous structure will be devoted to the inspection and exterior finishing department, and will measure 386 feet square. Another of the buildings will be devoted to laboratory purposes and will have an installation of the most complete available equipment for the testing of the material used in the construction of Rambler cars and for the making of analyses of metals. A new office building will be erected, while additions will also be made to the already large machine shops. The present plant of the company occupies an area approximating 600.000 square feet, and the additions, it is stated, will put it in a class by itself as to size.

Washington Cab Chauffeurs Strike.

Protesting against a change in the wage scale and the basis of payment, about 50 drivers for the Terminal Taxicab Co., of Washington, D. C., went on a strike last week, and have declared their intention of holding out until the old system is restored. The new wage system provides for 20 per cent. of the gross receipts from each taximeter cab, with a charge to the drivers for gasolene, while under the old system they received 20 cents per hour, and were supplied with fuel without charge. The men claim that the change would cut their earnings almost in half. New drivers to replace the strikers are being secured.

Dunlop Invades the Far East.

The Dunlop Tire Co. is reaching out for Oriental trade through the medium of the Dunlop Rubber Co. (Far East) Ltd. which just has been organized with £80,000 capital and which is given the right to import and manufacture tires and other goods bearing the name Dunlop, in Japan and other parts of Asia east of Burma. The parent company in England will hold £25,000 of stock in the new concern and always will have one director on its board.

Logan Creditors to Consider an Offer.

Creditors of the bankrupt Logan Construction Co., of Chillicothe, O., have been called to a general meeting on March 8, at the office of Elijah Cutright, Jr., the referee in bankruptcy, to consider whether an offer of $16,250 for the physical property of the company should be accepted by the trustee. The offer would yield less than 75 per cent. of the appraised value, but is the best that has so far been received.

First Dividend for Dolson Creditors.

Checks for a first dividend of 10 per cent. to the creditors of the bankrupt Dolson Automobile Co., of Charlotte, Mich., were mailed this week. The concern failed about a year ago, but the receivers have just succeeded in converting part of the assets into cash available for payment on the claims.

More Room for Hartford Parts.

Larger manufacturing space has been secured by the Hartford Auto Parts Co., of Hartford, Conn., made necessary by the increased demands of its business. The west wing of Colt's Patent Fire Arms factory, at 80 Huyshope avenue, has been taken and the process of removal is being effected.

Taximeter Cabs for Springfield.

Taximeter cabs are promised for Springfield, Mass. The project is backed by H. C. Spear, who has been in the automobile renting business for some time.

APPRAISAL OF IMPORTED TIRES

Must Pay Duty as Parts of Machine with Which Entered—So Federal Court of Appeals Decides.

After a bitter fight by the importers, the tires shipped with automobiles for entry into the United States again have been held to be parts of the complete machines and subject to 45 per cent. duty as "manufactures of metal," instead of the 35 per cent. assessed on rubber goods. A decision to this effect was handed down on the 18th inst., in the United States Circuit Court of Appeals, sitting in New York City, the case having come on appeal from the decision of the United States Circuit Court, which held that the automobiles and the tires when imported together are entireties.

The appeal was taken by the Auto Import Co., of New York City, but the case is of large interest as affecting most of the importers of foreign cars, who are anxious for the granting of the lower duty on the tires that come with their machines. Judges Lacombe, Ward and Noyes constituted the court, which was divided as to the decision. Judge Lacombe wrote the majority decision, which is coincided in by Justice Ward, while Judge Noyes, in a dissenting opinion, takes the view of the importers and indicates that the tires and automobiles should be classified for duty separately.

The sole question before the court was whether the tires and machines are entireties, or subject to separate duty, the automobiles at 45 per cent. as "manufactures of metal," and the tires at the appropriate rate accruing on India rubber. The majority decision holds them to be entireties, while Judge Noyes files a dissenting opinion in which he says:

"I cannot agree that rubber tires should be assessed as manufactures of metal merely because they are imported in a crate with an automobile upon the wheels of which they never have been, and it is wholly problematical whether they ever will be placed."

Panhard Becomes Its Own Landlord.

Giving evidence of its permanence in the automobile business of New York City, the Panhard & Levassor Co. has purchased outright the four-story garage building at the northwest corner of Broadway and Sixty-second street, built about four years ago and which the company has occupied under lease. The price paid is understood to be close to $300,000 cash.

Winton Sails for England.

Alexander Winton, president of the Winton Motor Carriage Co., of Cleveland, O., accompanied by Mrs. Winton, sailed from New York on the Lusitania on the 15th inst. He will make a six weeks' visit to England and Scotland.

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THE SIMPLICITY OF THE
WHITE STEAM GENERATOR

THE WHITE generator may be described as the fundamental distinguishing feature of the White Steam Car. No other steam automobile, or in fact, no other steam power plant is, or ever was, provided with such a device. As there are still some people who believe that the White generator in some way resembles the ordinary boiler, we should like to state most emphatically that there is no point of resemblance between the two, except that they both perform the function of converting water into steam. The essential points of difference between the two may be summarized as follows:

1. In the White generator, the water is at the top and the steam at the bottom. In the ordinary boiler, the water is at the bottom and the steam at the top.

2. In the White generator, the relative amount of water and of steam is not at all important. In the ordinary boiler, it is necessary that the water be kept at a certain definite level.

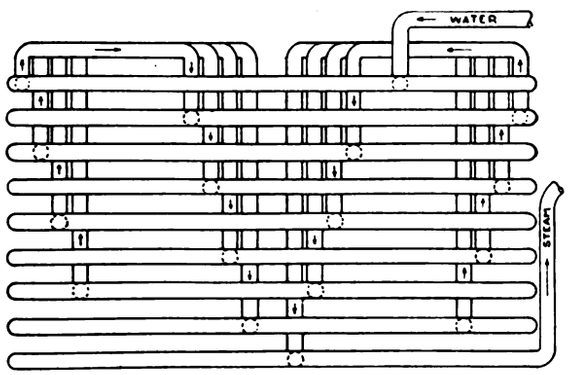


DIAGRAM SHOWING THE CIRCULATION THROUGH THE WHITE GENERATOR



THE WHITE GENERATOR

3. The White generator contains only a very little water and steam at any given time. The ordinary boiler contains great quantities of both.

4. With the White generator, a full pressure of steam may be obtained in a very few minutes. In the ordinary boiler considerable time is necessary to obtain full steam pressure.

5. The White generator has only twelve joints. The ordinary boiler has several hundred joints and the boilers in some of the early steam automobiles had several thousand joints.

6. The joints in the White generator are at the top, where they are not subjected to very much heat. In the ordinary boiler, about one-half of the joints are exposed to the hottest part of the fire.

7. The joints in the White generator are much stronger than it is possible to make them in the ordinary boiler.

8. In the White generator, the water must enter the coldest part and be forced gradually to the hottest part. In the ordinary boiler, if the water level is allowed to run low, the entering water comes into contact at once with the hottest parts of the boiler.

Write for catalog.

THE WHITE COMPANY

CLEVELAND, OHIO

NEW YORK CITY, Broadway at 62d St.
BOSTON, 320 Newbury St.
PHILADELPHIA, 629-33 N. Broad St.

PITTSBURG, 138-48 Beatty St.
CLEVELAND, 407 Rockwell Ave.

CHICAGO, 240 Michigan Ave.
SAN FRANCISCO, Market St. at Van Ness Ave.
ATLANTA, 120-122 Marietta St.

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NEW YORK, FEBRUARY 25, 1909.

What "Local" Shows Accomplish.

In the rapid growth of the small shows, both as conducted privately by automobile agencies and on the club plan, as it were, by the various local organizations of manufacturers and dealers; there is food for considerable reflection and gratulation. The time is well past when one, two or even three shows of national importance could be expected to reach even a significant proportion of the masses which the show propaganda was originally intended to influence. Not even the huge and impressive bulk and glitter of the big shows can draw the actual buyer as successfully and multitudinously as a show of comparatively limited extent brought to his very door and staged in a way to suit his tastes. Furthermore, as the manufacturers are coming more and more to cater to definite classes of buyers, they are learning to concentrate their energies upon only such localities as seem likely to yield paying results. The national shows taking care of such of the agency business as is not entirely disposed of before the market of the year's product is well under way, it only remains for the maker to throw his forces into such local shows as appear to be in fertile territories.

Here, directly guided by the agents who are thoroughly familiar with local tastes and tendencies, actual results are produced which can be reckoned up in dollars and cents of good profit. Another point which argues well for the local show is the fact that being on a more or less limited scale, no such elaboration of display is necessitated as is generally called forth by the larger shows. Hence, many of the exhibits which have already done duty at New York or Chicago, for example, find their way about the country, serving their purpose for several months in succession. Whereby their value is considerably increased, and their actual cost proportionately distributed. It should be added that the amount of general publicity which is obtained for the industry at large also is considerably increased by the same means.

The Lure of Cut Prices.

To the automobile agent comes frequently the temptation of yielding to the allurements of dealers in bargains of various sorts who advertise in artful fashion either "the same thing" as standard products, or the deadly substitute, at prices so very attractive as in themselves to cause suspicion at the very outset. Most frequently the temptation assumes the form of a catalog in which are offered many of the wares that the garage and supply man may have a market for, frequently offered as new and of recent pattern, and always represented as being equal to standard goods in every respect save that of price. Unfortunately it sometimes happens that the dealer is not well enough versed in the principles of merchandising to appreciate the fact that this last exception must carry with it others which do not appear on the surface. In fact, exceptions to this rule of exception must be rare indeed and hard to find.

Interested at numerous reports which reached his main office from various outposts as to the prevalence of concerns offering mail order prices on goods much in demand and alleged to be up to the mark in every other particular, one well known manufacturer recently was fain to make an investigation on his own account. The result as announced in his house organ is to the effect that many of the parts offered actually were those discarded by himself and other makers, because of unsuitability or through becoming obsolete. Overstocks of parts and accessories, with makers and dealers alike, as a matter of fact, form attractive bait for numerous impostors who trade more or less upon misrepresentation. Such stocks, bought in at a low figure often are disposed of to good advantage from the profit standpoint by virtue of cautious and misleading use of the names of the very interests which have disposed of them.

The rapid multiplication of houses which deal in questionable offerings of the sort as well as the fact that their practices have come back to the very door of the manufacturer in many instances through the heedlessness of his agents, points to the necessity of extreme caution in dealing with firms which are not well-known to the buyer. Agents and supplymen who are thoroughly alive to their own interests and to the possibilities of the market have had no difficulty in keeping alive up to this time, nor is there indication that they will be caused to suffer through suppression of their profits if they continue to deal with the open and above board sections of the market. Cut price catalogs always will hold an attraction for the individual buyer, both as a class, and as an individual, for at least one complete cycle comprising the purchase and attempted use of inferior goods. But the dealer should learn to avoid opportunities which hold forth glittering promise of a disproportionate return for a given amount of outlay.

Producer Gas Possibilities.

Because of the rapid advances which are being made in the development of the gas producer in large powers, and in the installation of high-duty power plants employing internal combustion motors fed by producers, it is natural to infer that the future of the motor vehicle may hold some measure of service for this type of generator. Indeed, its application successfully to marine propulsion, not to mention a few spasmodic attempts at introducing it into commercial vehicle service, would seem to lend color to the impression where the difficulties incident upon its operation are not fully understood. At the same time, circumstances peculiar to the operation of the suction type of producer, which is the only kind which appears to lend itself to small powers, are such as to make it appear that its applica-

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tion to vehicular propulsion, if possible at all, can come only after long years of study and improvement.

These difficulties, as voiced recently by a gas engineer, himself a builder of both stationary producer and automobile engines, hinge about the construction of the generating chamber and the necessity of rendering it at once air-tight and impervious to heat. Incidentally also, present methods of construction are such as to make a successful producer altogether too heavy to be available for auto propulsive purposes except on a very large scale. Thus, where it may be successful as applied to the new British battleship, the specifications for which were announced this week, for example, its use in smaller units on a land-going vehicle would be totally out of the question.

Briefly the principle of the suction producer is that of inducing a sharp blast of mingled steam and air to pass through a bed of incandescent coke or coal from which by a process of successive reactions the producer gas is formed, which is mainly carbon monoxide. This is at once passed to the internal combustion engine where it is used in exactly the same way that the ordinary gasolene vapor is employed. In the suction producer, the suction of the engine in drawing in its charges, supplies the necessary draught for the producer, while the waste heat of the producer itself is utilized in the production of the steam necessary for the process. In this way the apparatus may be made comparatively simple and requires little of no attention even when operated for many hours in succession. Its success, however, depends among other things, upon the retention of the proper degree of heat in the fuel bed within the producer—which may be somewhere about 1,800 degrees Fahrenheit—and upon the exclusion of air from the system, from the main air inlet clear through to the inlet valves of the engine. These requirements, in a word, are thought to spell the exclusion of the suction producer from the automobile field.

In order to retain the heat of the fuel bed and also to prevent excessive radiation and heat loss, it is customary to use a heavy fire-brick lining for the fire chamber of the producer: Besides adding a very considerable increment of weight to the apparatus, this material is so brittle and unreliable even in stationary practice, that it is little likely that it could be made to withstand the severe vibration of the motor vehicle without disintegrating. Further, it is found difficult to prevent air leaks at times, even with a stationary plant operating under the best of conditions, the effect of such leaks, if in the producer itself, being to lower the temperature and alter the action of the producer, if not to check the production of the gas altogether, even causing complete combustion to take place within the fire chamber, thus destroying the purpose of the apparatus entirely; while the introduction of air into the system at any point between the producer and the engine, naturally tends to weaken the suction and so to reduce the efficiency of the apparatus.

In consequence of these difficulties, and pending the production of a system which shall involve less exacting requirements in the formation of the gas, it may be considered that the producer system is hardly feasible, even in the instance of heavy vehicle service, which is the only connection in which it has as yet been experimented with, so far as is known. Its advantage, of course, lies in its ability to use coal, coke, or even some of the low grade fuels directly, instead of requiring that they be subjected to any of the intermediary processes of distillation, such as commonly are employed in the production of benzol or the other coal derivatives. Such investigations, however, now appear to hold little encouragement for the experimenter.

The way to encourage sport is to make its promotion as inexpensive as possible, which means merely nominal sanction fees. The A. A. A.'s new tariff will do no more to encourage the sport in those small places where encouragement is so much to be desired than did its former schedule. Fancy a small club paying $50 for the privilege of conducting a modest hill climbing contest! "We need the money" is written all over the A. A. A. tariff.

"Men who live in glass houses should not throw stones," is an old proverb which the outward and visible sign of the Florida speed carnival should take to heart. If he believes that a new rule is admirable he should accept it without shuffling or stone-throwing, else there may be those who will question that he believes what he says.

So the New York lady who so long has been the press agents' delight, broke the "women's record" at New Orleans! Lovely! But when will the A. A. A. put its foot down on that sort of thing?

COMING EVENTS

February 20-27, Newark, N. J.—New Jersey Automobile Trade Association's show.

February 20-27, Hartford, Conn.—Automobile Dealers Association's show.

February 22-27, Portland, Me.—Automobile show.

February 24-27, Baltimore, Md.—Automobile Club of Maryland's show, Fifth Regiment Armory.

March 1-6, Buffalo, N. Y.—Buffalo Automobile Club's 7th annual show, Convention Hall.

March 1-6, Providence, R. I.—Automobile show.

March 2-6, Rochester, N. Y.—Automobile and Motor Trades Association of Rochester show, Convention Hall.

March 3-6, Lincoln, Neb.—Second annual automobile show, Auditorium building.

March 6-13, Boston, Mass.—Boston Automobile Dealers Association (Inc.) seventh annual show, Mechanics Building.

March 8-13, Kansas City, Mo.—Kansas City Automobile Dealers Association's show, Convention Hall.

March 8-13, Portland, Ore.—Portland Automobile Club's show.

March 10-13, Memphis, Tenn.—Automobile show, Auditorium building.

March 11, 12, 13, Milwaukee, Wis.—Milwaukee Automobile Club's first annual show in the Hippodrome.

March 13-20, Minneapolis, Minn.—Minneapolis Automobile Show Association's show, National Guard Armory.

March 15-20, Rochester, N. Y.—Rochester Automobile Dealers Association's show, Convention Hall.

March 16, 17, 18, Chattanooga, Tenn.—Three days race meet and hill climb on Lookout mountain.

March 17-18-19, Pittsburg, Pa.—Three days' endurance run.

March 22-27, Toledo, O.—Toledo Automobile Dealers Association's automobile show.

March 23-26, Daytona, Fla.—The Motor Contest Association's (Inc.) seventh annual international races, Daytona Beach.

March 24-27, Syracuse, N. Y.—Syracuse Automobile Dealers Association's first annual show, New York State armory.

March 27-April 3, Pittsburg, Pa.—Automobile Dealers Association's show, Duquesne Garden.

April 10, New York City—New York Automobile Trade Association's second semi-annual hill climb on Fort George hill.

April 15-17, Louisville, Ky.—Louisville Automobile Association's show, Coliseum.

May 22, Hartford, Conn.—Automobile Club of Hartford's 200 miles endurance run.

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NEWARK GOES TO HER OWN SHOW

About 100 Cars Staged Make a Representative Display—Neat Decorative Scheme and Variety of Entertainment.

It only costs a quarter to ride on the steam railroad from Newark, N. J., to New York City and back, while if one be a commuter with a "family," 60-trip ticket, it costs even less. So when the big automobile shows were held at the Palace and the Garden, respectively, in Manhattan, it would have been reasonable to suppose that everybody in Newark whose thoughts inclined toward motor cars would be on hand to select their machines at that time if at all. But like the fair ocean liner passenger with the very white face who on the first day out

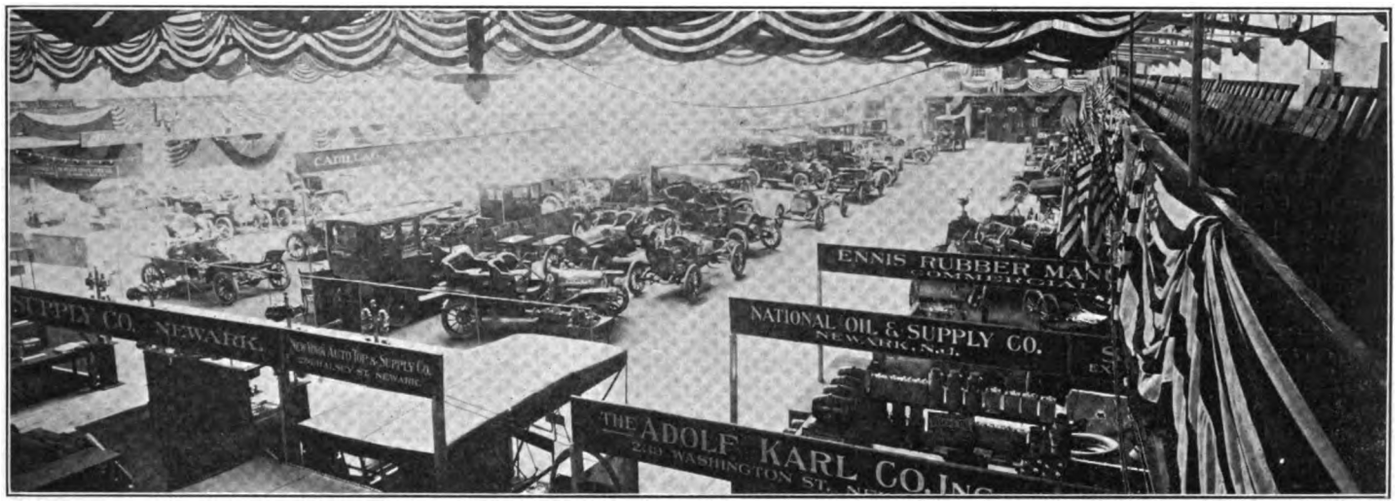


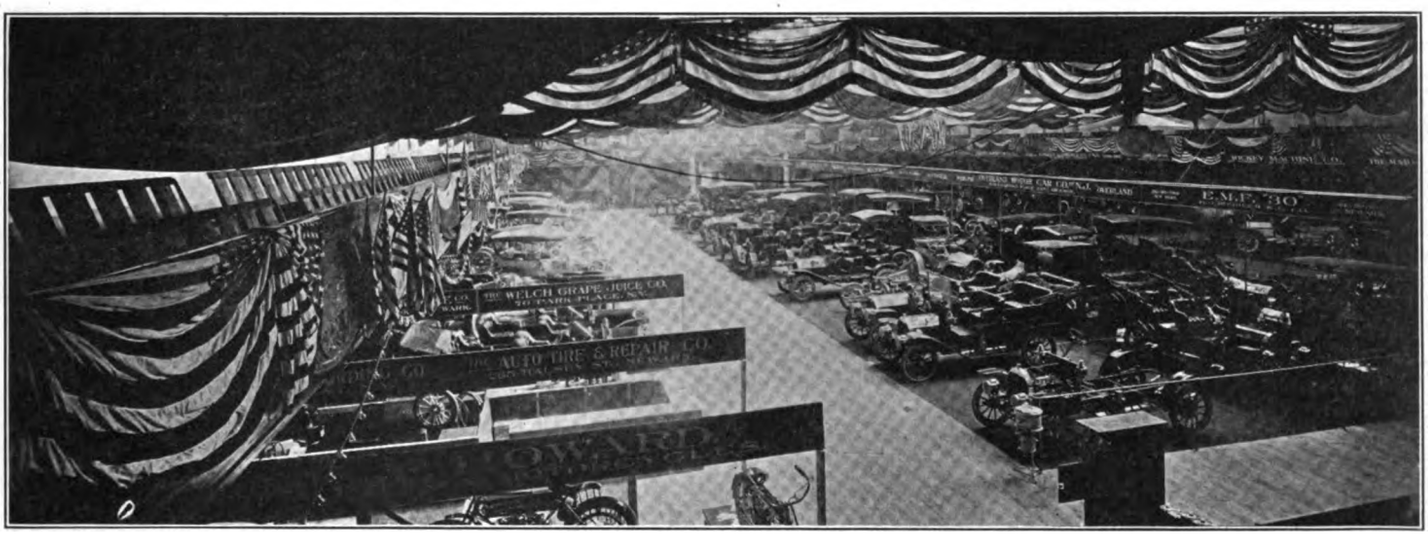
ONE OF THE DECORATIVE DETAILS AT THE NEWARK SHOW

cars, but the true citizens have played mountain to the automobile show's Mohammed and which continues through this week. Being new within the year and providing plenty of space, the armory makes an excellent exhibition hall.

In addition to the gold cup Grand Prize trophy, some model airships and areoplanes and a free moving picture show of the famous automobile races of the past year, features contributing to the general wonder and delectation of the crowds, the exhibition is strong in its appeal by reason of the great number and variety of cars that are displayed, products of representative makers. There are almost 100 cars on view, which is immensely above the average for what are known as "local" shows, as distinguished from the national shows at New York, Chicago and Boston.

A simple scheme is used in the decorations, but the neatness of the signs and the gay display of the red, white and blue bunting overhead, as revealed in the accompanying illustrations, affords a very satisfactory effect, while really giving the cars themselves a chance to reveal what color and decorative beauties they may have. By some miscalculation, the electric lighting





TWO GENERAL VIEWS OF THE NEWARK SHOW

was asked if she had lunched—it is a case of "Quite the contrary!"

Some near-Newarkers, like Frank Kramer, the bicycle sprint champion, sneaked over to the New York affair this time and bought and have waited for the exhibition to be brought to them. Furthermore, they get an extremely good show, too, as is proved by the affair which opened Saturday night, 20th inst., in the new Essex Troop armory,

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on the opening night was not quite as effective as it should have been, and when at times some of the lights were turned off to give the moving pictures a chance to be seen, there were sarcastic exhibitors who requested that the picture outfit be allowed to run all the time as the reflected light from the screen seemed to give more illumination than the half-size incandescent bulbs. Improvements in this respect were made later, however, by the installation of additional lights of greater power.

Not alone Newark dealers, but several firms from New York City, have exhibition spaces for cars, while the accessory people are from everywhere. Following the fashion of the larger shows, there is the customary amount of expanded representation both as to attendance and as to the amount of business done.

The exhibition, which is a "second annual," is given under the auspices of the New Jersey Automobile Trade Association, to which the Associated Automobile Clubs of New Jersey are giving co-operation. The direct management is under H. A. Bonnell, with G. H. Raddin as his assistant. The complete list of exhibitors is as follows:

Automobiles: Atlantic Motor Car Co., Stoddard-Dayton; Brush-McLaren Motor Co., Brush; Cordner, Flinn & Toppin, Acme; Crawford Auto Co., Crawford; Dunham & Son, D. B., automobile bodies; Ellis Motor Car Co., Pierce-Arrow; Essex Auto Co., Ford and Jackson; Fiat Auto Co., Fiat; Greene Motor Car Co., Locomobile; Johnston Co., P. H., Regal and Grout; Koehler, H. J., E-M-F.; Martin Auto Co., F. C. L., Mitchell; Mason, J. W., Maxwell; Middleby Auto Co., Middleby; Motor Car Co. of New Jersey, Cadillac; O'Neil Motor Car Co., Premier and Reo; Oldsmobile Co. of New York, Oldsmobile; Overland Motor Car Co., of New Jersey, Overland; Paddock-Zusi Motor Car Co., Chalmers-Detroit; Page & Co., Carl H., Peerless; Quinby & Co., J. M., Pennsylvania and Isotta; Rambler Auto Co of New Jersey, Rambler; Rickey Machine Co., Marmon; Spaulding & Bros., A. B., Stevens-Duryea; Weldon & Bauer Co., National and Kisselkar; White Co., The, White.

Accessories: National Oil and Supply Co., Harrison; The Adolph Karl & Co., Permanit; Union Battery Co., Belleville; New York Auto Top and Supply Co., Newark; Empire Tire and Supply Co., Newark; Electrical Maintenance and Repair Co., Newark; Perfection Wrench Co., Port Chester, N. Y.; H. J. Koehler Sporting Goods Co., Newark; Orange Machine Co., Orange; W. S. Sheppard, Newark; Dayton Rubber Manufacturing Co., New York; B. F. Howard, motorcycles, Verona; Standard Oil Co., Newark; Standard Leather Washer Mfg. Co., Newark; Hydro Carbon and Machine Co., Newark; Auto Tire and Repair Co., Newark; Fallet Time Recording Co., New York; Tiresele Co., Newark; W. C. Baker Heating and Supply Co., New York; Ennis Rubber Mfg. Co., Newark.

NATIVE CARS AT BALTIMORE SHOW

Three Maryland Manufacturers Stage Their Products — Many Leading Makes Among the Vehicles on View.

Because of a downpour of rain which hindered the transfer of the cars and other exhibits from the show rooms and railroad yards to the Fifth Regiment armory on Tuesday of this week, the opening of Baltimore's show, which had been scheduled for 10 o'clock Wednesday morning, was set over until the afternoon, and even when 2 o'clock arrived and the doors were actually opened to the public there yet remained a number of details to be attended to before the show could be really deemed complete. Electrical displays of various sorts are prominent in the decorations. Contrary to the general rule of present day shows, a number of the exhibitors have arranged for special illumination for their stands, as a result of which the old-time heterogeneous effect is recalled to the mind of the show goer.

Quite the most striking thing about the show is the huge electric sign prominently displayed in such a way as to attract the attention of the visitor upon entering the armory. It reads: "The Automobile Club of Maryland—the Club of Accomplishment." For this is a club show, be it understood, and to further carry out the spirit which is actuating its promoters, it has been arranged that members of the club shall wear little ribbons significant of the fact, during the period of the show.

Of new developments brought out at this particular one of the numerous local exhibitions, considerable stress is being laid on the three Maryland-built automobiles, neither of which has appeared at any of the other and previous shows. They are the Spoerer, Maryland and Burns—the latter a buggy type of vehicle, with a covered body which is adapted to be entirely enclosed, and is intended especially for the use of country physicians and others who are forced to travel much in all weathers. In addition to these, the local display has an addition this year in the Studebaker line, both gasolene and electric, which has not before been shown.

Some half a hundred exhibits all told, comprise the show, of which somewhere about 30 include the various exhibitors of cars. Of different makes of car, it should be observed, there are exactly 40. Only one of these is of foreign origin. The list of exhibitors is as follows:

Automobiles: Auto Equipment Co., Rambler; Auto Outing Co., Palmer & Singer, Simplex and Buick; Broadbelt, H. A., Stanley; Brush-Nichols Co., Brush; Burns Bros., Burns; Clark, D. A., Pope-Hartford and Lozier; Ford Motor Co., Ford; Foss-Hughes Co., Pierce-Arrow; Houghton, Chas. E., Overland; Lambert Auto Co., Maxwell; Mar-Del Mobile Co., Franklin, Packard and Waverley electric; Motor Car Co., Stevens-Duryea, Thomas and E-M-F.; Mount Vernon Motor Co., Autocar; New Bridge Garage Co., Cadillac; Olds Motor Works, Oldsmobile; Rice's Garage, Pennsylvania, Welch, and R. & L. electric; Sandruck, F. H., Gaeth and Chalfante; Shaffer Mfg. Co., Pullman; Shuler, W. P., Mitchell; Sinclair-Scott Co., Maryland; Spoerer's Sons, Carl, Spoerer; Stoddard-Dayton Baltimore Auto Co., Stoddard-Dayton and Renault; Walker, Dixon C., Studebaker, gasolene and electric; Wilhide, J. L. B., Kisselkar; Winton, Wiesenfeld, Little Joe, Oakland and Reo; Zell Motor Car Co., Chalmers-Detroit and Peerless.

Accessories: James G. B. Davy Co., Little Joe Wiesenfeld, Auto Equipment Co., Carl Spoerer's Sons, Baltimore Buggy Top Co., E. A. Cassidy & Co., Hector C. McRea, Baltimore Rubber Tire Co., Maryland Railway Electric and Supply Co., Standard Oil Co., National Sporting Goods and Auto Apparel Co., Jones's Machine Co., Howard A. French, Frank B. Burton, Great Eastern Optical Co.

San Jose Show Exceeds Expectations.

Preceded by a parade in which most of the cars in the city took part San Jose's second annual show in the Auditorium rink proved far more elaborate, even than had been anticipated. A dome of dazzling light surmounted the bandstand in the center of the large hall, the musicians being screened by a network of potted palms and other greens. Smilax and evergreen branches transformed the dancing enclosure fence into a pretty hedge in which were concealed incandescent bulbs. Thousands of colored bulbs and Chinese lanterns strung around the rafters and ceilings, gave the hall the appearance of an oriental tea garden. Hundreds of white pedestals, surmounted by vases of cut flowers, heightened the brilliant color effect. The show continued from Wednesday to Saturday of last week, 17-20 inst.

Following is a list of the exhibitors:

Automobiles: M. B. Charles, Stevens-Duryea, Studebaker, E-M-F., Palmer & Singer and Woods electric; Ford Automobile Co., Ford; Garden City Implement Co., International; W. F. Hunt, Thomas Flyer, Chalmers-Detroit, Buick and Oldsmobile; Letcher's Garage, Cadillac, Pierce, Peerless and Apperson; Normandin-Campin Co., Franklin; Osen & Hunter Auto Co., Mitchell and Baker electric; Harrison P. Smith, Reo, Stoddard-Dayton and Kisselkar; Victory Motor Car Co., Sunset.; Wallace Bros., Rambler, Regal and Pope-Waverly electric; Winton Motor Carriage Co., Winton; J. H. Bennett, Tourist; A. C. Banta, Indian motorcycles; William H. Bracher, Excelsior and Pierce motorcycles.

Accessories: California Compounding Co., Osen & Hunter Auto Co., Samuel P. Reed, Harrison P. Smith, Melvin & Murgotten, Millard Bros., and Santa Clara County Automobile Club.

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HARTFORD UNDER THE SHOW SPELL

Latest Models of Cars Brilliantly Staged Attract Big Attendance—Social and Trade Success.

"Not only is the eye enchanted by the succulent sweetness of the translucent spray, dashing like an ethereal veil high into the perfumed atmosphere, but," the automobile show at Hartford, Conn., this week has a host of other features, according to the local enthusiasts, calculated to make it impossible "for the least imaginative or the most cynical of observers not to feel the spell akin to some half-forgotten childish idea of fairyland falling about him."

A five-jet carburetter fountain in the middle of Foot Guard armory supplies the succulently sweet spray, and the decorations are composed chiefly of electric lights of all colors and bowers of southern smilax, while the walls are finished in green burlap. Heavy eyed decorators were still laboring frantically Saturday night, 20th inst., when the show opened, as they had been obliged to do the main part of their work in the dark hours of Saturday morning after the gay blades of the Veteran Firemen's Association had escorted their fair ladies away from the association's dance about 3 a. m. Most of the electric lights were in working order by the time the visiting crowds jammed through the main entrance, but the completion of the decorations was carried on busily through the evening.

Last year the Hartford show was remarkable for returning to the exhibitors practically all of the money paid for show space, and the "second annual" this year, is in charge of the same committee, consisting of F. A. Dart, S. A. Miner and E. G. Biddle. When Hartford does have an automobile show it knows it, and very few of the citizens are able to resist the opportunity to see what the show press agent, in a burst of grandiose effulgence, describes as "the crowning effort of the most picturesque of modern industries; the gathering together of every important car of the latest model and luxuriant design, arranged in a setting which for accuracy of detail, perfection of light and color, and magnificence of the whole will form a proper setting for the jewels which it is designed to cover."

Thus placed in a scene giving the effect of a "garden under the soft night of the tropics, with the luxuriant foliage of the palms and the smilax, the dashing of the fountain, and overhead the thousands of lights twinkling through the ceiling of flowers," the exhibits themselves enjoy a glory which taken in connection with the Hartford liberality in the matter of purchasing cars makes the affair quite as successful from the trade standpoint as its promoters have endeavored to make it in the spectacular and social way.

The exhibitors of cars include: Atlas Motor Car Co., Springfield, Mass., Atlas; R. D. & C. O. Britton, Hartford, Conn., Maxwell, and Stoddard-Dayton; Brown, Thomson & Co., Hartford, Conn., Packard, Stevens-Duryea and Cadillac; Capitol City Auto Hack and Livery Co., Hartford, Conn., Mitchell; Dunbar & Mansir, Holyoke, Mass., Elmore; Elmer Automobile Co., Hartford, Conn., Ford; W. J. Hickmott, Jr., Hartford, Conn., Stanley; Thomas B. Jeffery & Co., Boston, Mass., Rambler; A. E. Lazzaro & Co., Hartford, Conn., Jackson; The McCue Co., Hartford, Conn., McCue; The Miner Garage Co., Hartford, Conn., Pierce, Knox and Buick; The Palace Automobile Station Co., Hartford, Conn., Thomas, Oldsmobile, E-M-F., White, Autocar and Waverley; Alfred W. Peard, Hartford, Conn., Overland; T. Dudley Riggs, Hartford, Conn., Palmer & Singer, and Simplex; J. A. Wood, Hartford, Conn., Jewel.

The accessory exhibitors, occupying the gallery and part of the basement, are as follows: Alling Rubber Co., tires and specialties; E. R. Clark, copper paint and engines; Fairbanks Co., engines; A. L. Foster Clothing Co., goggles and clothing; G. W. Fuller Co., automobile trunks; Hartford Auto Supply Co., accessories; Hartford Mill Supply Co., tools; Mansuay & Smith, painting and body work; George S. Maslen, Indian motorcycles; Perfection Wrench Co., wrenches; The Post & Lester Co., motor car supplies; James Pullar & Co., bodies, shields and tops; Smith-Worthington Co., thermos bottles and specialties; Tracy, Robinson & Williams, tools and specialties.

Thursday night the exhibitors and others are to gather at the Allyn House for a banquet. The affair will be given by the Hartford Automobile Dealers Association, which through its committee is responsible for the show. During the week both the Pope Mfg. Co. and the Electric Vehicle Co., which are located in Hartford, are keeping open house at their respective factories, where their 1909 models are staged in exhibition array in lieu of appearing at the dealers' show.

Syracusans Organize for a Show.

Syracuse, N. Y., is to be numbered among the show holding cities, an association of the local automobile dealers having been organized for the purpose. The affair will open March 24, and will last four days, according to present plans. An option has been secured on the New York State armory, for the last week of the month. The organization of the dealers, which will be incorporated under New York State laws and which will be known as the Syracuse Automobile Dealers Association, held its election of permanent officers last week, C. Arthur Benjamin being chosen president. In addition the following were elected; H. D. Van Brunt, vice-president; M. W. Kerr, secretary; H. L. Conde, treasurer. There are fifteen charter members and seven associate members.

CLEVELAND'S SEVENTH ITS BEST

Automobile Show Held in the Lavishness of Cut Flowers and Other Luxuries—The Exhibitors.

Cut flowers, Oriental rugs, electric fountains, gold arches, colored incandescent bulbs grouped in the form of an immense automobile, canary birds, and similar lavish decorative features have produced an effect in the big Central armory in Cleveland, O., which makes the seventh annual show this week a very agreeable place. The exhibition, which is managed by the Cleveland Automobile Dealers Co., opened on Washington's Birthday and lasts until Saturday night. The display includes cars either manufactured or represented by 27 automobile exhibitors, resulting in the staging of 125 machines. The list of exhibitors is as follows:

Automobiles—The Auto Shop Co., Thomas and Selden; Buick Motor Co., Buick; Barger Automobile Co., Cadillac; The Broc Carriage & Wagon Co., Broc electric; Cameron Auto Co., Cameron; Commercial Car Co., Apperson-Toledo; Chisholm & Phillips Automobile Co.; Crawford Motor Co., Jackson; The Detroit Electric Co., Detroit electric; Elmore Motor Car Co., Elmore; Ford Motor Co., Ford; The Gaeth Automobile Co., Gaeth; Hall Brothers, Cartercar; Lucas & Christenson, Mitchell; The Jewel Motor Car Co., Jewel; Harry S. Moore, Stoddard-Dayton and Brush; Maxwell-Briscoe Co., Maxwell-Briscoe; Olds Motor Works, Oldsmobile; The Peerless Motor Car Co., Peerless; Pullman Motor Car Co., Pullman; Price Bros. Carriage Co., Baker electric; Reese Motor Car Co., Royal Tourist, Corbin and Columbus electric; The Rambler Automobile Co., Rambler; The Rauch & Lang Carriage Co., Rauch & Lang electric; The Standard Automobile So., Packard and Franklin; The Studebaker Automobile Co., E-M-F. and Studebaker; Charles B. Shanks Co., Stearns and Chalmers-Detroit; The Winton Motor Carriage Co., Winton; Wingle Motor Car Co., American Simplex and Midland; The White Co., White steamers.

Accessories—The Austro-American Separator Co., Akron Auto Supply Co., Casino Cycle & Supply Co., Cleveland Tanning Co., Collister & Sayle, Cleveland Auto Top & Trimming Co., Domestic Vacuum Cleaner Co., The Globe Oil Co., The German Chemical Supply Co., B. & B. Mfg. Co., H. W. Johns-Manville Co., The K. W. Ignition Co., Fawn River Mfg. Co., L. J. Mueller, Charles E. Miller, Pennsylvania Rubber & Supply Co., The Perfection Spring Co., Reflex Ignition Co., Rochford Mfg. Co., Standard Top & Equipment Co., Mannie Strauss, The Stein Double Cushion Tire Co., H. H. Ward and associates, Way, Mitchell & Co., The Willard Storage Battery Co., The Westinghouse Electric & Mfg. Co., The Zenith Motor Goods Co., G. H. Williamson.

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ABOUT MAKING ALUMINUM JOINTS

Difficulties Attending the Process of Soldering or Welding—Proper Solders and Their Application.

Difficulties attendant upon soldering or welding aluminum, which have been considered more or less mysterious by the average workman, as by the average motorist as well, are fully explained by the statement that while the metal itself fuses readily enough with a number of other metals, it is remarkably subject to the effects of oxidation—so much so, in fact, that hardly more than an instant's exposure to the atmosphere is sufficient to render it impervious to fusion. This is due to the formation of a thin, invisible layer of oxide on the surface which it is desired to treat. This tendency, according to the Scientific American, is the sum and substance of the chief drawback which has been held out against this remarkable metal by the common run of those who are familiar with its use.

"There is no solder which operates with aluminum in the same way that ordinary solders operate with copper, tin, etc.," the author goes on to say. "There are two reasons for this.

"First. Aluminum does not alloy readily with solders at temperatures as low as the other metals require, and it is consequently necessary, in soldering aluminum, to use a much higher temperature. Furthermore, aluminum alloys with lead only with great difficulty and with but a small proportion of lead at that; consequently lead solders are useless with aluminum.

"Second, The surface of all aluminum is covered with a thin invisible coating of aluminum oxide. This coating forms instantly on the surface of aluminum and is very refractory, and its presence is responsible for the high resistance of aluminum to corroding agents, since, although aluminum itself is soluble in a great many chemical compounds, this protective coating of oxide is insoluble in almost everything excepting hydrofluoric acid. While in general this coating of oxide is beneficial, in that it forms a perfect protection to the aluminum underneath, it is, by reason of its efficiency in this particular, responsible for the principal portion of the difficulty which occurs in soldering aluminum, as naturally no solder will alloy with aluminum oxide.

"In soldering aluminum, therefore, it is necessary that this oxide must be removed before the soldering can take place; and as it forms again instantly after removal, it is necessary that the removal of the oxide and the covering with solder shall be simultaneous. In soldering other metals, the oxide can be removed chemically. With aluminum this is not possible, and it must be removed mechanically by abrasion.

"Bearing these facts in mind, it will be readily understood how aluminum soldering must be done. All the surface to which it is intended that the solder shall adhere must first be tinned. This is accomplished by heating the metal to a temperature above the fusion point of the solder used, and then rubbing the surface with a stick of the solder, thus rubbing the oxide off the surface with the solder itself, and covering the exposed points with melted solder, all in the same motion. In order to make sure that the tinning is thorough, it is better to rub the surface with a steel or brass scratch brush while the solder on this surface is still molten. This insures a thorough job of tinning. After the edges to be united are thus tinned, they may be sweated together with pure block tin, with the aid either of a soldering iron or blast lamp.

"With regard to the composition of aluminum solders, zinc appears to alloy with aluminum more readily than any other metal available for the constituent part of the solder; consequently all solders which will readily tin aluminum contain zinc in varying proportions. The solders which we have found to be most satisfactory are composed usually of tin, zinc, and a very small proportion of aluminum. These solders do not run very freely nor fuse as readily as ordinary solders, and it is necessary, as stated above, to use a higher temperature—so high in fact that extreme difficulty is found in using these solders with a soldering iron, and it is generally necessary to use a blast lamp.

"Another thing which must be borne in mind is that solder will not flow into an aluminum joint, even when tinned, by capilliary action as it does into copper or tin joints, and it is therefore necessary to place on the surfaces to be united all of the material necessary to sweat them together before the edges are brought into contact. In soldering aluminum joints, it is necessary that both the tinning and sweating shall be most thoroughly done; otherwise the joint will not be durable.

"On account of the presence of zinc in the tinning solder, the solder is decomposed by moisture, and unless the work is so well done that the joint is absolutely waterproof, it will not be durable. The quality of the workmanship has more influence than anything else on the permanence of the work."

After Grinding the Valve.

In connection with the usual rules for valve grinding it is commonly recommended that a piece of cotton waste be placed in the cylinder casting just at the mouth of the valve port to prevent any of the abrasive from entering the cylinder proper. It is quite as important, however, that the waste be removed after the process has been completed and the novice is almost certain not to think of the necessity of removing it, although its presence is so obvious.

NEW "HIGH-SPEED" TOOL STEEL

Foreign Metallurgists Make Remarkable Claims for Their Product—Some of Its Peculiar Properties.

What with characteristic assurance is claimed to be a revolutionizing development in shop practice is the introduction of a new "high-speed" steel which has been placed on the market by a British firm of metallurgists. And pending its actual trial in extended practical service, it must be admitted that it holds forth most alluring promise of great advantage over the tool steels at present in use. After lengthy experiments it is alleged that the properties of the new metal have been brought to a point where it possesses from three to seven times the cutting power of existing high-speed steel, together with the further advantage that, in contradistinction to most cutting steels, it can be hardened in water, oil or the air blast. In regard to its properties Professor Arnold, of Sheffield University, is quoted as saying that it is an absolute departure in metallurgy to have obtained a water quenched steel which will work for a considerable time on the hardest metal with the cutting edge at a bright red glow.

The new steel is the product of Jones & Colver, of the Continental Works, Sheffield. In regard to it, B. W. Winder, director and works manager of the Continental Works, explained that he was content not to make any sensational claims for the steel beyond the fact that it is the first high-speed steel produced that can be hardened in cold water without danger.

"At the present time," he said, "ordinary good high-speed steel on a soft material will work till the nose gets a red heat, but when it gets to that heat it only works a certain time before the heat breaks the tool down. Therefore the probability of getting steels to run at a faster rate is perhaps rather remote, though this difficulty will probably be overcome in the future.

"The great advantage of the new steel is that it will work very much longer at a high heat than the old. We don't claim for a moment that it is going to work four times faster than the present high-speed steel. What we do claim is that it is very superior to any steel that has been produced yet. It will go on working much longer without requiring regrinding."

The steel would not require special machinery, he went on to say. Moreover, the most dangerous time for ordinary high-speed steel to approach water is when it is in the dull red state, as it is then very liable to crack. But the new steel will not crack if plunged into water at any heat.

The new steel is not much more expensive than the old high-speed steels, so that in proportion to its capacity it works out much cheaper.

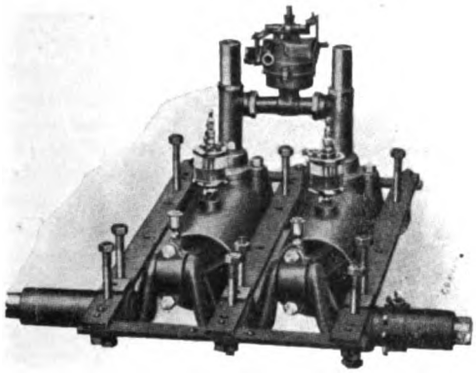
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MOTOR CAR FOR TRACK INSPECTORS

Simple Adaptation of Automobile Principles to Railway Service—Features that will Repay Study.

Considerable has been heard of the development of the gasolene motor car for railway service as applied to passenger haulage, but up to this time, comparatively little has been done in the exploitation of the principle as applied to smaller powers and used for light transportation. On this account no small interest attaches to the Rockford motor cars, which, though designed directly for use in replacing the familiar handcars such as are employed in railway maintenance by track inspectors and section gangs, is suggestive of great possibilities for industrial railway work as well.

By ingenious elimination of all superfluous details of construction, these vehicles have been literally reduced to their lowest terms, so that as a matter of fact they present practically none of the difficulties which, in the eyes of the motorist accustomed to the large and costly machines commonly used for pleasure driving on the highways, would seem to render the use of the internal combustion motor prohibitive in the case of the average track foreman or section boss. Minus any form of transmission gearing, and with a minimum number of parts, all very simple, they are started by being pushed along the track, controlled when in motion by means of the spark and



ROCKFORD MOTOR

throttle in the usual way, and stopped by cutting out the action of the exhaust valves.

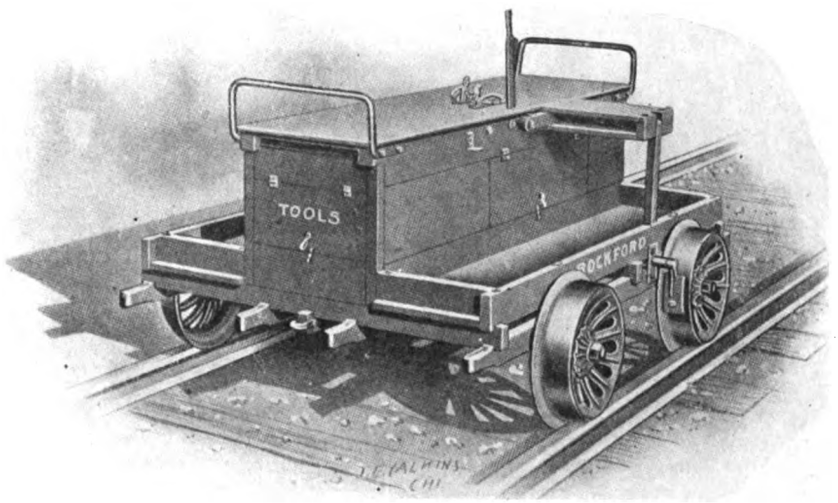
As constructed to replace the common forms of hand car, they are equipped with a 7 horsepower twin-cylinder motor, which is claimed to have an effective driving range between 3 and 30 miles per hour. Furthermore, although powerful enough to carry a load of 10 men, they weigh but 650 pounds complete. Larger loads can be hauled by a car of similar construction, but equipped with a four-cylinder motor of similar design to the twin type. Further variations of the principle, are also found in a light inspection car which has seats for two passengers, who may face in either direction.

The unusual features embodied in the construction of these machines are, in the first place, the elimination, in addition to the transmission which usually is considered a necessity, where the internal combustion engine is employed, of the fly wheel. The connecting rods are coupled direct to a crank shaft, which is permanently affixed to one of the axles, while the cylinders are carried by a light frame which is bolted directly to the under side of the platform or other body. By way of valve gear, a short, transverse cam shaft runs across the head-ends of the cylinders and is driven by a light sprocket chain from the crank shaft, also carrying the timer for the jump spark ignition system; while the intakes are automatic. A special form of carburetter is mounted in the center of a short length of intake pipe communicating with the cylinders at short range. Lubrication is effected by means of oil cups, one of which is placed on the upper side of each of the cylinders.

Such is the arrangement of the cam shaft that the engine may be reversed without the use of any special device, while as a minor refinement, the control levers are so disposed that they always are moved in the direction in which the car is traveling. For stopping a device is employed which opens the exhaust valves in a manner claimed to be entirely original. This measure in addition to supplying an absolute check on the production of power, also provides automatic means of checking the flow of fuel to the cylinders, by stopping the suction, thus saving the waste of fuel and flooding of the cylinders.

Another peculiar feature of the motor is that it is entirely innocent of any cooling means. In explanation of this, it is stated by the makers, that as extremely low compression is employed, the cylinder temperatures never rise to a point where artificial cooling means are required. The same circumstance, it is claimed, also accounts for the fact that the engine will run under ordinary conditions and still remain free from carbon deposits.

Rockford cars are produced by the Duntley Mfg. Co., Chicago, Ill., who have fixed upon their specifications only after a thorough study of the problem of simple power production under the most adverse conditions embodying continuous service, slight attention and inexperienced handling. While there is little in their construction to suggest the ordinary types of automobile, their simplicity should entitle them to close consideration by those whose aim it is to build machines to satisfy similar requirements under the even more severe conditions which obtain with the vehicle designed for use upon the highway.



ROCKFORD MOTOR CAR FOR RAILWAY SERVICE

Souvenir Album for Motorists.

Partaking of the nature of a souvenir album and containing a large number of beautiful views, racing drivers' portraits, odd motoring scenes, and a colored poster picture, together with illustrations and specifications of the 1909 models of an extensive list of the prominent American makes of cars, the book issued for complimentary trade distribution by the Trenton Rubber Mfg. Co., of Trenton, N. J., and bearing the title "The Automobile of 1909," is a noteworthy and handsome piece of work. The substantial cover is silk corded and gold embossed, and fittingly suggests the excellent character of the contents. An examination of the specifications of the cars illustrated in the book discloses that all of them employ "Thermoid" brake lining, though the list of cars that the book contains is by no means the complete roster of those who have engaged to use this material during the 1909 season.

After taking up lost motion in a bearing, care should be observed in making the final adjustment so that the strain of the bolts does not come on the journal, but on the faces of the bearing lines or bushings.

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DEVELOPMENT OF THE AUTOMOBILE

Taylor Gives Rapid Review of the Speed and Solidity of Its Progress—Where the Credit Belongs.

"During the past five years the automobile has undergone precisely the same kind of development, but at an unprecedented speed, which every new mechanism is obliged to pass through. It has been simultaneously improved in quality and cheapened by the natural method of the 'survival of the fittest' and the elimination of the more unfit constructions. This process is still going on, but at a slower pace than formerly. Few elements of the pleasure automobile have survived the past five years unaltered," remarks C. H. Taylor, engineer of the E. R. Thomas Motor Co.

"The motor has been quieted by attention to valve-operating mechanism, to the carburetter and to the exhaust line. It has been given remarkable flexibility by improvements principally in the carburetter and valve setting. The magneto has come into its own as the most reliable source of ignition current. The radiators have been strengthened and increased in cooling efficiency. The cylinder jacketing and lubrication have been cared for in such a way that there is no longer any excuse for an overheated motor.

"In the transmission system the old cone clutch has been greatly improved, and the newer disc types have been developed, it would seem, almost to perfection.

"Through the use of special materials and of special tooth forms, together with the annular type of ball bearing, gear boxes have been reduced in size and silenced. The sliding gear has practically eliminated all other forms of transmission, and unlike five years ago, there is no rival which seriously threatens its place. The live rear axle with entirely enclosed driving mechanism has been developed from a most uncertain mechanism five years ago to one of the most positive and reliable units in the car.

"As regards the running gear, the pressed steel frame was originated but little more than five years ago, and was seen only on one or two cars for several seasons. It is now universal, its advantages from the standpoint of strength, lightness and cheapness being now thoroughly understood.

"For front axles, the one piece drop forging of I-section has taken the place of the old built up tube, or hand-forged rectangular section.

"The springs, especially in the rear, have been lengthened, flattened, and made of better material, with corresponding increase in comfort, especially at high speeds.

"The wheels, apart from the hubs and tires, have undergone less change than any other important element, but considered as a whole, the adoption of drawn metal hubs, roller and ball bearings, together with detachable rims, have modified this unit very appreciably.

"The automobile engineer is not alone to be credited with the enormous advance which has occurred. Today he has at his command methods and materials which were unknown or difficult to obtain five years ago. Today the enormous volume of business which the automobile has created has enabled specialists in certain lines to equip themselves in a most complete manner for handling certain classes of work. Thus, it is possible to obtain pressed steel autogenously welded parts at low prices, which, if properly designed, are superior to anything that could have been made commercially at twenty times the price a few years ago. Five years ago the steel makers of this country were not equipped to turn out the special grades of steel required for high class automobile work, even at three times the price demanded today.

"In this way it may be said that every portion of the automobile has been considered from different points of view by men who had made this type of part a study for years before the advent of the automobile, and who thus were peculiarly well placed to help the automobile engineer in his work.

"To the large automobile manufacturer belongs the credit of having the foresight and daring to invest large sums of money in a new industry replete with pit-falls, and thus providing the engineer with the means of working out his problems. That the American is able to compete with and even beat the foreigner was most conclusively shown when a Thomas stock car beat the best that Europe could produce in the New York to Paris race.

"Finally the automobile engineer himself must be credited with the biggest share in the improvement of the car mechanism, since he has been the leader under whose direction others have worked towards the attainment of a common purpose."

To Modify Effect of the Fan.

A radiator and fan designed to give the best temperature in summer will cool the engine too much in winter. If the car is used in very cold weather it may be quite feasible to remove the fan belt altogether without producing overheating. If this is found impracticable a sheet of tin may be cut to the outline of the lower portion of the radiator and wired to the back of the radiator to cut off some portion of the fan draft.

Adapting Color to the Surface.

"Motor car surfaces are large, as a rule. The possible effect of various colors upon such surfaces should therefore be studied keenly. Some shades and tones appear to especial advantage upon large surfaces—others quite the opposite," cautions a thoughtful observer.

VARNISHING AUTOMOBILE BODIES

Work that Worries the Carriage Varnisher in His First Attempts—Suggestions for Meeting the Difficulties.

Carriage varnishers not infrequently, and very naturally, experience some difficulty when assigned to finish, or varnish, as the case may, be, their first motor car, especially if the surface happens to be a large one, says the Carriage Monthly, and after pointing out the chief difficulties that are encountered, it suggests practical methods for coping with them.

The shape and formation and sweep of panels are so entirely different, and the size so radically increased, that numerous varnishers confess to a sort of stage fright at the outset.

In the first place, larger brushes will be needed in order to negotiate the big, sprawling surface conveniently. On some of these great limousine bodies, for example, the brushes which the carriage varnisher is best accustomed to will be found decidedly too small, inasmuch as they necessitate working faster than the capacity of the varnisher will warrant and accomplish right results. He must therefore, familiarize himself with the brushes of larger size.

In like manner he must acquaint himself with the surfaces of increased size. No motor car surface is too large to be flowed entirely over without any laps. Varnish laps are dangerous at best.

Take in the size and special features of the surface, and of each individual panel, before applying the varnish. Then study the general requirements, after which proceed with the work. An inch bear's hair or badger's hair brush, preferably the latter, should be used to wet the outer edge of the panel with varnish. Then catch up the flow with the large 3 or 3½-inch half elastic, flat, bristle varnish brush for the rubbing varnish, and a full elastic brush for the finishing varnish, coating the surface, however large it may prove to be, in solidly before squaring up and laying off finally.

For these surfaces of prodigious size it is advisable to use both elastic rubbing and finishing varnish, although, of course, this is not absolutely necessary. But the elastic varnishes will be found great aids in getting over the surface of gigantic proportions.

The chief cause of failure, however, with the inexperienced motor car varnisher is the attempt to divide the surface, if an unusually large one, into sections, and introduce laps at the intersection of the sections.

Having acquired the importance of these things by observation and practice, the varnisher, if he elects to profit by them, will soon find himself in a position to varnish any motor car surface without trouble or inconvenience.

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NEW IDEA IN SPRING SUSPENSION

Horizontal as Well as Vertical Reaction Taken care of in Hayber System— Specifications of the Design.

Despite the great variety which is displayed in the methods of spring suspension which are in present vogue in automobile construction, it is a significant fact that none of them are wholly satisfactory, and that inventors are constantly bringing to light new methods of accomplishing this apparently simple result. While in the earlier stages of motor vehicle development it was customary to utilize almost exclusively the principle of the elliptical or semi-elliptical spring, more recently the virtues of the helical form have come to be appreciated by designers. For the most part adaptations of this type of spring are confined to combinations with the elliptical form. In a few cases, however, the helical member is employed directly, and without the aid of any other means of cushioning shock or checking rebound.

A recent instance of this is found in the Hayber system—a British invention which is credited to one G. Willis Hayber, in which the entire cushioning of the chassis is obtained through the offices of a single helical spring member in each spring set, rebound being in a measure reduced by the action of a piston which rides upon the spring in a specially constructed cylinder. The latter, together with the piston rod, forms a radius member or connecting link between the chassis and the axle. But instead of being connected directly to the latter, it is pinned to an extension below it and formed integral with a second radius member also attached to the frame and to the axle. The two members of the suspension group thus form a triangle, the altitude of which varies as the body oscillates over the axle.

The arrangement may be better understood from the accompanying illustrations, in which the first figure shows the layout of the device and renders its working readily understood. The cylinder, C, which contains the spring, is articulated to the frame at the point, G, about which it is permitted to oscillate, while the piston rod, D, is linked to the lower end of the radius member, E, which, in turn, is pivoted to the frame at the point, H, and to the axle at F. A triangle is thus formed with G-H as its base, and its apex at the point of connection between the link, E, and the piston rod, D.

Obviously as the frame rises and falls, the effect of the motion will be to alter the altitude of the triangle, the necessary lengthening or shortening of one of its members being accommodated by the movement of the piston in its cylinder, and against the pressure of the contained spring. The second of the two illustrations shows the device in section, and reveals the position of the spring, A, and the piston, B, within the cylinder. Evidently by properly designing the cylinder and piston, the effect of a piston shock absorber may be secured, without in the least interfering with the action of the spring; while at the same time the lat-

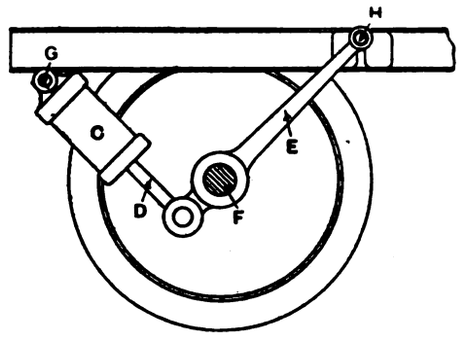


Fig. 1

ter is protected from the effects of dust and dirt as well as rust.

As its outlines would indicate, the inventor is possessed of a number of ideas which are not served by the more familiar methods of spring mounting. Among these is a theory that the road shocks which must be withstood by the suspension, while nominally only vertical in direction, at times assume a horizontal line of action, or at least, are possessed of a horizontal resultant, which is worth taking into account in laying down the suspension. It is his belief that below certain critical speeds, the road shocks are only vertical, while above those

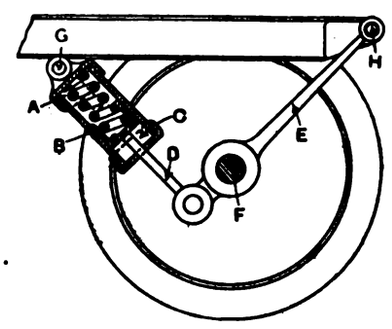


Fig. 2

speeds, they are horizontal. The intended effect of the peculiar design adopted is to counteract these high-speed effects by causing the spring resistances to be directed more nearly in the horizontal sense than ordinarily is the case. The critical speed considered in this connection, it should be observed, is somewhere in the neighborhood of 12 miles an hour.

Caution in Using Putty.

"For motor car surfaces never putty on the priming coat," says an experienced automobile painter. "Putty all work as smooth as possible, and never putty a crack or crevice that responds, by opening or closing, to twisting or wrenching of the surface."

TWO PROCESSES OF TIRE BUILDING

Goodyear Explanation of the Differences Between "Moulding" and "Wrapping" —Their Respective Results.

Much of the mystery which in the past has surrounded the terms "moulded" and "wrapped," in connection with tire construction, has been dissolved by the process of enlightenment which always comes to the experienced user of a manufactured product whether openly or in surreptitious ways. At the same time there are many motorists who even today must plead guilty to a more or less hazy idea of the distinction between the terms and of the advantages which are carried by each of the processes. The Goodyear Tire & Rubber Co., through the employment of a combination of the two methods in the construction of the tires which bear their name are in a position to define the properties of both, with less risk of bias than otherwise might be the case.

Thus, as they explain, the moulded tire is built up, layer by layer on an iron core. Over it is clamped an iron mould. It then goes to the vulcanizers. Here heat expands the rubber, creating enormous pressure inside the mould, which forces a perfect union between the layers of rubber and fabric which go to make up a tire. This pressure is so tremendous that a 2-inch cube of rubber enclosed in a cast-iron mould with walls 2 inches thick will crack the iron when subjected to the heat of the vulcanizer.

The weakness of the process lies in the fact that the building up of the fabric and rubber piece by piece is an operation requiring skill and dexterity. If the strips of fabric overlap ever so little—there's a ridge. If they fail to meet by the fraction of an inch—there's a hollow. These ridges, hollows, irregularities, are said in the curing to become hidden weaknesses and defects, because of which one moulded tire will last only 1,600 to 2,000 miles, while its mate stands up perfectly for 12,000 to 15,000 miles of hard riding.

The wrapped tread tire, on the other hand, is built up layer by layer on an iron core in the same manner. But before curing the iron core is replaced by an air bag—an extra strong inner tube. And instead of being clamped in a mould it is wrapped about with many layers of strong tape and is then cured, or vulcanized, in live steam. The compressed air in the air bag smooths out all the irregularities in the layers as your hand smooths out wrinkles in a garment—there can be no hidden ridges or hollows to induce blowouts and cut down the mileage. But it does not give the terrific squeeze that the moulded tire gets—thus lacks cohesiveness and unity—loses durability and strength.

Besides these two methods of tire mak-

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ing, there is also the combination of the two employed by the Goodyear people. The tire is first put on the iron core, clamped in the iron mould, the same as the moulded tire, and enclosed in hydraulic press vulcanizers, surrounded by live steam until the rubber has expanded to the utmost—or until the squeezing has reached its limit.

Then before the rubber has fully set—while it is still plastic, it is removed from the vulcanizer and carefully inspected, the tread applied, the iron core is replaced by the air bag, the iron mould by the winding of heavy tape, it is inflated on a rim, put back into a vulcanizer and left until the curing process is complete. The iron core and the squeeze weld the tire into an inseparable whole. The air bag then smooths out any wrinkles, furrows or irregularities which may have been hidden from the inspector's eye.

Novel Points in Non-Skid Tire.

Numerous and varied are the properties and advantages claimed for the many types of non-skid tire which are to be found on the market, but in the Kempshall tire, which is a British product for which Cryder & Co., New York City, are sole American agents, are to be found a number of points not covered by any other individual brand of this utility. Unlike the average non-skid, they are of all-rubber construction, one inch of solid rubber being moulded into the tread in the peculiar form which is at once characteristic of the product, and its chief point of appeal to the user. Furthermore, as being constructed to run at from 15 to 20 pounds less pressure than is required by other makes, as saving the cost of chain attachments and as being always ready to prevent side slips whether on wet or dry roads, they are called the cheapest tire "per non-skid mile" on the market. A series of cone-shaped depressions on the tread surface, together with turrets on the side walls, constitute the special provision against loss of traction in either direction.

Big Repeat Order for Hartford Tires.

Following a period of more than 10 years experience with that particular brand, the New York Transportation Co. has just closed with the Hartford Rubber Works Co., for tire equipment for its entire lot of 25 new omnibuses soon to be installed in its Fifth avenue service. In addition to being the largest single order for 'bus tires ever placed in this country, the order is a "repeat," as a large proportion of the machines now running on Fifth avenue already carry Hartfords.

Concrete in Garage Construction.

Represented to combine great strength with non-inflammability, a concrete automobile garage was one of the features of the cement products exposition held in the Chicago Coliseum last week. Concrete roadways suitable for automobile traffic were likewise shown in section.

RELIABILITY OF MOTOR HAULAGE

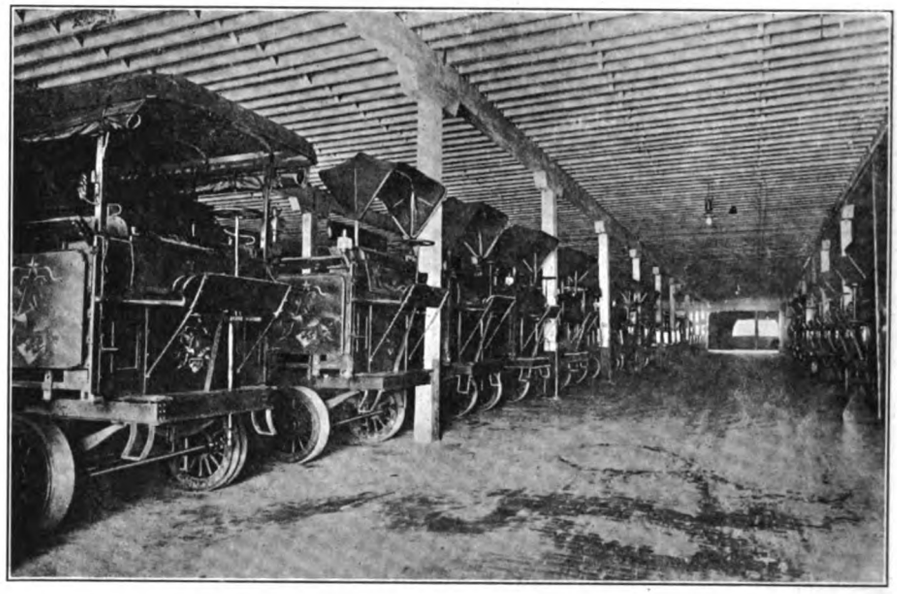
Its Practical Demonstration in Four Years Experience of a Big Brewing Concern —Record of Performance.

Although the growth of the commercial vehicle has been slow in many quarters, and in some instances, partly because of the many discouragements attending its introduction even is held to have been greatly over-rated in the past, still its growth has been certain, and in a few notable instances remarkably extensive. Even though the cases in which firms adopting the motor in place of horse traction for haulage purposes have found it advantageous to increase their trial equipments to the absolute exclusion of animal service are comparatively rare, they serve as an apt illustration of what might be done in many other cases were proper judgment exercised in the administration of the service.

A striking example of the success which may attend conscientious and persistent efforts to introduce the motor vehicle for commercial purposes, is found in the case of the Anheuser-Busch Brewing Co. Association, of St. Louis, Mo., which at present, only four years after the inception of the motor vehicle project in connection with its work, has an installation of no less than half a hundred vehicles in constant commercial service, in addition to which the large private garage which it maintains houses a number of pleasure cars belonging to members of the association, several of which are employed more or less indirectly for business purposes.

In one instance, for example, a small electric runabout is used daily by an official in making his rounds of the vast plant, whereby many hours of time are saved in the course of every week, while his labor also is materially reduced. As a matter of fact, the passenger vehicles, which more properly might be classified as pleasure cars, number a baker's dozen.

Of the commercial vehicles several trucks are employed, but the majority are electrics. The total electric vehicle equipment numbers 53 trucks and delivery wagons, and of these more than half are Waverleys. Others are various patterns of Electric Vehicle, General Vehicle and Couple-Gear—these makes being used in 1½, 3 and 5 ton sizes. The Waverley equipment is mainly of the 1½ ton delivery size. The accompanying illustration affords a good idea of the extent of the "plant" which is required to house and care for them.



VIEW OF ANHEUSER-BUSCH TRANSPORTATION PLANT

In this connection some figures supplied by the makers of the last-named vehicles are valuable as showing the dependability of the electric when properly installed and scheduled: "Of the 53 electrics, 48 are in daily service; of this number, the following is a month's record:

"Twenty-eight did not lose a minute's service for any reason whatever.

Sixteen missed one day apiece during the month on account of the drivers not being on duty.

"Four lost from half to a full day on account of general repairs.

"In other words, the number of automobiles out of commission for the month on account of repairs, was less than ¼ of 1 per cent. of the total in operation—and this is the record of a company that keeps its wagons constantly active.

"To keep all the electrics in operation requires only one machinist, one battery man, a boy, a foreman and two wagon washers. This small amount of labor for so much equipment goes to show that electrics are easily maintained in first class condition."

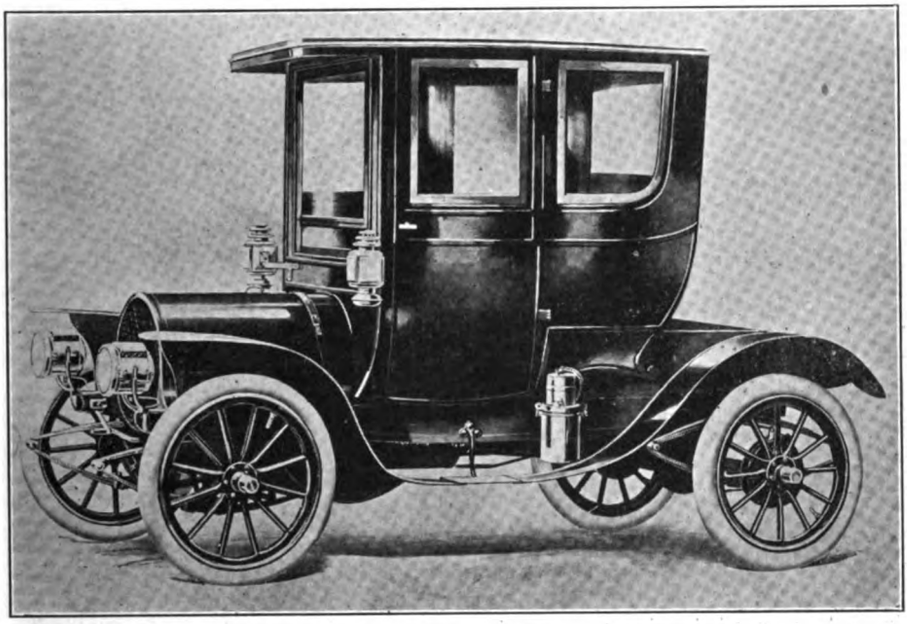
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INSIDE DRIVEN CARS FIND FAVOR

New Franklin Model Adapted to Meet the Popular Demand—Features of Convenience in the Design.

Although the growth in use of the inclosed type of passenger motor vehicle has been so extremely rapid as to excite comment, it should be observed that one of its phases which has attained especial prominence during the past year more than ever before, though very significant, has escaped extensive notice. Though the limousine and landaulet types are becoming more popular every day, it is noteworthy that those machines which are constructed for the accommodation of not more than two passengers and are inside-driven, are especially popular just now. It also is noteworthy that they are designed to serve a slightly different purpose from the ordinary town cars in that they are better suited to the needs of the owner who uses his car for business purposes, as in the case of the physician. Recognizing this, one or two makers are producing such machines with an eye to supplying all the necessities of vehicular travel minus a few of the useless luxuries which are often embodied in the more elaborate types of town car.

Thus in the design of the 18 horsepower brougham built by the H. H. Franklin Mfg. Co., which is here illustrated, while the appointments are ample to suit the convenience of the passengers, no extravagant use has been made of superfluous trimmings or fittings. The doors are wide, providing easy entrance. The finish is in Franklin standard colors. The trimming of the interior is of goat skin with blue broad lace. A small front extension of the top affords protection when the car is being driven with the front window partly open, and this in addition protects the glass during severe storms. All the glass frames are made to either fold up or drop into grooves. The mud guards are of the conventional long curved pattern.



FRANKLIN 18 H.P. INSIDE DRIVEN BROUGHAM

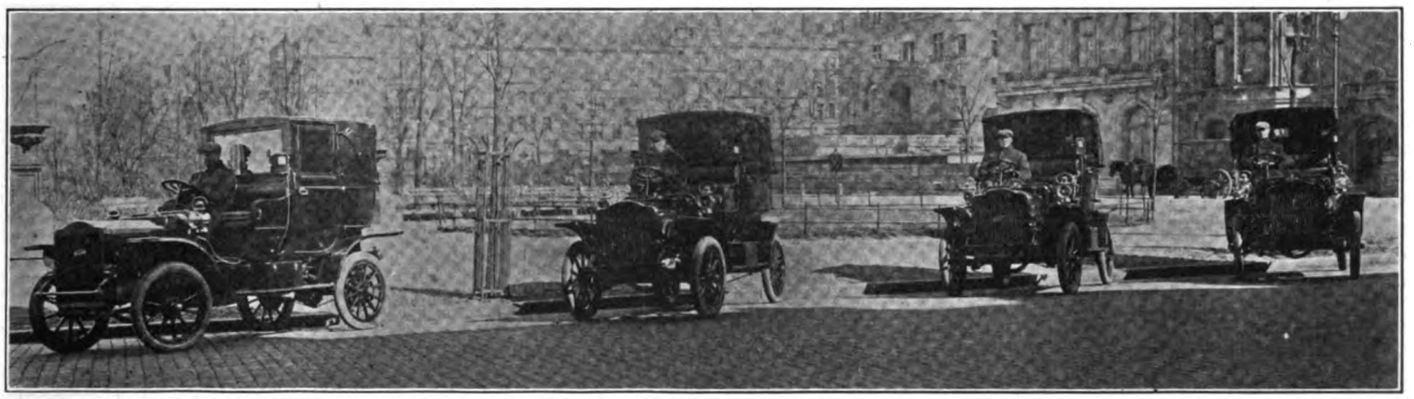
MORE TAXIMETER CABS FOR ALBANY

Quartet from the White Factory Added to Steam Propelled Contingent—Buyer Commends the Type.

Development of the taximeter cab has been so rapid during the last couple of years, and the demand for machines of various structural patterns has been so great that only a very limited number of makers remain who have not at one time or another supplied their quota of vehicles to the popular movement, whether in the way of a direct effort at securing business in this line, or as the result of the importunities of agents and users. Just here it may be observed that it should be considered a particularly favorable token when, despite the presence in the field of such great numbers of vehicles as are produced especially for the purpose, a buyer insists upon having the principles which apply to his favorite form of pleasure vehicle embodied in machines upon which he expects to depend for an income.

In this connection, the instance may be cited of Matt De Freest, one of the largest liverymen in Albany, N. Y., who has recently secured delivery of four taximeter cabs for use in his business. When completing his purchase of the machines, which are White steamers, as shown in the accompanying illustration, De Freest said: "In placing this order, I am guided by my previous experience with one of your machines, which was always ready to run and never out of business."

The well known smooth working properties of the steam engine are such as to fit it particularly well to the purpose of the commercial vehicle, the popularity of which, all other things aside, depends in considerable measure upon its freedom from shock and jar, its controlability and silence. Furthermore, given its modicum of attention it is, next to the electric motor, the most dependable form of prime mover yet produced.



QUARTET OF WHITE TAXIMETER CABS FOR USE IN ALBANY, N. Y.

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CREATING AN OCEAN BOULEVARD

Bill Embodying Governor Fort's Suggestions Introduced in New Jersey Legislature—Features of the Measure.

Governor Fort's plan for an ocean boulevard along the coast of New Jersey, from Atlantic Highlands to Cape May, has advanced so far as to be embodied in a bill introduced in the legislature by Senator O. H. Brown, of Monmouth, on Monday, the 15th inst. The measure creates an unpaid commission, to be known as the State Highway Commission, consisting of the Governor, president of the Senate, speaker of the General Assembly, and the commissioner of public roads, who are charged with the powers and duties specified in the bill. These, in brief are as follows:

Preparation of a route following as far as practicable the available and convenient roads now constructed, and as near the coast line as practicable. The commissioner of public roads shall, after a certified map of this road has been filed in the office of the Secretary of State, prepare maps and lists showing what portion of the boulevard traverses each of the several counties and municipalities, with the view of having the proper local authorties take such action as may be required on their part to carry out the general plan. Provision is made to authorize such local authorities to issue bonds to secure the funds required for necessary work, and to enter at once upon such work, but the bill does not obligate the State to accept any of the improved roads ceded under the provisions of the bill, nor to repair nor maintain the same until the legislature shall have made the necessary appropriations.

The eighth section of the bill reads: "The State Highway Commission herein provided for shall also prepare a route for a connecting highway across the State, connecting the several county seats of the various counties of the State with one another, from Newton, in the county of Sussex, to Cape May Court House, in the county of Cape May, following, as far as practicable, the available and convenient improved roads now constructed, and file said route in the office of the Secretary of State, as provided in the case of the ocean boulevard under the second section of this act. All the provisions of this act with relation to the ocean boulevard shall be applicable to the county seat highway herein provided for."

Impeaching a Justice of the Peace.

There was an unusual scene in the New Jersey legislature on Tuesday, 23d inst., when Mr. Burpo, of Passaic, in the House, offered the petition of the Automobile Club of America, asking for the impeachment of Manfred Naar, Justice of the Peace, of Trenton. The petition accuses Naar of extortion, violation of his oath of office and other "high offenses." It is set forth in the petition that Joseph S. Josephs, of South Amboy, got a letter from Naar on September 12, telling him that he had been fined $13.75 for exceeding the speed lifit, although Josephs insists he had not previously been served with a warrant of arrest or summons for trial. Several other similar cases were also cited in the petition, in none of which, it was asserted, were warrants executed, and, it was set forth, "in each case the sums of money were extorted by said Naar under cover of his said office." The petition was referred to the committee on judiciary for consideration. The case is the outgrowth of a civil action brought against Justice Naar last November through counsel acting for the Automobile Club of America on complaint of several motorists who had suffered alleged injustice at his hands.

Buffalo Squelches the Joy Riders.

Buffalo, with its proportionately large quota of motor cars has been a mecca in the past for car lifters and joy riders. This delightful occupation had grown to such an extent that the Automobile Club of Buffalo, whose members were the chief sufferers, decided to put a crimp in the activities of the Auto Thieves and Joyriders Association of Buffalo, Ltd., and hung up a prize of $50 for the arrest and conviction of any person who "borrowed" or maliciously injured any car belonging to a member. As the knights of the locust in the Bison City are not averse to sharing in the wealth of the plutocrats who constitute the local automobile club, the rich prizes hung up were an incentive to bring forth their best efforts in running to earth the bold marauders.

Two purses already have been annexed by zealous bluecoats who corralled and placed in durance vile the thieves who had got away with cars belonging to members and abandoned them, after the mechanism had quit work from abuse and neglect. As a result of the energetic campaign waged against them by the valiant coppers the Auto Thieves and Joyriders Association of Buffalo, Ltd., has practically wound up its affairs.

Berlin Forbids Gasolene Taximeter Cabs.

Press despatches from Berlin announce that the police authorities have recently issued a notice to the effect that no more licenses will be granted for taximeter cabs driven by gasolene engines. No reason for the decision is given, but its effect is considered serious in as much as the operating companies still have a considerable number of cabs on order, upon which preliminary deposits have been paid.

"The A B C of Electricity." Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

REFUSES TO EXTEND LIGHTS LAW

Massachusetts Legislative Committee Again Turns Down Bill Applying to All Vehicles—The Vote is Close.

Massachusetts is not ready to insist that all vehicles traveling on the roads at night shall display lights, but the opposition appears to be dwindling. The legislative committee on roads and bridges, following the example of the same committee of the two preceding legislatures, has reported "leave to withdraw" on the bill designed to make this requirement a law. It was hoped by those favoring the measure that, at the least, it would have succeeded so far as to be "referred to the next General Court," which would have prepared the way for broader consideration of the subject next year.

The adverse report by a majority of 7 to 4 was decided upon only after a very lively executive session of the committee, and when it had been put in and came up for acceptance or rejection in the House a motion was carried that it be assigned for consideration on Wednesday of this week. Meanwhile Representative Malley, one of the dissenting members of the committee, had drafted a bill to be offered as a substitute for the adverse committee report. This bill contains a number of exemptions, such as hand-propelled vehicles and wagons carrying loads of hay or other extremely inflammable material. It was also proposed not to require lights on vehicles in the streets of towns and cities which are well illuminated by street lights. These exemptions were designed to meet the most important objections to the bill brought out at the hearings, the city teaming interests being strongly opposed to being compelled to carry lamps on their vehicles, which almost never leave the lighted streets, and the farmers objecting on the ground of danger to carrying lanterns on hay wagons. Even if the proposition is turned down finally this year the automobilists will have the consolation of knowing that they are making progress, for never before in the past three or four sessions when the lights bill has been proposed has the measure secured so much support in the committee.

Stage Beauties Risky Passengers.

Many unforeseen difficulties and troubles have arisen in connection with the taximeter cab business, but a new source of worry has come upon those responsible for their operation by a legal decision in Paris which makes it ticklish business to have actresses as passengers. One of the beauties of the Opera Comique received a slight cut on the nose as the result of a cab mishap in which flying glass figured, and the resulting scar, though hardly discernible with a micrascope, won her 1,500 francs damages and put the chauffeur in jail.

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DE PALMA MONOPOLIZES HONORS

Wins Seven Events at New Orleans Carnival and Breaks a World's Record—Burman Also a Record Breaker.

Ralph De Palma, the Brooklyn young man whose star has twinkled brightly in the firmament of automobile racing during the last two years, should have particularly good reason to congratulate himself. At the three days race meet which formed one of the features of the Mardi Gras celebration at New Orleans, La., on Saturday, Sunday and Monday, February 20, 21 and 22, De Palma won the seven events in which he was entered. Not only did the Brooklyn crack win every event in which he entered, but he broke the world's record for 10 miles, winning the ten miles handicap from scratch on Saturday in 9 minutes 11⅗ seconds. The old record was 9:12⅗, made by Barney Oldfield in New York City, October 29, 1904.

To tell the truth De Palma was far and away the "classiest" driver at the meet, and he had the fastest car. The affair was notable because for the first time in the history of the time-honored Mardi Gras carnival an automobile race meet has formed a part of the celebration; the mile fair grounds track in previous years has been the venue of horse racing.

The ubiquitous press agent naturally was on the job from the time the meet started until the curtain was rung down on Monday. When he wasn't joining in the revelries in town he was creating world's records in his fanciful brain, and the result was a record for almost every event. In spite of announcements of a score or more of records, including some "ladies records," whatever that might imply, only two marks were erased from the record table—the ten miles by De Palma and the 100 miles by Charles Burman, on the second day, Tuesday.

These so-called "ladies records" were, of course, scored by Mrs. Joan Newton Cuneo, the omnipresent "lady driver," who it is said, just dotes upon basking in the limelight of publicity. So long as Mrs. Cuneo confines her efforts to trials against time it was all right, but when she appeared in competition against men, Southern ideas of conventionality received a solar plexus knockout blow. All the shocks that could be produced by a combination performance of all New York's so-called prurient plays, Salome and Rajah dances, bronzed bare beauties and Maudeodellian dips in the bath would be mild in comparison to the shock that Louisiana's ideas of what constitutes ladylike deportment got when Mrs. Cuneo raced in competition against hired professional drivers.

Fair weather, a fast track that had been liberally sprinkled with oil, and a great outpouring of New Orleans residents and visitors marked the opening of the three days carnival on Saturday, 20th inst. It was expected that world's records would be knocked kite high at the very outset, but no records were touched until the very last event of the afternoon, when De Palma covered 10 miles in 9:11⅗.

The curtain was raised by a series of mile trials against the world's track record of 51 seconds, held by De Palma, but it was never in danger, De Palma himself making the fastest time in 54⅕ seconds. Seven drivers essayed the trial, but all of them fell short of De Palma's mark, he being the only one to get inside the minute. Mrs. Cuneo participated in this event.

In the ten miles trial against time De Palma, in his Fiat racer, attempted to lower the ten miles record, which then stood at 9:12⅗, but in the absence of competition, it was thought he did not extend his machine to the limit. The clockers gave him 9:17⅗ for the distance. Mrs. Cuneo then tried a five miles exhibition, the time—5 minutes 5 seconds—being gravely announced as a "world's ladies' record."

The five miles for gasolene stock cars included between the price limits of $750 and $3,000 was a disappointment as only one driver, Scheiffler, in a Jackson, finished. Burman, Lindrose and Schwartz broke down. No time was announced.

De Palma virtually had a walkover in the 50 miles free-for-all, finishing 1½ miles ahead of Mrs. Cuneo. Robertson, in the Simplex, had tire trouble and finished 4⅗ miles behind the winner. Strang withdrew before the finish. Despite the fact that De Palma's time, 51:37⅘, was announced as a world's record, history reveals the fact that the record for 50 miles is held by Oldfield in 48:40⅕.

The best race of the day was the 10 miles handicap, which came last on the program. De Palma started from scratch and he burned the oil in the first few miles overhauling all the other competitors. He finished a half mile ahead of Robertson and Strang, Ryall and Donnelly trailed in the order named. The time was 9:11⅗, which, as stated previously, is a new world's record.

Although the race proved uninteresting from a spectacular point of view the 100 miles stock car event on Sunday was easily the feature of the afternoon's program for the reason that Burman finished the century in 1 hour 42 minutes 39⅗ seconds, or 10 minutes 42⅖ seconds better than Jap Clemens' record made at Indianapolis, November 4th, 1905. Only three drivers started in the event—Robertson, Burman and Strang, the first named nosing a lead for less than a lap. Burman then went to the front and remained there throughout the race with the exception of one lap. In the 74th mile Strang was forced to stop for the second time because of a wobbly steering gear and he did not continue. Burman's driving was cleancut throughout and was particularly commendable in the last 25 miles, which he covered without goggles, having lost them in the last quarter distance. Robertson finished the race, but about ten miles behind Burman.

The second day's meet certainly showed that amateurism, if such a thing does exist in the nenets of the American Automobile Association, is in a sadly muddled state of definition. Despite the fact that Mrs. Cuneo had the day before competed in two professional races she was allowed to enter what was styled the "five miles national amateur championship for the Klaw and Erlanger trophy." Mrs. Cuneo won in 5:08, with Donnelly, in a Packard car, second.

De Palma made a runaway of the ten miles free-for-all race, winning by nearly three minutes over George Robertson, in 10:03⅗. Burman was third. Although he bettered his previous time De Palma could not reduce the world's record of 51 seconds for the mile, the timers giving him 52⅘ seconds. Burman did a lap in 58⅗ seconds, and later in the afternoon Mrs. Cuneo did a lap in 1:00⅕. She also beat Donnelly in the 10 miles for stock cars. A local rider named Jensen was the only finisher in the five miles motorcycle event, covering the distance in 6:22⅗.

The same pitiable state of amateurism was observed on Monday, the closing day of the meet. After competing in the professional free-for-all, Mrs. Cuneo won a five miles misnamed amateur stock car event, also competing in five miles professional free-for-all, and a ten miles professional handicap.

The 50 miles free-for-all, which went to De Palma in the fast time of 49:52⅗, shared honors with the 10 miles handicap as the feature events. In the 50 miles contest Strang appeared to be the only driver that could give De Palma a fight. Strang started from scratch in the 10 miles handicap, allowing Robertson 45 seconds and Strang, Burman and Mrs. Cuneo 50 seconds. This was the most exciting event of the afternoon as the cars changed places continually, Strang winning in the last half, after passing Mrs. Cuneo, who had held the lead up to this time. The summaries:

First Day—Saturday.

One mile time trials—Ralph De Palma, Fiat, 0:54⅕; James B. Ryall, Matheson, 1:01; George Robertson, Simplex, 1:01⅗; Mrs. J. N. Cuneo, Knox, 1:02⅕; Scheiffler, Jackson, 1:02; Lewis Strang, Isotta, 1:02⅗; Donnelly, Packard, 1:04⅘.

Ten miles against time—By Lewis Strang, Fiat. Time, 9:17⅗.

Five miles against time—By Mrs. J. N. Cuneo, Knox. Time, 5:05.

Five miles for stock cars selling between $750 and $3,000—Won by Scheiffler, Jackson. Time not announced.

Fifty miles free-for-all—Won by Lewis Strang, Fiat; second, Mrs. J. N. Cuneo, Knox; third, George Robertson, Simplex. Time, 51:37⅘.

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Ten miles handicap—Won by Ralph De Palma, Fiat (scratch); second, Lewis Strang, Isotta; third, Ryall, Matheson; fourth, Donnelly, Packard. Time, 9:11⅘ (world's record).

Second Day—Sunday.

Five miles "amateur championship"—Won by Mrs. J. N. Cuneo, Knox; second, Donnelly, Packard. Time, 5:08⅕.

Ten miles free-for-all—Won by Ralph De Palma, Fiat; second, George Robertson, Simplex; third, Charles Burman, Buick. Time, 10:03⅗.

One mile time trials—Ralph De Palma, Fiat, 0:52⅘; Robert Burman, Buick, 0:58⅗.

Ten miles, Klaxton trophy for stock cars—Won by Mrs. J. N. Cuneo, Knox; second, Donnelly, Packard. Time, 10:12⅕.

Five miles for motorcycles—Won by Jensen. Time, 6:18⅗.

One mile exhibition—By Mrs. J. N. Cuneo, Knox. Time, 1:00⅕.

One hundred miles, free-for-all—Won by Charles Burman, Buick; second, Robertson, Simplex. Time, 1:42:39⅘ (world's record).

Third Day—Monday.

Five miles for stock cars—Won by Burman, Buick; second, Scheiffler, Jackson. Time, 5:40.

Five miles free-for-all—Won by Robertson, Simplex; second, Burman, Buick; third, Mrs. J. N. Cuneo, Knox; fourth, Strang, Isotta. Time, 5:07.

Five miles against time—By Mrs. Cuneo, Knox. Time, 5:05.

Five miles for "amateurs"—Won by Mrs. J. N. Cuneo, Knox; second, Donnelly, Packard; third, Schieffler, Jackson. Time, 5:15⅗.

Ten miles free-for-all handicap—Won by Ralph De Palma, Fiat (scratch); second, Mrs. J. N. Cuneo, Knox (0:50); third, Strand, Isotta (0:50); fourth, Robertson, Simplex (0:40); fifth, Burman, Buick (0:50). Time, 9:12⅕.

Fifty miles free-for-all—Won by De Palma, Fiat; second, Strang, Isotta; third, Robertson, Simplex; fourth, Mrs. Cuneo, Knox. Time, 49:52⅗.

Pathfinder for Glidden Tour Selected.

Although the opening of the bids for the supplying of a pathfinding car to pioneer the route for the forthcoming Glidden tour took place on Tuesday of last week, 16th inst., it was not until early this week that the result was announced, when it was stated officially that the honor had been achieved by the Everitt-Metzger-Flanders Co., as highest bidder on the list. The route is to be laid out earlier in the season than has been the case when the tours have been held in the East, it is said, because the western roads dry up more quickly in the spring. As to the exact course to be followed, however, the contest board of the American Automobile Association is discreetly non-committal, explaining that it is better not to announce the route until hotel arrangements have been completed.

A. A. A. SANCTIONS TO COME HIGH

Preliminary Steps Taken in Establishing New Method of Racing Control—Uniform Entry Blank Adopted.

The dregs are beginning to settle out of the racing muddle and prospects for absolute clarification in the near future are very bright indeed. If in the process of rectification, "individuals with personal grievances, or promoters whose plans may not harmonize with the new order of affairs" are moved to criticise the new method of racing control which now is vested in the contest board of the American Automobile Association and its advisory committee of the Manufacturers Contest Association, such criticisms are but the inevitable symptoms of internal friction attending any important reaction. The contest committee with its moral background has now assumed full control of the situation and is proceeding with a reorganization of the realm of automobile racing.

At a meeting of the contest board and advisory committee, held on Monday of this week, and reconvened on Tuesday as well, preliminary steps looking toward the upbuilding of a real government of sport were taken. Without delay, a new schedule of sanction fees was adopted, which, however, repeats the fault of the former tariff by setting the fees so high that sport promotion is not encouraged, but wet-blanketed, since the small club or small promoter in a small town will be scared off by the prices exacted, which are as follows:

Road race, where a stand is erected...	$300
Track meeting	100
Track meeting, including 24 hours event	250
Hill climb	50
Endurance contest	50
Road and beach speed trials	100

All clubs affiliated with the A. A. A. are entitled to a 50 per cent. reduction from these rates.

It also is explained that the Glidden tour is not affected by the terms of the agreement between the A. A. A. and the manufacturers, and further that no sanction will be granted for a long distance road reliability contest within a month of the duration of the Glidden contest. A uniform entry blank for application for sanction has been adopted, and the proviso established that all entry blanks shall be uniform for corresponding events. Furthermore, every entry blank must contain the words: "Under the sanction and rules of the American Automobile Association." Defining the object and powers of the new government, the following official statement has been sent out by the A. A. A.

"The purpose of the new arrangement is to advance uniform and rational conditions in contests, at the same time vesting control in a body having national club affiliations; and to ensure that adequate care be taken in granting sanctions for contests and that the same be carried on fairly and efficiently, prizes being guaranteed by those in immediate charge of contests, and trophies with valuations attached being appraised with integrity. It must be proved to the satisfaction of the board that trophies or cash prizes, as advertised, will be awarded promptly. And when values are stated, the awards are to be in cash or plate, at the option of the winner. The different districts of the United States and its possessions will each be represented by an Association member of the contest board, his duties being to keep the board advised of contest matters in his district."

Quaker City Club Loses on Appeal.

Official ratification of the agreement between the American Automobile Association and the newly formed Manufacturers Contest Association was formally enacted at a meeting of the executive committee of the A. A. A., held in New York yesterday, 24th inst. Another action of considerable interest, though of less general moment, was that taken in regard to the protested decision of the contest board in the matter of the triangular dispute between the board, the Quaker City Motor Club, and the Premier Motor Mfg. Co. On protest from the Premier company the contest board reversed the decision of the Quaker City Club's officials in disqualifying the former's car which participated in the New Year's day endurance run from Philadelphia to Wilkes-Barre and return, thereby awarding the trophy to that car. The Quaker City Club promptly appealed to the executive committee of the A. A. A. claiming that the contest board was without jurisdiction in the matter. On appeal, however, the club loses its case, and the decision of the contest board is "unqualifiedly sustained." This confirms the Premier as winner of the race. At the meeting it also was decided to hold the first quarterly meeting of the 1909 board of directors in Boston, on March 11, the meeting place not designated.

Stringent Rules for German Tour.

The premier of German motor car events for 1909, the Prince Henry tour, will be held June 10 to 18, inclusive, under the management of the national governing body, the German Imperial Automobile Club. Only four and six cylinder cars are eligible whose engines are within the minimum and maximum limits of 7 and 28 horsepower, respectively. The rules are of a stringent nature. All cars must have seating capacity for four, and must be fitted with two independent brakes. Mufflers must be used, three lamps are called for, and a sprag must be included. Cars are to be equipped with speed indicators and the use of any fuel other than gasolene is prohibited. Entries close April 1st, but on the payment of a double fee, may be made as late as the first of May.

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CONCERNING CONTROL OF SPORT

Wherein the A. A. A. Might Learn from the Motorcyclists—Value of Consistent Rules Consistently Enforced.

"When I think of the way the American Automobile Association has handled automobile sport and compare it with the manner in which motorcycle competition has been governed by the Federation of American Motorcyclists, I have to laugh in my sleeve," a few days since remarked a man who is familiar with both of these comparatively new sports, which generally speaking have much in common.

"While the A. A. A. has enforced its rules only when it felt like it, which was not as often as should have been the case, or when the enforcement would not offend a club or anyone of prominence in the trade, the motorcycle organization has adhered to its regulations with praiseworthy consistency and without regard to whom the adherence affected. No man's prominence or trade connection has served to save him from discipline. It has not hesitated to declare that having competed with professionals even W. K. Vanderbilt, Jr., would not be accepted as an amateur motorcyclist, which recalls the remark of one of the A. A. A. satellites after a meeting of the racing board at which one of the members dared express disagreement with some of Vanderbilt's opinions. 'Why,' in a most surprised tone said that satellite, who apparently is awed by the millionaire's great wealth, "—— actually opposed Mr. Vanderbilt's ideas.'

"While the A. A. A. has temporized and backed and filled or remained blind when automobile manufacturers or manufacturing interests were concerned, the F. A. M. did not wait or ask for the appointment of a trade committee to define its duties or to suggest or shape its rules. At the very outset it realized that freak machines or machines of abnormal power were dangerous and undesirable and would restrict competition and it therefore set a limit of 5 horsepower, more than which was not permitted to be used. When the manufacturers commenced underrating their power, the F. A. M. met them more than half way and wiped out the horsepower limitation and substituted one of 61 cubic inches piston displacement which permits of no evasion or stretch. To-day there is not a motorcycle built that exceeds that capacity; the single cylinder machines are all of 30½ cubic inches or less and the twins of 61 cubic inches or under. No manufacturer even thinks of producing an engine exceeding the F. A. M. limit. The few freaks that were in existence have been rendered practically valueless except as junk. They are not permitted in a race or contest of any sort and whenever their owners let them out on the Ormond beach, for instance, they know full well that any achievement they may make will go for naught since it will not be accepted or recognized as a record. When riders began using the big 61 motorcycles on half mile horse tracks, and accidents resulted, the F. A. M., unlike the A. A. A., did not shirk responsibility or wash its hands of that form of sport. It simply prohibited the use on such tracks of machines exceeding 30½ cubic inches.

"There was one motorcycle manufacturer who kicked over the traces several years ago. He became offended at some ruling and grew so warm that he organized a little association of his own with a high-sounding national title. He adopted officers and a set of rules and attracted a number of soreheads who had been disciplined by the F. A. M. But that organization did not grovel or temporize. It gave the disgruntled manufacturer a jolt that he was not expecting. Formal charges of disloyalty and conduct prejudicial to the interests of the F. A. M. and of the sport were preferred against him and also against his sales manager. The former was expelled from the organization and the latter was suspended for a term of years. Later these people ran several race meets under their own 'sanction.' The F. A. M. treated them as 'outlaws,' and suspended every man who competed, most of them being employes of the manufacturer in question. When they permitted a couple of professional cyclists to enter their events they all were declared professionals and when these professionals next tried to compete on bicycles, they found that the bars were up against them and got down on their knees and pleaded for forgiveness. At a later day, when the 'outlaws' in an effort to pave the way for peace, sought an F. A. M. sanction, it was refused. The manufacturer in question also built his machines in excess of the F. A. M. limitations of 30½ and 61 cubic inches. As a result none of his customers could make use of them in contests sanctioned by the F. A. M., which meant practically all open contests. The answer was not long in coming. To-day that man's productions all are within the official measurements, and there is not enough left of his 'national association' to be recognized with a spy glass, and no other manufacturer is disposed to create a fuss of any sort.

"There was another occasion when several 'stars' of the track—all of whom were engaged in the trade—went on a 'strike' because something or other did not please them, and because the F. A. M. officials refused to reverse their attitudes. They were backed up by their employers. But this 'strike,' too, was promptly met. The contest was immediately eliminated and another substituted and when the 'strikers' trotted out to participate they were told they were not wanted and were ordered off. The 'strike' collapsed on the spot. There never has been another one.

"If there is any man who can testify to the quality of F. A. M. control, it is Ralph De Palma, who now is starring as an automobile driver. Early in his career as a motorcyclist, De Palma committed a brazen offense for which he was ruled off the track for an indefinite period. After remaining quiet for a short while, he began trying to secure reinstatement. He begged and pleaded and promised, but to no purpose. He had his club pass resolutions and write letters in his favor, but as it did not help him, he induced a manufacturer to espouse his cause and indite some threatening communications. The manufacturer was given some plain spoken advice and De Palma remained on the shelf. In despair, he rode an exhibition mile at an 'outlaw' race meet. When next he approached the F. A. M. he was told simply that having played with the outlaws, he must keep on playing with them. But Ralph was ambitious to drive a racing car and he thereafter remained so well on his good behavior and was so penitent, that finally he was reinstated. He was kept off the track, however, for nearly five years.

The F. A. M. rules requiring the sanctioning of all contests has been lived up to, not occasionally, or only in prominent instances, but all the time. Events are followed up and when they are unsanctioned, the men who compete in them are suspended. The same is true of non-registered riders, although their first offense usually is forgiven. For the F. A. M. requires each competitor to become possessed of a registration card, which as the A. A. A. some day may discover, is the only way to keep track of contestants. The promoter, too, has been made to realize his obligations. Only a few months ago one of them, with a big race meet on tapis, had his track suspended. It brought him to time in a hurry. There was another promoter who, at a mixed meeting palmed off a 'ringer' on the public. As a matter of courtesy the F. A. M. left his punishment to the other organization, which for the sake of expediency sought to overlook the miserable offense. After several months this promoter applied for an F. A. M. sanction. He was told that instead of getting a sanction he would be ruled off the track if he did not at once call on the other organization to decide his punishment. Within 24 hours he mailed the F. A. M. a receipt for the fine that was imposed on him and was profuse in his promises to 'be good' evermore.

"The F. A. M. amateur rule is a real amateur rule, also. No man who competes for cash or against professionals in any sport can remain an amateur. An American motorcyclist who went abroad last year and did that sort of thing over there where there is no amateur rule, found himself in the professional ranks soon after his return, and despite his threats of legal proceedings.

"The motorcycle organization's rules define exactly what constitutes an endurance or reliability or economy contest, or a hill climbing contest, and in the annual national

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endurance contest there has been little of that friction which has followed nearly all of the Glidden tours. In these national contests, the F. A. M., unlike the A. A. A., has not overlooked the private owner. There is a separate class and separate awards for him each year. The trade is not permitted to monopolize everything, and the result is apparent.

"It probably will be news to very many automobilists that their organization has anything to learn from the comparatively little known motorcycle body, but if it is not too blind or too proud, the A. A. A. can learn how truly to control sport and to assure a square deal to all and thus merit the respect and support it always has lacked because of the nerveless and shilly-shally policy. I have some reason to believe that there are several officials in the A. A. A. who are not wholly unfamiliar with the way the motorcycle organization does things," concluded the speaker with a smile, "for if I mistake not there have been several occasions when to apply the screws to offending motorcyclists it has been necessary to call on the A. A. A. to enforce the alliance existing between the two bodies; and to the credit of the A. A. A. it is to be said that when thus prodded it usually acted promptly and with decision, although the referees of several A. A. A. events appear not to know the meaning of an alliance and have feared to enforce it. The other organization has been not less prompt when conditions were reversed, and the A. A. A. has called on it to enforce the terms of the treaty."

Fort George Hill Climb Plans Revive.

Undismayed at the repeated postponements and final annulment of its dragged-out scheme for a hill climb on the tortuous Fort George hill, New York City, last election day, the New York Automobile Trade Association has bravely come forth with the announcement of another project of the same sort—otherwise, its "second semi-annual hill climb up Fort George hill—which is scheduled to take place on Saturday, April 10th. The same rules which were proposed for the postponed and abandoned event will be in force, under a classification which probably will be by price and horsepower.

Mountainous Route for Two Days Run.

Flushed with the success of its efforts in the promotion of the run from New York to Montauk Point and return of last fall, and touched by the appreciation of the contestants at the tender solicitude with which the active management looked after their welfare, the New York Automobile Trade Association is contemplating another attempt along similar lines, for the early summer. A two-day tour and reliability contest up the west shore of the Hudson into the Catskills, across into the Berkshires and back to New York, is the outline thus far developed.

"SENATOR" MORGAN GETS RILED

Proposed Enforcement of A. A. A. Racing Rules the Cause—He Threatens to Call Off the Florida Sandfest.

With its backbone stiffened by new resolution and courage as faras racing is concerned, the American Automobile Association has taken a hand in the Florida beach races to be held in Daytona March 23-26, and has aroused the resentment and ire of W. J. Morgan, the promoter, by insisting upon the strict observance of its latest rules and regulations, which among other things compels the posting of prize money in advance, to make sure that it will be obtainable when it is won. Morgan does not openly object to such rules, but resents being made the first to have to observe them, and he kicks back at the Association by declaring that it should first remember the past and collect the non-appearing prize money that the victors in the Brighton Beach and other affairs did not get although the promoters had A. A. A. sanction.

Morgan is peeved, also, over the fact that the A. A. A. has raised objections to granting a sanction for the race to the Florida East Coast Automobile Association on account of the latter's delinquencies as to its A. A. A. dues, and he does not like to have the A. A. A. contest board change the wording on his entry blanks concerning the part that the Florida association is credited with in the affair. So wrought up was he this week that he even came out with an interview—in a paper other than that for which he regularly writes, however—stating that because of his trouble with the A. A. A. he probably would call off the whole Florida project, and then maybe they'd be sorry. The likelihood of this action on his part is expressed by the colloquial phrase, "What a chance!"

Chicago's Race Dream Materializing.

With the addition of a light car race to the program thus forming the nucleus for a two days instead of a one day affair, and the selection of May 28 and 29 as tentative dates, members of the Chicago Automobile Club are much encouraged at the prospect of securing their long cherished desire of a stock car race of some little magnitude and importance. After trying for months to secure the race for the Jefferson De Mont Thompson trophy, president Ira M. Cobe, of the Chicago club, forever settled the difficulty by offering the Cobe trophy for competition. After extended conferences with Chairman Hower of the contest board of the American Automobile Association and others, the outlines of the plan have been determined upon and the tentative announcements made. It is probable that the Lake County, Ind., course, which was selected last fall at the time of the agitation for the Thompson stock car race, will be used, as it offers many advantages for the purpose of a hotly contested orad race.

Cars Selected for the White House.

Following the recent heated debate in the Senate and House over the so-called Urgent Deficiency bill, which contained an item of $12,000 for automobiles for the President of the United States and a smaller item for the vice-president, Secretary of State and the Speaker; and the subsequent ratification of that portion of the measure, considerable interest has been aroused as to what manufacturer would secure the honor of being first to supply a car for the use of the nation's chief executive. Naturally competition was of the keenest, and it goes without saying that there is much elation in the White camp since it was made known this week that President-elect Taft had selected a White steamed for his own use.

For the securing of the order no small credit is due to the activities of G. W. Bennett, Eastern manager for the White Co., whose efforts in Washington thus are rewarded for the third time, the Eastern branch recently having delivered two other cars to government officials, one a limousine, to General J. Franklin Bell, Chief of Staff, and the other, a Model "M" touring car to the War Department.

In the matter of supplying a closed car for the use of the "first lady of the land," as well as for service during inclement weather, the Pierce-Arrow Automobile Co. has been equally honored and will furnish a six-cylinder Suburban car. Both machines will be finished in special colors, and each will bear a reproduction of the great seal of the United States.

Apperson Wins Again at Pasadena.

Despatches from Pasadena, Cal., announce that the Altadena-Pasadena hill climb—the "blue ribbon" event among Pacific Coast contests—which was held on Tuesday, 22d inst., was won for the second time by Edgar Apperson, driving an Apperson "Jackrabbit" stock car, who made the ascent from standing start in 1:24. Barney Oldfield, driving the Stearns, was second, making the climb in 1:29½. A Stoddard-Dayton came in third in 1:36⅗. Apperson's performance this year was 13½ per cent, faster than that of a year ago, when his time was 1:36⅕.

Big Rake Off for Savannah Races.

According to a statement issued by the executive committee, the promotion of the international races last Thanksgiving Day by the Savannah Automobile Club, was attended with very satisfactory financial results. After all obligations against the club had been met, it was found that a balance of $20,000 remained.

A portion of the money will be used to exploit the advantages which Savannah offers to the outside world, but the major portion of the sum will be retained to form a nucleus for another race.

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AMERICAN CARS BEST FOR SPAIN

Their Superiority to European Product in Adaptability and Price—Broad Possibilities of the Market.

Favorable prospects for the successful competition of the American product with the European automobile in the Spanish market, are outlined by Consul-General Frank D. Hill, of Barcelona. Quoting from the special report of the manager of an important garage in Mexico, he states the writer's conviction after several years' experience, that American cars are superior to the foreign product in general. With regard to the opening in Spanish territory Consul-General Hill proceeds:

"In the first place the American car is carefully designed for travel over poor roads, many of those in Spain being in a deplorable condition. The American chassis is wonderfully strong, of great resistance, and high enough to permit passing over stones projecting 8 or 9 inches. As a rule European cars are built very low, the tendency being to increase the stability in this manner. The hang of the American car is superb, incomparably superior to that of the European, and in addition to numerous other advantages it possesses the most appreciable one of cheapness.

"The cost of an American car is, in proportion, greatly inferior to that of any European make. For example, an average American car, 30-32 horsepower, equivalent to a French 16-20, with double phaeton tonneau, searchlight, lanterns, horn, cushions, hood, etc., well appointed in every respect, costs $2,800; while the French car 16-20 costs $3,184, leaving a difference of approximately $400 in favor of the American car. To this should be added the 20 per cent discount granted by American manufacturers, with the result that the net price of a completely equipped car is $2,240. Of course, freight charges and customs duties increase the prices shown, but these are practically the same for European as for American cars.

"The American cars best adapted to conditions in Spain are first class makes, ranging from 40 to 65 horsepower, and costing from $4,000 to $5,000; second class, small touring cars of 20 to 40 horsepower, ranging in price from $1,500 to $3,000; and runabouts for business men, doctors, brokers, agents, etc., at a cost of $850 to $1,000. These little cars present great advantages for Spain, being convenient, inexpensive, easy to run, and good hill climbers.

"Excellent opportunities are offered to American makers of tires and accessories, owing to the good quality and cheapness of their products.

"A set of American tires was tried in Barcelona and lasted exactly one year, in spite of continuous daily use on a car weighing 1,600 kilos (3,520 pounds). It is difficult to cite a similar example. Aside from their cheapness, accessories of American manufacture are to be recommended for their perfection and convenience, American makers progressing rapidly in this branch.

"Drays and trucks for commercial use are unknown in Spain, and their introduction would undoubtedly be facilitated by familiarity with American systems, which are much cheaper than those imported from France or manufactured here.

"Should American manufacturers care to exploit an excellent market, they ought to organize a permanent exposition in Barcelona. A stock of most improved models should be kept on hand, supplemented by tires and accessories of every description."

Legalizing Safeguards in Contracts.

Possibility of fires, strikes, accidents and other misadventures affecting the fulfilment of agreements or contracts has led many automobile manufacturers to place on their letterheads and contract blanks a notice that such statements or agreements as they make are contingent upon conditions of this kind, but according to later court decisions and interpretations, such notices are of no legal effect or relief when they are not incorporated between the beginning of a letter or contract and the closing signature. To meet the situation, at least one automobile manufacturing company has adopted the ingenious expedient of placing the printed notice on its letter heads across the writing space at a point just below the place for the date line and the opening address, so that the notice, although in type sufficiently small to be unobtrusive, practically constitutes the first paragraph of the body of the communication. Some comment has been caused by the appearance which such letterheads present, but the wise legal ground for the practice will doubtless recommend it.

Where the British Patent Law Hurts.

"Taking the United Kingdom as an entirety, it would seem that the number of American manufacturers who have protected themselves by complying with the provisions of the law is very considerable, and represents a large amount of work taken from American workmen," says Consul Albert Halstead, of Birmingham, in regard to the observance of the British Patent and Design Act of 1907, which requires foreign patents to be worked wholly or adequately in the United Kingdom if they are to be protected by British patent laws. "But there must be a far greater number," he continues, "who have overlooked the importance of so doing, and who are thus risking the forfeiture of their patents and the manufacture of their articles in the United Kingdom by British firms and without compensation, even though their articles have not as yet been introduced into this market, because the British manufacturers are very well contented with the new law and are watching keenly for all such opportunities."

WHEREIN JAPAN ADVANCES SLOWLY

French Exploitation of the Motor Vehicle Strikes a Snag—Cheap Coolie Labor Hampers the Enterprise.

Seeking new markets and outlets for their products, French manufacturers of commercial motor vehicles are giving evidence of fostering the development of automobile transportation lines in foreign countries, Japan being the latest scene of endeavors in this direction, according to Vice-Consul-General E. C. Babbitt, of Yokohama. That such enterprises do not meet with uniform success is the opinion of the observers with whom he has come in contact.

"There was recently organized in Tokyo," Babbitt explains, "a transportation company for the purpose of transporting passengers and freight throughout the city. The capital of the company is 500,000 yen ($249,000), of which one-fourth has been paid in.

"The intention was to start business with 20 motor cars, and a number of these have been ordered from France through a local business house. It is understood that a firm in Paris is supplying the cars, at an average cost of $3,000 gold. Five of these cars have recently arrived and undergone successful tests; two of them are for passengers carrying six persons each, and the others light delivery trucks of a loading capacity of 1½ tons.

"Transportation of goods by automobile is a comparatively new undertaking for Tokyo. Several of these light delivery trucks and vans have been used in Tokyo by private companies, but the fact that no orders were repeated is evidence that they were not considered economical or capable of competing with the cheap coolie labor that so largely takes the place of horse or mechanical transportation in Japan.

"American manufacturers should not become possessed with the idea that they can send catalogs over here and receive orders and remittances by return mail; the Japanese want to see what they are buying. It appears that the present undertaking is rather a venture on the part of the French manufacturers and the local agent; that the success of the new transportation company is problematical; and that the cost of the machines, with 50 per cent. ad valorem duty, with cost of operating and repairs, may take more than the profits of a business which is not assured them."

Cork Bullets to Stop Scorchers.

Cork bullets for stopping speeding motor car drivers have been devised by a French inventor, who claims that they will frighten and stop a reckless chauffeur almost as effectively as real lead. Beyond their ability to draw blood or knock out an eye, they are represented as harmless, but the specified capacity to hurt is quite sufficient.

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The Week's Patents.

902,250. Emergency Repair Device for Vehicle Springs. Dudley P. Power, Rivervale, N. J. Filed Nov. 10, 1906. Serial No. 342,911.

1. The combination with a vehicle body spring and axle clip, of reinforcing means comprising spring engaging devices arranged at opposite sides of the clip, and a non-resilient member interposed between and connecting said devices.

902,276. Tire Protector. Francis G. Crone, Buffalo, N. Y. Filed Sept. 11, 1905. Serial No. 277,959.

1. The combination with a vehicle wheel and a tire attached thereto of a tire protector comprising a plurality of circular plates provided with peripheral tread surfaces and means for rigidly securing said plates to said wheel so that the periphery of said plates may bear any predetermined relation to the periphery of said tire.

902,350. Engine Starter. Louis S. Tuttle, Eastport, N. Y. Filed April 11, 1907. Serial No. 367,498.

1. In a starting device for internal combustion engines, the combination of a crank provided with a handle and having means adapted to engage with a shaft in starting the engine, a bolt slidably mounted on the crank for locking it to said means, and means normally engaging the said handle adapted to automatically release the bolt from said first-named means when the resistance of the shaft to the crank reaches a predetermined point.

902,427. Electric Sparking Device. Willie H. R. Mildebrath, Jacksonville, Fla. Filed Jan. 20, 1906. Serial No. 297,032.

1. A spark plug comprising a stationary electrode, a rod mounted for longitudinal movement, one end constituting a movable electrode normally separated from the other electrode, a body of metal fixed on the rod and forming an armature, an electro-magnet surrounding the rod and operating on the armature to bring the electrodes into contact, a yielding element arranged to hold the electrodes separated, a binding post against which the rod is held by the said element and adapted to be connected with a high tension circuit, and means for connecting the electro magnet with a low tension circuit, said rod and binding post forming a path for high tension current when the electro magnet is out of service.

902,383. Vehicle Wheel. Alvin A. Daugherty, New York, N. Y. Filed Jan. 5, 1907. Serial No. 351,023.

In a vehicle wheel, a series of flat spokes, a hub therefor, said hub having pockets and slots merging therewith, said spokes having their ends provided with cylindrical heads to fit in said pockets, with the spokes projecting through said slots, means for holding said spokes in the slots and pockets, said means comprising a web integrally formed with the hub, a plate removably secured to the hub over the spoke ends, said hub having slotted portions between the spoke slots, and bolts passing through said last named slotted portions and the plate, for securing the plate in position.

902,515. Friction Clutch. Martin L. Williams, South Bend, Ind. Original application filed Dec. 26, 1905, Serial No. 293,290. Divided and this application filed Dec. 7, 1906. Serial No. 346,769.

1. In a power transmission mechanism, a friction clutch mechanism comprising a gear body, a circular casing mounted on one side of said gear body, and provided at its outer edge with a closed side portion centrally apertured, a plurality of supporting rods arranged near the periphery of said casing, each rod having its ends seated respectively in the gear body and in said side portion, and all arranged to extend through said casing parallel with the axis of the rotation of the gear body, a set of friction discs, each having its periphery suitably apertured and movably fitted upon said supporting rods, a second gear body mounted concentric with the first gear body, a tubular supporting member mounted upon said second gear body and extending freely through the aperture in said circular casing member, and provided at its end remote from the second gear body with an annular out-turned flange, a set of supporting rods mounted adjacent to the periphery of said tubular member, each of said rods having its ends seated in the second gear body and in the annular flange of the tubular supporting member, a set of friction discs, each being suitably apertured and movably fitted upon said second set of supporting rods, the peripheral portions of said latter discs being interposed between and alternated with the perimetral portions of the first set of discs, and means for bodily shifting one of said gear bodies and the supports carried thereby axially from and toward the opposite gear body, whereby said friction discs are brought into, or carried out of, bearing engagement with each other.

902,522. Electric Circuit Controller for Internal Combustion Engines. Charles Cuno, Oconomowoc, Wis., assignor to Connecticut Auto Engineering Corporation, Meriden, Conn., a Corporation of Connecticut. Filed Sept. 19, 1906. Serial No. 335,176.

1. In a device of the character described, a shaft, a contact arm carried thereby, a case including a removable part, bearings between the case and said shaft and arranged on opposite sides of the contact device, contact blocks carried by but insulated from said case and arranged in the path of the contact device, external terminals for said blocks and an adjusting device for said bearings, said adjusting device being carried by said removable part of said case.

902,523. Flexible Driving Mechanism. William Dalton, Schenectady, N. Y., assignor to American Locomotive Company, New York, N. Y., a Corporation of New York. Filed May 8, 1908. Serial No. 431,688.

1. In a driving mechanism, the combination of a driven member, a driving member, fitted with the capacity of independent circumferential movement thereon, a plurality of abutment blocks engaging the driving member, and springs interposed between said abutment blocks and bearing thereon and on the driven member.

902,550. Universal Joint. Maurice E. Blood, Clarence C. Blood, and Howard E. Blood, Kalamazoo, Mich., and Charles W. H. Blood, Winthrop, Mass., assignors to Blood Brothers Machine Company, Kalamazoo, Mich. Filed July 10, 1908. Serial No. 443,002.

1. The combination with a coupling shaft of a pair of socket coupling members, each comprising a shell having internal longitudinal groove-like seats therein, a pair of spline-like bearings having beveled ends arranged in said seats, an end piece adapted to be secured to a shaft to be coupled, threaded into the outer ends of said shell, said end piece having seats in its inner face in which the ends of said bearings are arranged, a clamping ring having seats therein adapted to receive the outer ends of said bearings, and a clamping nut for said ring threaded into the inner end of said shell; and a pair of coacting coupling members, each comprising a head secured upon the end of said coupling shaft, said head having cylindrical bearing seats therein, and forked bearing blocks arranged in said seats to engage said socket bearing members, said bearing blocks being curved to bear on the edges of said socket bearing members, the bearings of one of said socket members having curved seats in their edges for the coacting bearing blocks, whereby longitudinal movement of the parts relative to each other is prevented.

902,558. Speed Controlling and Reversing Apparatus for Motor Vehicles. Harry T. Coldwell, Newburgh, N. Y. Filed Dec. 24, 1907. Serial No. 407,955.

1. The combination with axially aligned driving and driven shaft sections, of a plurality of gears on the driving section, auxiliary shafts supported parallel to and stationarily with respect to the aligned shafts, a sliding gear on each of said auxiliary shafts, normally out of operative relation with any of the gears on the driving section, means for connecting each of said sliding gears with a gear on the driving section and means for connecting each of said sliding gears with the driven section, substantially as described.

902,560. Speed Controlling and Reversing Apparatus for Motor Vehicles. Harry T. Coldwell, Newburgh, N. Y. Filed Feb. 12, 1908. Serial No. 415,544.

1. In a controlling device for motor vehicles, the combination with a single shifting device, of a single operating lever, pivotally mounted so as to be capable of lateral and back and forth movements, a guiding plate engaging one end of the lever and provided with longitudinaliy disposed slotted portions, in different transverse planes, and connected by transversely disposed slotted portions, the lower end of the lever engaging said shifting device, the engaged portions of said lever and shifting device, permitting the lateral movements of the lever from one slot section to any other slot section without disengagement of said parts, substantially as described.

902,583. Lubricator. John C. Hill, Chicago, Ill. Filed April 17, 1908. Serial No. 427,620.

1. In a lubricant, the combination of a pump casing formed with a series of pump chambers having inlet-outlet passages at one end, a series of plungers in said pump chambers, a valve member formed with an inlet and an outlet passage for each of said pump chambers, the means for reciprocating said valve, the inlet and outlet passages of the valve being arranged in groups having a reversed relation.

902,644. Connection for Inflating Tires. Wyatt Boyd, Sabina, Ohio. Filed Oct. 29, 1907. Serial No. 399,755.

1. A connection for inflation valves comprising a supporting bracket having means for attachment to a vehicle wheel and provided with an annulus, and a fluid conducting tube extending through said annulus and having one end thereof secured to the valve and its opposite end connected with a source of fluid supply.

902,692. Motor Carriage. John C. Sher-

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man, Brookline, Mass. Filed Aug. 21, 1905. Serial No. 274,977.

1. In a motor vehicle, the combination with a plurality of combustion engine units, of a common driven member, and driving connections between each of said engine units and said driven member, said connections being adapted to connect different engine units or different combinations of engine uits with said driven member, and a single controller for said connections.

902,693. Indicating Device for Use with Pneumatic Tires. Thomas Sloper and Robert Sloper, Devizes, England. Filed Oct. 5, 1907. Serial No. 396,079.

1. In a deflation indicator the combination with a road wheel of a vehicle and a non-rotating part of the vehicle, of a sounder carried by one of said elements, a striker carried by the other element and free to be advanced into the path of the sounder, means for normally retaining the striker free of the sounder, a pneumatic tire on the wheel, and means, adapted to be operated by excessive lateral deformation of the tire, for displacing the striker and moving it into the path of the sounder, substantially as set forth.

902,782. Ignition System for Explosion Engines. Richard Varley, Englewood, N. J., assignor to The Autocoil Company, a Corporation of New Jersey. Filed Oct. 1, 1906. Serial No. 336,859.

1. In an ignition system for explosion engines, rotatable means forming part of a single mass for closing the primary circuit at one point and for opening it at another point, and centrifugally operated means forming part of the same single rotating mass with said rotatable means, for varying the interval between such closing and opening with relation to the speed of the engine.

902,824. Vehicle Tire. Grant Lambright, Rutherford, N. J., assignor of one-half to Frank A. Magowan, New York, N. Y. Filed June 28. 1906. Serial No. 323,874.

1. A pneumatic tire for vehicles, comprising a single piece cover in whose base are included annular substantially unyielding strips, the walls of the cover including numerous plies of fabric, all of the plies in said cover being anchored separately upon said strips, single ply to each strip at each side of the tire.

902,856. Transmission Mechanism. Henry Cave, Providence, R I. Filed May 9, 1907. Serial No. 372,722.

1. An improved transmission mechanism comprising a driving shaft, a pinion keyed to said shaft, a second pinion adjacent the first pinion and free to rotate on said shaft, a driven shaft geared with the latter pinion, planetary gearing surrounding said driving shaft and formed of elongated gears engaging both of said pinions, and means for preventing planetary movement of said planetary gears, whereby the driven shaft will be rotated in a forward direction.

902,926. Vehicle Tire. James A. Swinehart, Akron, Ohio. Filed Jan. 31, 1906. Serial No. 298,746.

1. The herein described tire comprising a solid elastic body having its sides curved inwardly at the tread and terminating at the base of a pair of annular ribs, one adjacent to each outer side of the tread, said ribs forming a centrally located annular concaved groove, the groove and ribs being of substantially the same area in cross section whereby the height of the ribs and the depth of the groove are substantially the same.

902,937. Spring Construction. Charles Burgess, Jr., Wenona, Ill. Filed July 5, 1907. Serial No. 382,262.

1. In a spring construction the combination of an axle, a frame, a spring secured between its ends to said axle, one end of said spring secured to said frame, and a compression member comprising a casing having a square bore, pivoted to said frame and adapted to contain a liquid, and a piston provided with a square head within said casing having one of its ends secured to the other end of said spring, substantially as described.

902,944. Controlling Device for Motor Vehicles. Frank S. Davis, Toledo, Ohio, assignor to Pope Manufacturing Company, Jersey City, N. J., and Hartford, Conn., a Corporation of New Jersey. Filed Oct. 14, 1905. Serial No. 282,714.

The combination with a steering wheel for a motor vehicle of a sector mounted concentrically with the axis of the wheel and having its inner and outer lateral edges toothed or ratcheted controlling levers pivoted concentrically with the sector and a spring detent for each lever in the plane of the sector to engage the corresponding lateral edge thereof.

903,068. Vehicle Brake. Giovanni Enrico, Turin, Italy, assignor, by mesne assignments, to Fiat Automobile Company, a Corporation of New York. Filed Dec. 10, 1906, Serial No. 347,043. Renewed April 15, 1908. Serial No. 427,212.

1. In a vehicle brake mechanism, the combination with a brake member having a friction surface, of a fluid reservoir, brake applying connections, and means whereby an actuation of said brake connections permits the discharge of a quantity of fluid from said reservoir to cool said brake and automatically cuts off the flow, substantially as described.

903,080. Road Vehicle Wheel Axle. Luigi Granieri, Rome, Italy, assignor to The Firm of A. G. E. S. Societa in Accomandita Semplice per l'Esercizio dei Brevetti Granieri, Rome, Italy. Filed May 12, 1908. Serial No. 432,475.

1. Elastic axle-tree for road vehicle wheels such as described, comprising in combination axle journals, deformable pivoted parallellograms connected to the said journals, rigid angular extensions of the said parallelograms and elastic connection between the said extensions of the said parallelograms.

903,090. Dynamometer for Explosion Engines. Nevil M. Hopkins, Washington, D. C. Filed Feb. 12, 1908. Serial No. 415,571.

1. In combination with an explosion engine, a dynamometer, comprising a thermo-couple within the engine cylinder, means for maintaining said thermo-couple at a temperature below the ignition point of the explosive mixture, and an electric indicator connected to said thermo-couple.

903,122. Air Purifying Device for Automobiles. Herman E. Whiting, N. Y., assignor of one-half to Olin J. Garlock, Palmyra, N. Y. Filed March 4 1908. Serial No. 419,192.

1. An air purifying device for carburetters, the same comprising a casing having therein a dust-catching fluid, a fibrous body and a spring pressed removable perforated plate separating the two.

903,133. Controlling Mechanism for En-

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gines. Giovanni Enrico, Turin, Italy, assignor, by mesne assignments, to Fiat Automobile Company, a Corporation of New York. Filed Dec. 10, 1906, Serial No. 347,041. Renewed April 15, 1908. Serial No. 427,210.

1. The combination with a rotating shaft and manual means including a resilient connection for cotrolling the speed thereof, of means co-operating with said resilient connection for rendering said manual means ineffective to increase the speed above a predetermined limit, substantially as described.

903,206. Mixing Valve. Henry D. Lauson, New Holstein, Wis., assignor to The John Lauson Manufacturing Company, New Holstein, Wis. Filed April 25, 1908. Serial No. 429,181.

1. A mixing valve comprising a housing having a division wall, a port in the division wall, an oil duct in connection with the port, a check valve closure for said port and oil duct, a by pass aperture in the division wall, an air inlet in the housing below the division wall and an air outlet in said housing above said division wall.

903,212. Fluid Gage. Morris Martin, Malden, Mass. Filed Jan. 30, 1907. Serial No. 354,857.

1. The combination with a vertical wall of a tank and a bushing therein, of a gauge head mounted in said bushing and chambered at its opposite ends, a pivot mounted in one of said chambers, a magnetic needle mounted on said pivot, a bearing sustained in the other chamber, a rock shaft mounted in said bearing, a magnet applied to the inner end of said shaft to be moved between said bearing and the dividing wall of said head, and a float fixed to the opposite end of said rock shaft, the rock shaft and its magnet being turned as the float is raised by the fluid in said tank.

903,256. Vehicle Wheel. Martin L. Williams, South Bend, Ind. Filed Feb. 12, 1906. Serial No. 300,556.

1. In combination with a vehicle axle having a terminal yoke, a vehicle hub having an end closure plate and couple yoke movably connected with the axle yoke, coiled springs interposed between the interfitting parts of the axle yoke and couple yoke, an axle secured to said end closure plate and extending between said coiled springs and having driving connections independently of the latter.

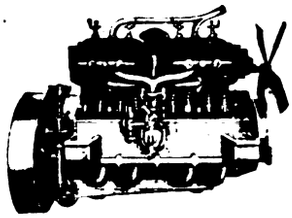
903,349. Steering Gear for Motor Vehicles. Charles O. Barnes, Oswego, N. Y. Filed Jan. 11, 1908. Serial No. 410,379.

1. In a steering gear for vehicles, the combination with a housing and a mast having bearings therein, of two worms spaced apart on said mast one of said worms being adjustable, a single sleeve having internally threaded portions spaced apart and meshing respectively with the worms, a shaft adapted to be connected with the steering wheels of a vehicle, and means for transmitting motion from said sleeve to said shaft.

903,506. Acetylene Gas Generator. Edwin M. Rosenbluth, Philadelphia, Pa. Filed Aug. 29, 1907. Serial No. 390,584.

1. The combination with a gas generator; of a gas conduit leading from said generator and comprising a coil; a bracket maintaining said coil with its axis vertical and comprising a gas chamber in communication with said coil, and a bearing for said generator; a liquid trap interposed between said generator and said coil; and, a removable closure for said trap, substantially as set forth.

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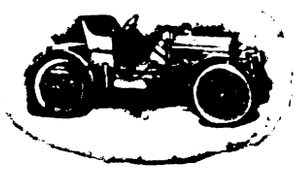
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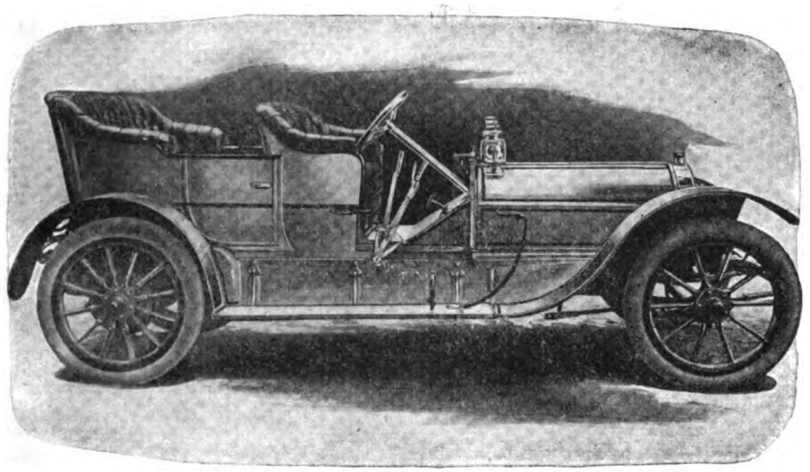
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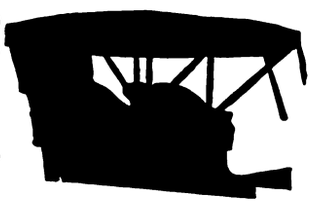
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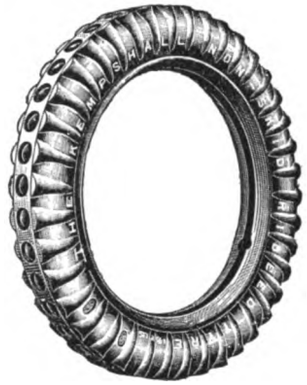
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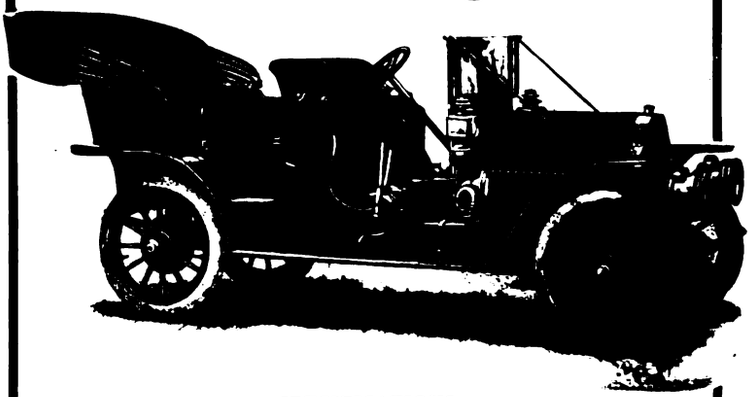
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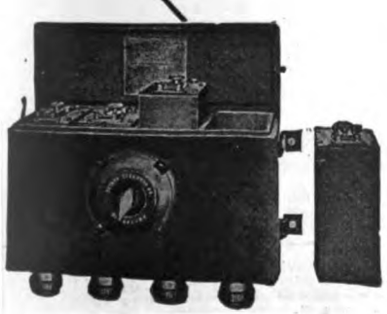
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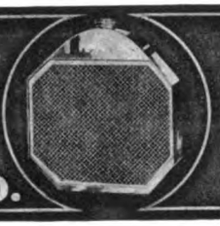


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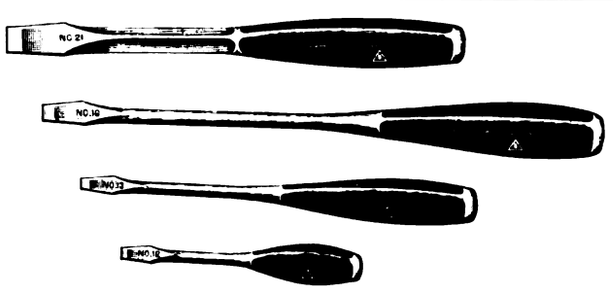
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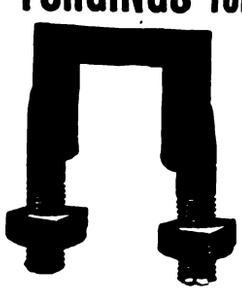
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Change a bone-shaker and a spring-breaker into an easy riding, real automobile in which you can take pride and your passengers comfort. The use of S. S. S. change a near-good car to a real good car and add the finishing touch of luxury to the best cars. Our booklet tells you all about them, and is yours for the asking. Write for it.

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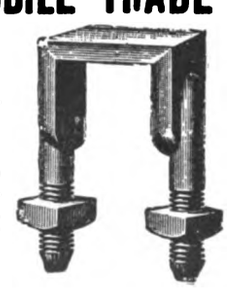
New York Branch, Removed to Motor Mart Building. (Larger Quarters.)

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Satisfaction Guaranteed

Thousands of our Spring Clips are now in use, having been supplied to the leading automobile manufacturers.



Have you secured our prices?

THE M. SEWARD SONS COMPANY, New Haven, Conn.

IF YOU ARE INTERESTED IN MOTORCYCLES

The Bicycling World and Motorcycle Review

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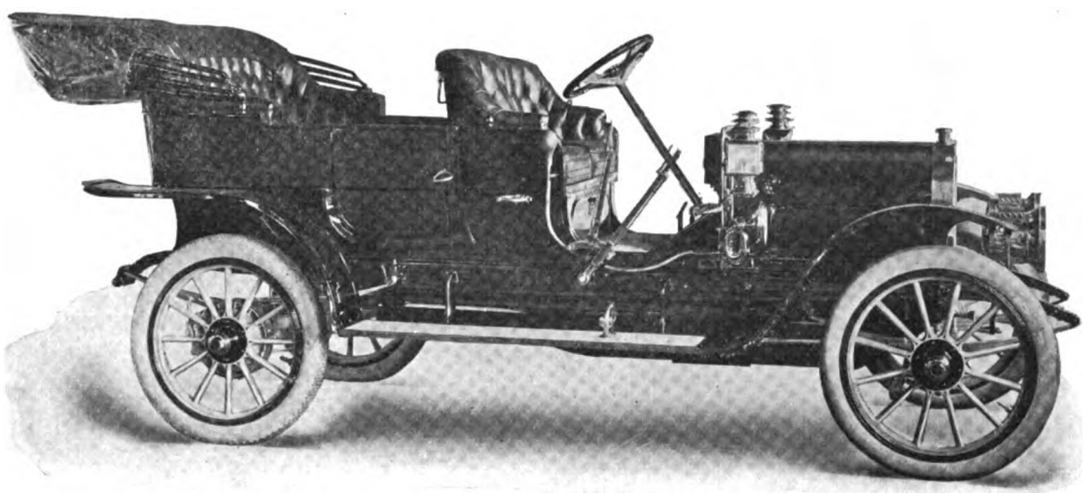
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"THE SILENT SELDEN"



$2,000 F. O. B. ROCHESTER, N. Y.

AFTER the remarkable results of our "first year"—the achieved success of 1908, we salute you with real and well established confidence as we introduce the Selden of 1909.

Not only has our promise to produce a high grade car of best materials and workmanship for $2000 been strictly fulfilled, but we have demonstrated the Selden genius in a silent, strong, comfortable, durable and handsome car. It does all that the owner wants to do and all that the chaffeur ought to do. Agents and owners are enthusiastic over it. Not a cheap car at all but one of the how-can-you-do-it-for-the-money kind.

Our 1909 wheel base is lengthened 5 inches from 109 to 114; the magneto and pump moved to left side of motor, the remaining equipment on the right; the brakes enlarged and now rigged inside the frame; the wheels now 34 inches were 32 inches; the radiator and hood made to conform in style to longer wheel base—little touches for style and convenience. No radical mechanical changes, simply because we couldn't find any necessary—no use fooling with what has proved so unusually good.

We can assure those who buy the 1909 Seldens all the efficiency of the 1908 Seldens with a little more style and a little more convenience, a little more refinement. The actual records of use and travel this year have so proven their merit, power and economic stability that it would be hard to promise anything better in practical construction.

THE COMING CAR OF MODERATE PRICE

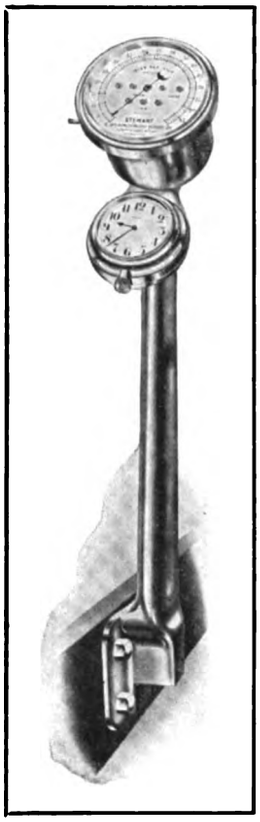
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GEORGE B. SELDEN, President

Members Association Licensed Automobile Manufacturers.

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Just a Plain Statement of Facts

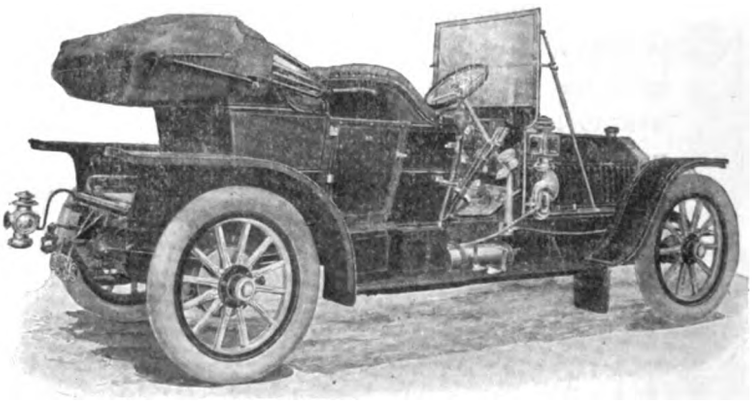
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The Multipolar

(MODEL 14)

Is the most perfect Speedometer ever offered for sale

It was especially designed for racing and other high power cars. Has 90-mile scale, diamond bearings, and is accurate to the minutest fraction. Don't fail to investigate. Send for our new catalog. Write today.



Stewart & Clark Manufacturing Company

509 Diversey Boulevard, Chicago, U. S. A.

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Franklin Model D

When you want to make time, what is the limiting factor? Is it the horse-power of the motor, or is it the way the automobile rides?

There is only one answer, and it explains why it is that Franklin Model D with only 28 horse-power is able to make such high average speed. No other automobile except the six-cylinder Franklin equals it on American roads. You may have 60 horse-power and your maximum speed may be seventy miles an hour, but at the end of a day's touring you have not gone as far as your neighbor in his Model D. Your speed is held down to what the passengers can endure and to what you think your automobile will stand.

Speed then is a question of comfort—a question of the way the automobile rides.

And another thing—easy riding means that the automobile itself is not racked, strained and shaken to pieces. In the Worcester contest last December nearly all the contesting automobiles went through the run without road stops, but Franklin Model D was the only one to withstand the technical examination after the run. All the others suffered penalizations due to broken, strained or loosened parts. Having half-elliptic springs and the steel chassis frames, they suffered from the strain and shocks at speed over rough roads.

In another contest in which there was also an examination after the run, and in which Model D was perfect, twenty-five per cent of the other contestants broke their steel chassis frames.

Model D is always comfortable and you dare drive it. It will stand for speed when other automobiles will not.

An automobile that transmits shocks and vibrations to the chassis can not possibly give perfect riding comfort. Franklin Model D has four full-elliptic springs and a laminated wood chassis frame. Full-elliptic springs absorb shocks and vibrations. They give the maximum spring length. The springs on Model D are forty inches long. Half-elliptic springs to be any where near as good would have to be nearly seven feet long—an impracticable length.

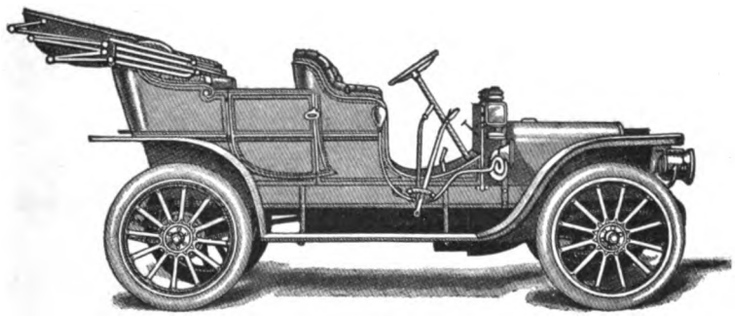
But why discuss it? Everybody knows that full-elliptic springs are the standard for easy riding.

That easy riding means reliability and long life to the automobile itself, is not so well understood.

Then the wood chassis frame on the Franklin gives additional flexibility, helps to absorb and neutralize shocks and vibrations. The Franklin frame is also lighter and stronger than the steel frame commonly used. If you are interested, we will be glad to mail you a reprint of a technical article on this subject from the Horseless Age.

In addition to the two contests mentioned above, the 1909 Model D was perfect in three other contests, making five consecutive contests in which it won perfect scores. No other automobile went through more than two of these contests without penalization. Remember also that no automobile has been able to break the Franklin's San Francisco-New York record, not to mention the Chicago-New York record—the most severe reliability tests ever made.

Look into this question. Weigh and ride in Model D. Then weigh and ride in other automobiles over the same road at the same speed. You will understand the meaning of non-jarring, easy-riding construction.



FRANKLIN MODEL D, four-cylinder, 28 horse-power, five-passenger touring-car 2200 pounds, $2800. Single or double rumble seat runabout, $2700. Standard finish touring-car, royal blue; runabout, red and black. 36-inch wheels, same size as used on the best water-cooled automobiles weighing a thousand pounds more. Sheet aluminum body on steel angle frame—the strongest and lightest automobile body made. Three large and powerful brakes, acting on transmission and rear wheels. Selective type transmission, positive gear-driven oiler, Bosch high tension magneto.

Our forty-page catalogue de luxe treats the automobile question in a clear and fair manner, shows why the Franklin, now in its eighth year, is the automobile for those who want the highest standard of comfort and ability. Write for it.

H H FRANKLIN MANUFACTURING COMPANY Syracuse N Y

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Red Head

TRADE MARK

SPARK PLUG

MARCH 4th—INAUGURATION DAY

Could the RED HEAD Spark Plug be ushered into the automobile world on a more auspicious occasion?

President Taft takes the oath of fidelity to the trust imposed in him, today.

The RED HEAD Spark Plug takes an oath to fulfill its mission in all kinds of gasolene engines and to be worthy of the motorist's trust—not for a four year term of office, but for all time to come.

Briefly: The RED HEAD is a Spark Plug furnished in either mica or porcelain and designed by men who have had years of experience in the automobile business, designing and selling spark plugs for other people.

The porcelain is a special mixture, scientifically compounded, and is guaranteed against cracking from heat.

The mica is specially selected and the cores are constructed under great pressure.

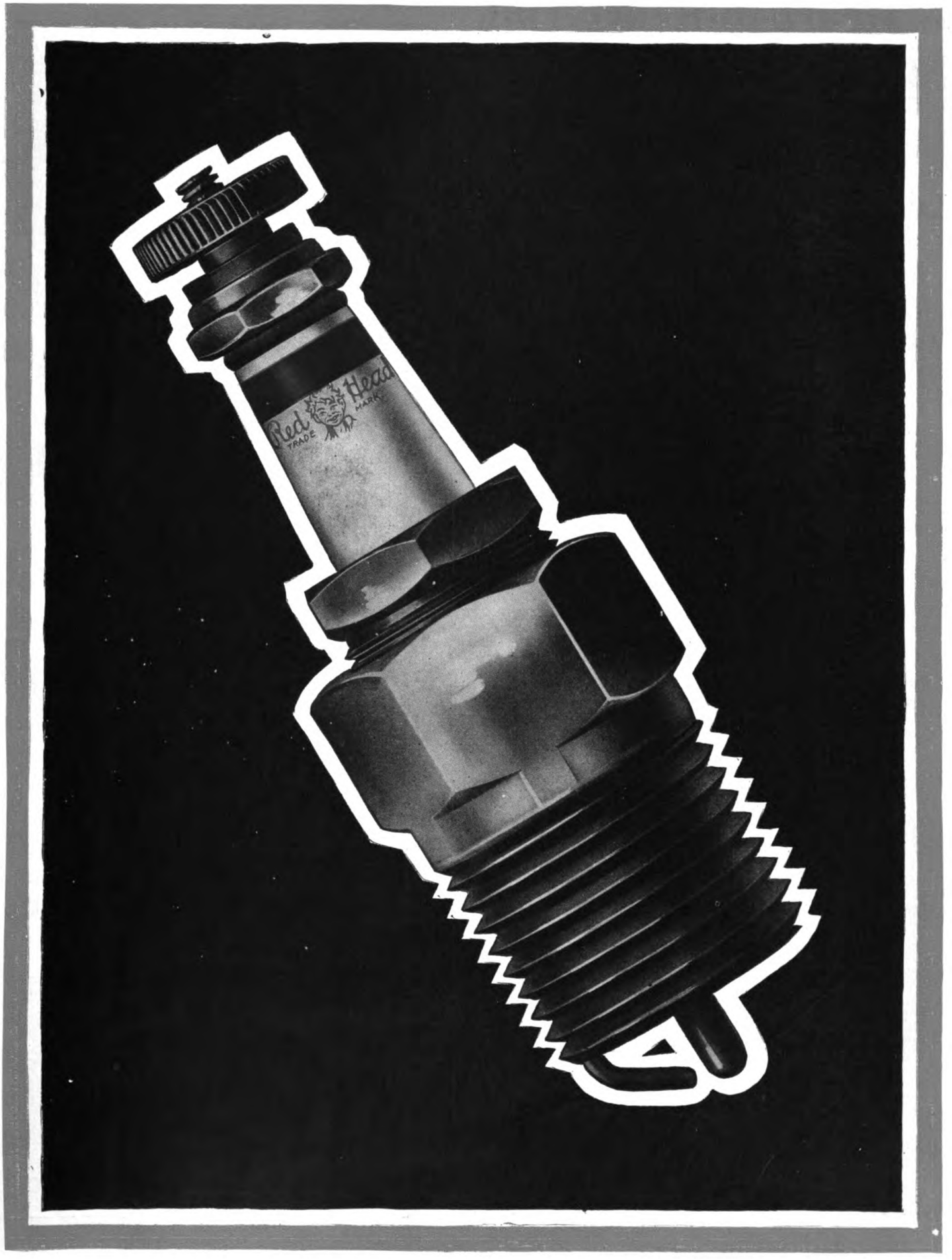
Both plugs are of the same construction and all parts interchangeable. One porcelain will fit all, and the mica core will fit the porcelain shell.

All sizes and all styles—One-half inch—A. L. A. M., or Metric—regular or long—porcelain or mica, $1.00

With each RED HEAD Plug comes some valuable information regarding the adjustment of plugs, coils, timers and wiring—that may save gasolene and add speed to your car.

EMIL GROSSMAN COMPANY, Manufacturers 296 Broadway NEW YORK

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A Heart-to-Heart Talk About the "Maxwell"

AN ADVERTISING MAN called on us recently and told us how we should—or rather how he thought we should—advertise the Maxwell. "You Maxwell-Briscoe people"—said he—"talk too much about your factories and equipment.

"WHAT DOES THE PUBLIC CARE," he continued, "whether you have three great plants—one at Tarrytown, N. Y., another at Pawtucket, R. I., and a third, the largest of its kind, at New Castle, Ind.? The public don't care whether your factories represent an equipment of a million and a half dollars or not. Tell them about the car itself—bring up all the talking points you have." We thanked him of course, for we like to have ideas, but—we did not follow his advice.

BUT THE PUBLIC DOES CARE—for today there are two hundred and fifty-three different companies making Automobiles. How many of these will be in business a year hence? Judge by past records: In 1902 eighteen concerns went to the wall; in 1903 thirty failed; in 1904 forty died. During the past five years one hundred and fifty-five concerns have discontinued—that's why we know the public cares.

WHEN YOU BUY LIFE INSURANCE—do you pin your faith to the newcomer in the field or to that concern which, by hard work and ample experience has been able to give its patrons an insurance that insures? In every line some name stands prominent—Steinway on a piano—Smith & Wesson on a revolver—McCormack or Deering on a harvester are known the world over. Why? Because they are standard. So it is in Automobiles—the "Maxwell" is the Standard Car of moderate price—of established value.

IT HAS BEEN OUR AMBITION to build the best moderate priced car; best in material, workmanship and durability. To this we have been faithful, by refusing to compete in price with every experiment.

MR. J. D. MAXWELL I consider the best designer of automobiles in the world; a man who from the beginning has been a hater of shams and a despiser of pretense—a man who has created an American car—not a copy.

NO OTHER CAR THAN THE MAXWELL incorporates in a single design the principles of **Three-Point Suspension—Multiple Disk Clutch—Thermo Syphon Cooling—Straight Line Shaft Drive—Metal Bodies**—principles that were as much a part of the "Maxwell" in 1904 as they are today.

THE MAXWELL LINE—MAGNETO EQUIPPED—is complete. The 30 H.P. 4-cylinder touring car or roadster, for those who want a speedy, powerful 4-cylinder car, costs $1,750. The 20 H.P. 2-cylinder touring car, fully equipped, the standard 2-cylinder car of America at $1,450—is the logical car at its price. The Maxwell 2-cylinder 14 H.P. runabout, the "Aristocrat of its class," costs $825, with complete equipment.

AND, LASTLY, THE MAXWELL JUNIOR AT $500. Here is a revelation—a 2-cylinder 10 H.P. Runabout—a Maxwell Runabout—for $500—one that we give our personal warrant for reliability and performance.

TWELVE THOUSAND SATISFIED OWNERS prove Maxwell success—and—remember, when you buy a Maxwell you buy a car behind which stands the Maxwell-Briscoe Motor Co., with an equipment which represents over a million and one-half dollars.

Benj. Briscoe
President.

MAXWELL-BRISCOE MOTOR COMPANY

P. O. Box 106—TARRYTOWN, N. Y.
Main Office and Factory.

Pawtucket, R. I. **New Castle, Ind.**



1899 Model Equipped With Timken Bearings

EVENTS WON BY HAYNES CARS.

1895—(1) First prize, $150, for balanced motor, awarded by Chicago Times-Herald. (2) Speed Record, Louisville, Kentucky.

1897—(3) Speed Record, Charles River track, Boston, Mass.

1899—(4) First One Thousand Mile run made in America. This was accomplished by our phaeton, which ran from Kokomo, Indiana, to New York City.

1901—(5) Kokomo to New York City in 73 hours. (6) First Prize Blue Ribbon Certificate, Long Island Endurance run; one hundred miles during a heavy rain storm, without a single stop. (7a) First Prize Certificate in the New York-Rochester Endurance Contest. (8b) First Prize Certificate in the New York-Rochester Endurance Contest. (9) First Prize, Silver Cup, Five Mile Speed Contest, Fort Erie track, Buffalo, N. Y. (10) First Prize, Silver Cup. Ten Mile Speed Contest, Point Grosse track, Detroit, Mich. (11) Gold Medal, awarded Pan American Exposition.

1902—(12) Blue Ribbon, or highest award at the Long Island non-stop contest. (13) Blue Ribbon, or highest award at the Decoration Day run. (14) First Class Certificate in New York-Boston-New York Reliability contest, runabout model. (15) First Class Certificate in New York-Boston-New York Reliability Contest, standard model. (16) First Class Certificate in New York-Boston-New York Reliability Contest, surrey model.

All These Events Won on Timken Bearings

1903—(17) First Class Certificate in New York-Pittsburg run, touring car. (18) First Class Certificate in New York-Pittsburg run, runabout.

1904—(19) First Class Certificate in New York-St. Louis run. (20) Grand Prize at World's Fair at St. Louis.

1906—(23) In the final race, held third place on the American team.

1907—(24) Silver Cup, Automobile Dealers Association of Southern California, five-mile race for complete touring cars. (25) New York Motor Club, New York-Albany Endurance Contest, two hundred miles through mud and rain. Silver Cup for mechanical excellence and finishing first in its class. (26) Perfect score in four days Sealed Bonnet Contest, Automobile Club of America, 600 miles, with all working parts under seal; finished without a single adjustment. (27a) Perfect score in Chicago Motor Club Sealed Bonnet Contest, 176 miles, with all working parts under seal. (28b) Perfect score in Chicago Motor Club Sealed Bonnet Contest, 176 miles with all working parts under seal. (29c) Perfect score in Chicago Motor Club Sealed Bonnet Contest, 176 miles, with all working parts under seal. (30d) Perfect score in Chicago Motor Club Sealed Bonnet Contest, 176 miles, with all working parts under seal. (31) Perfect score in run from Los Angeles to Lakeside; most strenuous contest over mountain roads. (32) Perfect score in the Glidden Tour. The most difficult touring contest held in America. (33) Made fastest time of any car in its class, irrespective of price, in the Algonquin Hill Climb, Chicago Automobile Club Contest. (34) Perfect score in the New Jersey Automobile Motor Club's 24-hour endurance contest. (35) THE ONLY PERFECT SCORE IN THE CHICAGO MOTOR CLUB'S 600 mile reliability contest.

Past, Present, Future, Always Timken

1909 Still Using Timken Bearings

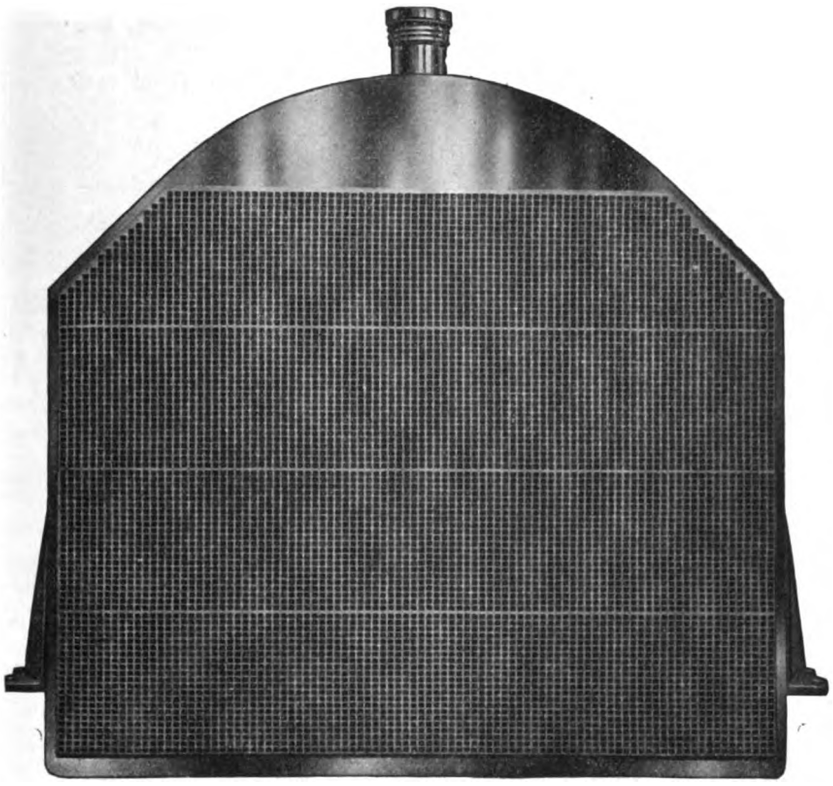
The Timken Roller Bearing Axle Co.

CANTON, OHIO

BRANCHES—10 E. 31st St., New York; 429 Wabash Ave., Chicago.



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¶ Regardless of price or with the strictest regard to price,

MAYO RADIATORS
are best

¶ If you once get this fact firmly fixed in your mind possible radiator troubles will either be a thing of the past or of your own choosing.

¶ The Quality of Mayo Radiators is fixed and their price based on that quality. Where Quality precedes price Mayo Radiators take precedence.

Mayo Radiator Company
NEW HAVEN, CONN.

LARGE SALES AND SMALL PROFIT

with thousands of satisfied customers is our best advertisement, and makes it possible for us to import

The Celebrated Brampton Chain

from ENGLAND (paying Freight and Duty) and sell it at THE SAME PRICE AT WHICH THE OTHER CHAINS ARE SOLD TO AUTOMOBILE MANUFACTURERS, JOBBERS, DEALERS AND OWNERS.

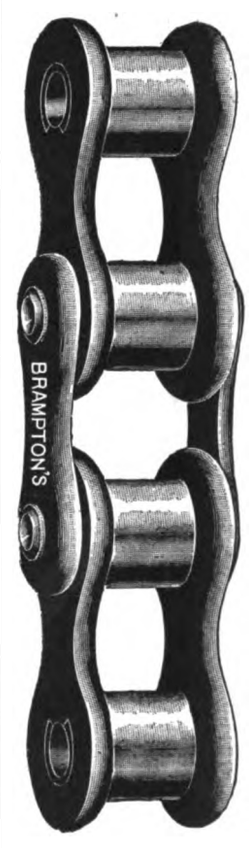
Price Being Equal, Which Would You Prefer? The Best?

Several of the manufacturers now equip their cars with THE BRAMPTON CHAINS. Others will do so, if you will order your car that way. No extra cost to you or the manufacturer.

There is an increasing DEMAND for THE BRAMPTON CHAIN and it is now being sold by the live jobbers and dealers throughout this country. Agents wanted in unoccupied territory.

PRICE THE SAME—QUALITY, THAT'S DIFFERENT

We are Sole U. S. Agents. Write for proposition. Catalog on request.



CHAS. E. MILLER, MANUFACTURER, JOBBER, EXPORTER AND IMPORTER
Main Office: 97-99-101 Reade Street, New York

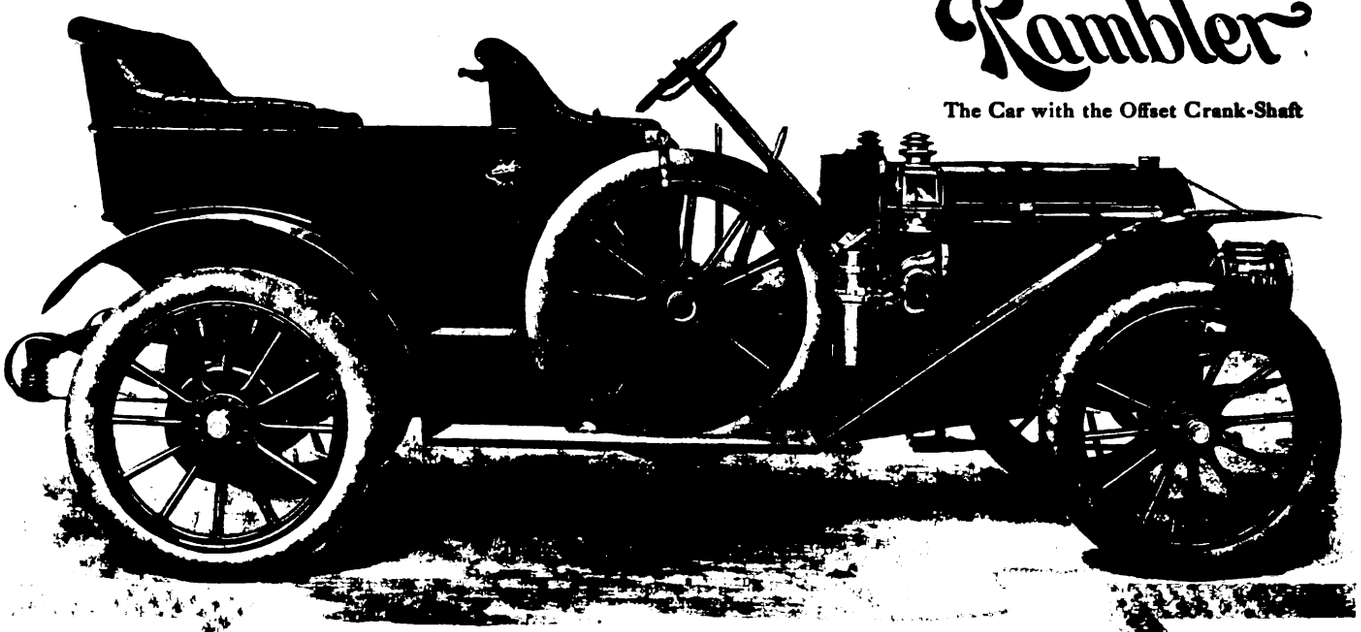
BRANCHES—54th St. and 8th Ave., New York; 202-204 Columbus Ave., Boston, Mass.; 318-320 N. Broad St., Philadelphia, Pa.; 227½-229 Jefferson Ave., Detroit; 1829 Euclid Ave., Cleveland, O.; 1392 Bedford Ave., Brooklyn, N. Y.; 824 Main St., Buffalo.

The Largest Automobile Supply House in America

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Rambler

The Car with the Offset Crank-Shaft



Model Forty-four, 34 H. P., $2,250.

Spare Wheel, with Inflated Tire, Brackets, and Tools, $74. Magneto, $150.

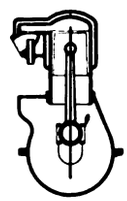
Why the Offset Crank-Shaft?

Notice a man about to mount a bicycle. He always adjusts the pedal in that position where it will receive to best advantage his full weight on the first downward stroke. This position for the pedal is just slightly forward of the center of the crank-shaft of the bicycle. If he mounted when the pedal was directly over the center of the crank-shaft, his weight would fall directly on the bearings and the first downward stroke would be retarded and therefore weak.

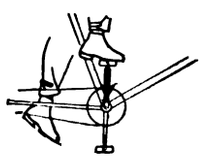
Now imagine the man's leg as the piston of an automobile engine, the pedal of the bicycle as the crank-pin, and the crank-shaft of the bicycle as the crank-shaft of the engine. In the ordinary engine the crank-pin and piston (the pedal and the man's leg) are directly over the dead center, and until the crank passes the turning point all effort is wasted. Thus when the explosion occurs the greatest force falls upon the bearings.

In the Rambler engine, at the instant the explosion occurs above the piston the crank-pin has moved past the dead center; the crank-shaft is in a position to receive the full pressure and turns without friction. No shock falls on the bearings; there is no side thrust, and wear on the cylinder walls is thus saved.

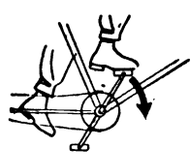
Because of this feature Rambler Model Forty-four can be operated smoothly and steadily at three miles an hour on high gear.



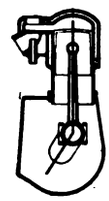
Ordinary engine. Position of piston at explosion center.



Corresponds to position of piston in ordinary engine at explosion center.



Corresponds to position of piston in Rambler engine at explosion center.



Rambler Offset Crank-Shaft. Position of piston at explosion center.

Seven-passenger model, 45 horsepower, with offset crank-shaft, $2,500. Other models, $1,150 to $2,500. A new Rambler catalog has just been issued. It describes and illustrates all distinctive features of new Ramblers—the offset crank-shaft, Spare Wheel, straight-line drive, etc. A copy on request.

THE CAR OF STEADY SERVICE

Thomas B. Jeffery & Company, Main Office and Factory, Kenosha, Wis.

Branches and Distributing Agencies: Chicago, Milwaukee, Boston, New York, Cleveland, San Francisco

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, March 4, 1909. No. 23

PROBING ARNSTEIN'S FAILURE

Bankruptcy Action by Miss Hanley Displeases Many Trade Creditors—Estimate of Liabilities.

Trade surprise at the unexpected bankruptcy proceedings against Eugene Arnstein, the well known Chicago jobber, changed to puzzled interest and concern during the past week when some more or less unusual features transpired as to both the manner and the motive for the action. Instead of being the result of any impatience on the part of Arnstein's general creditors in the trade, the petition seems to have been filed at the instigation of Miss Nellie Hanley, who in the capacity of buyer and manager has been prominent in the affairs of the Arnstein business for a number of years, and who now claims to be a creditor of the concern to the amount of approximately $35,000 or $40,000.

It is claimed that Miss Hanley had an understanding by which she was to receive 12½ per cent. of the profits of the business as a reward for her services, and it is said that she has been content to let her portion accrue without any very definite accounting until latterly, when difficulties and less cordial relations between Arnstein and herself impelled her to vigorous measures. In justification of the bankruptcy action, it is suggested that this presented the simplest way by which she could get the accounting necessary for a determination of what is due her, as she has encountered baffling delays, heretofore, through the alleged reluctance of the proprietors to take inventory or strike a balance.

Many concerns in the trade, however, regard the action as ill-advised and as being likely not only to ruin the business, but to result in a serious sacrifice of the assets, if carried to the extreme. A number of the creditors have called a general creditors' meeting at the Great Northern hotel, Chicago, for Friday, 5th inst., to determine a course of action that will best protect the trade interests, the call being issued over the names of the following concerns: Corbin Screw Corporation of Chicago, Ill.; Hibbard, Spencer, Bartlett & Co., Chicago, Ill.; G & J Tire Co., Indianapolis, Ind.; Harris & Reed Mfg. Co., Chicago, Ill.; Frank Mossberg Co., Attleboro, Mass.; Hastings & Anderson, Chicago, Ill.; The Standard Co., Torrington, Conn.; and the Aurora Automatic Machinery Co., Aurora, Ill.

Unofficial estimates of the liabilities place the total at approximately $175,000, but the assets are as yet difficult to judge. Various members of the Arnstein family interested in the business are regarded as being very strong financially, and it is thought that a matter of indebtedness to the amount of $40,000 to one creditor or set of creditors would not have offered any serious difficulties to the firm under ordinary circumstances.

Pierce Engine May Make Only Cars.

Plans are on foot for the enlargement and conversion of the plant of the Pierce Engine Co., at Lakeside, Wis., into an immense automobile factory. The company has for the past three years been making a car in addition to its regular output of boats and gasolene engines, but the proposition at present being entertained provides for considerable additional capital, increased factory space and the production of cars alone. Those interested in the project with A. J. Pierce, the present owner of the business, include Frederick Robinson, vice-president of the Case T. M. Co.; C. R. McIntosh, treasurer of the Case T. M. Co.; and John Peebles, all of Racine.

Bosch to Build Magnetos in America

An American plant for Bosch magnetos and accessories is being arranged for, matters having progressed to a point where the Bosch Magneto Co., of New York City, is advertising in the German-American newspapers for factory help. Skilled workmen from other concerns in the same line are being engaged, and the indications point to early domestic production.

FORD TO SUE ON INFRINGEMENT

Claims that Other Makers Violate His Patent Rights on Shaft Drive—Notices Served on Five.

Demonstrating that in addition to being conspicuous as a defendant in patent litigation, as in the Selden controversy, it is also possible to assume an aggressive role, Henry Ford, president of the Ford Motor Co., Detroit, Mich., last week sent notices of alleged patent infringement to five prominent automobile manufacturers, declaring that they are violating his patent rights as to a particular form of the popular shaft drive construction. A further list of alleged infringers is being prepared, to whom similar notices will be sent, and as the notices are intimated to be simply the forerunners of suits in the United States courts, where the recipients do not fall in with the Ford view as to the alleged infringement, there is promise of a lively situation.

The patent which Ford declares is being infringed is No. 747,909, which, briefly, covers the following arrangement:

"An enclosed transmission casing to which is joined a hollow forward reach tube, enclosing the drive shaft. The drive shaft is connected with the engine shaft by means of a single universal joint. Coincident with this universal joint is the ball joint which connects the forward reach aforementioned with the frame."

The essence of the claim appears to lie in the arrangement of the single universal joint of the power shaft, inside the ball joint of the torque tube, where it connects with the frame. This prevents the shock and torsion of the rear wheels from being communicated to the frame, Ford says.

The makers so far selected for attention include two in Detroit, one in Cleveland, a fourth in New York State, and the fifth in New England. Examination of the products of other makers is being made with a view to their patent liability.

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In the Retail World.

Blake Brothers, of Central City, Neb., have opened an automobile salesroom and garage. A well equipped repair department will also be maintained.

The Central Implement Co., of Omaha, Neb., has been appointed state agent for Schacht motor buggies. C. J. Anderson is president and manager of the company.

The Central Tire & Rubber Co., 2127 Farnam street, Omaha, Neb., which handles Firestone tires, has added a vulcanizing department. H. K. Wheelock is the manager.

F. J. Coddington, of Syracuse, Neb., agent for the Reo, is building a new garage and repair shop. It will be of fireproof construction throughout and will have cement floors.

Harry T. Clinton has opened western headquarters for the Fiat cars at 1424 Michigan avenue, Chicago, Ill. He will have charge of the territory from Pittsburg to the Pacific Coast.

W. J. Woods, of Spencer, Neb., who handles the Jackson Iine, has arranged for the construction of a new garage and repair shop. Present plans provide for its completion about the first of May.

William H. Wallace, of Omaha, Neb., has accepted plans for a salesroom, garage and repair shop on Farnam street, in "automobile row." The salesroom will feature the Oakland for which he is the agent.

The Drummond Carriage Co., of Omaha, Neb., has recently completed a new building for its automobile department, at 2024 Farnam street. A. R. Smith is manager, handling the White steamer and the Woods electric.

Seeley, Van Zant & Crackel Co. has opened at 930 South Main street, Los Angeles, Cal., for the sale of automobile supplies. All three members of the firm, which was recently incorporated, are well known in the local trade.

The Stewart Lumber Co., of Dennison, Ia., has embarked in the automobile business and has secured the agency for the entire Jackson line. A garage and repair shop is being built, which will be in charge of T. F. McGrath.

Buys Reliance, but not Oakland.

Rumors as to the activity of the more or less mysterious General Motors Co., of New York, in buying up prominent automobile properties, were again stirred late last week by the publication in a Detroit paper of a list of companies which it alleged the General Motors now controls, the list including not only the Olds Motor Works and Buick, together with the Reliance Motor Car Co., of Owosso, Mich., which has just been bought, but also again linking the Maxwell-Briscoe Motor Co., of Tarrytown, N. Y., with the enterprise, and this time the Oakland Motor Car Co., of Pontiac, Mich. Inquiries by the Motor World promptly brought denials from both the Oakland and the Maxwel-Briscoe companies as to any purchase by or affiliations with the General Motors Co.

Frederick O. Paige, who until the sale was president and general manager of the Reliance company, is engaged in the formation of a new company to manufacture an improved type of motor truck. H. A. Wilcox and Andrew Bachle, also formerly of the Reliance company, are associated with him in the enterprise, for which a factory in Detroit is planned.

John Prepares for Big Things.

George C. John has purchased the capital stock of the St. Louis Car Automobile Co., of New York, of which he has for some time been the manager. The purchase includes the stock, furniture and good will. By a deal closed this week, he has acquired the New York City and Long Island sales agency for the Marmon line, which in connection with the large eastern territory which he has obtained for the sale of Inter-State cars, and the American Mors product of the St. Louis Car Co., will place his company conspicuously to the forefront in the Metropolitan field.

Howlett in a Boston Berth.

Harry S. Howlett, formerly representing Diamond tires, and later with Fisk, has been appointed manager of the Boston branch of the Jones Speedometer. He will promote the Jones interests throughout the New England territory. The branch at Hartford, Conn., was burned out by fire on the 25th ult., and pending repairs, the Connecticut trade will be handled from the Jones Speedometer headquarters in New York City.

Green no Longer a White Manager.

Max R. Greene has resigned as manager of the Philadelphia branch of the White Co. to become associated with the Carl H. Page Co. in New York City. He is succeeded in Philadelphia by Evans C. Church, heretofore the assistant manager of the branch.

Hills Joins the Packard Forces.

Dr. H. H. Hills, assistant sales manager of the Buick Motor Co., Flint, Mich., has resigned to go with the sales department of the Packard Motor Car Co., at Detroit, Mich. He assumes his new duties this week.

Dowse at Detroit for G & J.

Ralph P. Dowse, of Chicago, Ill., has been appointed manager of the Detroit branch of the G & J Tire Co., to succeed Charles A. Monson. He has been a traveling salesman for the company for several years.

Browning to Manage a Branch.

Fred J. Browning has been made manager of the Philadelphia branch of the Autocar Co., of Ardmore, Pa. He was previously located at the factory, in connection with the production management.

The Week's Incorporations.

Mt. Jackson, Va.—Standard Garage Co., The, under Virginia laws, with $5,000 capital. Corporators—E. M. Hickman and J. L. Wissler, Jr.

St. Louis, Mo.—Auto Livery Co., The under Missouri laws, with $25,000 capital. Corporators—J. H. Overall, W. L. Clark and H. S. Turner, of St. Louis.

Brooklyn, N. Y.—Ambulance Auto Co., The, under New York laws, with $2,000 capital. Corporators—W. H. Douglas, G. C. Holmes and Faith Holmes.

Glen Cove, N. Y.—Red Spring Garage Co., The under New York laws, with $5,000 capital. Corporators—E. R. Weeks, H. L. Underhill and G. E. Hawkins.

Schenectady, N. Y.—Motor Wagon Co., The, under New York laws, with $25,000 capital. Corporators—Charles H. Bardwell, R. D. Lydon and L. B. Lockwood.

Wilmington, Del.—International Motor Truck Co., under Delaware laws, with $500,000 capital. Corporators—F. M. Shive, S. E. Roberson, and W. Davis, of Wilmington.

Chicago, Ill.—City Motor Car Co., under Illinois laws, with $50,000 capital; to deal in automobiles and accessories. Corporators—H. S. McCauley, T. M. Headen and H. F. Webb.

Detroit, Mich.—Hudson Motor Car Co., under Michigan laws, with $100,000 capital; to manufacture the Hudson car. Corporators—J. L. Hudson, R. B. Jackson and George W. Dunham.

Chicago, Ill.—Universal Rim Co., under Illinois laws, with $100,000 capital; to manufacture automobile wheels and rims. Corporators—C. G. Hawley, E. K. Baker and R. E. Aiken, of Chicago.

Dayton, O.—Gem City Automobile Co., The, under Ohio laws, with $10,000 capital. Corporators—William M. Carroll, Alexander W. McFarland, W. S. McConnaughey, Stella D. Fischer and John C. Shea.

New York City, N. Y.—Favary Tire & Cushion Co., The, under New York laws, with $1,000,000 capital. Corporators—Ethelbert Favary, Joseph Nordenschild and Charles S. Block, all of New York City.

Providence, R. I.—National Mfg. & Metal Co., The, under Rhode Island laws, with $25,000 capital; to manufacture, deal in and repair automobiles. Corporators—John B. Hartnett, David Rosenberg and John Mueller.

New York City, N. Y.—Geiszler Bros. Storage Battery Co., under New York laws, with $100,000 capital; to manufacture storage batteries. Corporators—H. M. Browne, E. J. Morhan and D. M. Barrett, of New York City.

Salt Lake City, Utah,—F. Arnould & Co., under Utah laws, with $5,000 capital; to conduct a general automobile business. Corporators—C. Bonnard, president and treasurer; F. Arnould, secretary and manager; A. Gigounon, director.

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SECURES WIRE SPOKE PATENT

Torrington Concern Buys After Court of Appeals Sustains Claims—Controls Making of Spoke Nipples.

Comparatively limited as is the present use of wire wheels in automobile manufacture, the matter of the spoke nipples has been the subject of expensive and hard fought litigation, which has just been brought to a settlement. The parties to the proceeding were the W. J. Manville Machine Co., of Waterbury, and the Excelsior Needle Co., of Torrington, two of the wealthiest and most important concerns in the State of Connecticut. The first named was the plaintiff in the action which alleged infringement of the Campbell patent which it owned and which applies to the machine used for the manufacture of nipples and covers every process of production from headed blanks to finished nipples. The case was hard fought, but the United States Circuit Court of Appeals finally sustained the patent in its entirety.

Apparently realizing that the Campbell patent controlled the only means for economically and satisfactorily producing headed nipples of all sorts, whether for automobiles, bicycles, or carriages, the Standard Co., of Torrington, which several years since succeeded to the spoke business of the Excelsior Needle Co., with which it is related; at once stepped in and purchased from the Manville company the patent and all other rights, patterns, etc., pertaining to the manufacture of the nipples, thereby placing itself in an unassailable position.

Apperson Offers Toledo Bonds.

Pursuing his plan to take over the Pope Motor Car Co.'s plant at Toledo, O., on March 15, the purchaser, R. D. Apperson, has asked that city to subscribe $200,000 of the bonds which are to be floated in connection with the enterprise. The bonds are offered to Toledo investors at 90, making it necessary for them to raise $180,000 for their purchase. The Chamber of Commerce held a meeting to consider the proposition and has evolved a plan by which the subscription asked for may be obtained.

Shawmut Locates in Stoneham.

The Shawmut Motor Co., which was burned out at Stoneham, Mass., some months ago, has located in South Boston. The latter place was selected after overtures had been entertained from Reading, Fitchburg, Quincy and other nearby localities.

Marathon Making Ready to Build.

Cincinnati's new motor car concern, which was incorporated as the Marathon Automobile Co., is preparing a plant on Spring Grove avenue and will shortly commence the production of the "Marathon Six," which is to sell at about $2,000. The following officers have been chosen: Powel Crosley, Jr., president; Clifford Garvey, vice-president; John Rahn, Jr., second vice-president; Ralph Holterhoff, secretary; Frank H. Simpson, treasurer.

Lear Receiver to Continue Work.

Receiver Charles L. Bauer, of the Oscar Lear Automobile Co., of Springfield, O., has been authorized to borrow $25,000 to keep the plant in operation. The payment of two weeks' back wages to the employes, amounting to $3,000, has also been permitted under the order. The plant has shut down temporarily to take inventory, after which it will resume and complete the cars now in process of construction.

Will Make Automobile Tires.

Automobile tires will constitute a new line of production for the Rubber Step Manufacturing Co., of Exeter, N. H. Enlargements are being made to the plant with a view to accommodating the manufacture of the tires. The latter are to be made with a recently discovered cement mixture to fasten the rubber and the canvas, for which many virtues are claimed.

Toledo to Produce Electrics.

The Ohio Electric Carriage Co. has been formed at Toledo, O., with a capital of $200,000, and according to present plans is shortly to erect a large plant in that city. Its chief product will be electric coupes. H. P. Dodge is slated for the position of general manager, and many prominent Toledo business men are numbered among the stockholders.

La Grange Has Factory Prospects.

La Grange, Ga., is named as the probable home of a new automobile plant, to be backed by local and Atlanta capital. The company proposes to manufacture a "double steering gear type" of car, invented by an Atlanta man. Dr. F. M. Ridley, Jr., of La Grange, will be president, and W. W. Wisdom, secretary and treasurer.

Cleveland Autocab Changes Name.

The Cleveland Autocab Co., which has its factory at Geneva, O., has changed its name to the Ewing Automobile Co., to conform with the name of its product, the Ewing cab. No changes of policy or organization are involved and all negotiations entered into under the old name will be carried out under the new title.

Making Motors for International.

The International Harvester Co., popularly referred to as the agricultural machinery "trust," has ordered 500 four cylinder automobile motors from the General Mfg. Co., of Elkhart, Ind. The latter company has engaged J. H. Wells, of Pontiac, Mich., as its superintendent, because of his automobile experience.

HUDSON LAUNCHED IN DETROIT

Takes Plant Used by Northern and Commences Operations—Prominent Factors in the Organization.

Detroit, Mich., already remarkable for its motor car production, is to be the home of another automobile manufactory, in which R. B. Jackson, former general manager of the E. R. Thomas Motor Co., and George W. Dunham, at one time chief engineer of the Olds Motor Works, are leading spirits. The concern will be known as the Hudson Motor Car Co., and J. L. Hudson, who with Jackson and Dunham, is its organizer, has been chosen president.

The plant formerly occupied by the Northern Motor Car Co., at Champlain street and Canton avenue has been taken, and is being refitted and equipped with a view to commencing actual manufacturing operations as soon as possible. The enterprise starts with a capitalization of $100,000, all of which has been paid in, so that the way is clear to an immediate beginning of production activity.

In accordance with the company name, the car that is to be marketed will be known as the Hudson. As stated in the Motor World two months ago, Jackson has for some time been negotiating with a number of the prominent parts makers for power units and other components suitable for a high grade car, so that the output will probably be in the nature of an assembled product, but with the specialized elements selected with engineering wisdom that will result in an harmonious and well balanced whole. The technical knowledge and business experience represented in the new company serves to assure it of a prominent place in the field.

French Favor Compulsory Working.

Following England's lead in the matter of the compulsory working of patents, a change has been proposed in the French patent law, imposing more severe restrictions in this respect. The government has introduced a bill with the avowed object of insuring the adequate working of foreign patents in France. The principal provision of the bill, as translated by the correspondent of the London Times, is as follows:

"Patent rights shall be held to lapse in the event of failure on the part of the holder either to exercise his right in France or in the French colonies for a period of three years after applying for his certificate or to resume exercise of after a similar interval; or, secondly, in the event of only partial exercise of the patent in French territory. In the second event the patent courts will be invested with discretionary power to call upon the holder of the patent to show cause why he should not exercise his rights in French territory 'in an adequate degree.'"

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THE SIMPLICITY OF THE
WHITE STEAM GENERATOR

THE WHITE generator may be described as the fundamental distinguishing feature of the White Steam Car. No other steam automobile, or in fact, no other steam power plant is, or ever was, provided with such a device. As there are still some people who believe that the White generator in some way resembles the ordinary boiler, we should like to state most emphatically that there is no point of resemblance between the two, except that they both perform the function of converting water into steam. The essential points of difference between the two may be summarized as follows:

1. In the White generator, the water is at the top and the steam at the bottom. In the ordinary boiler, the water is at the bottom and the steam at the top.

2. In the White generator, the relative amount of water and of steam is not at all important. In the ordinary boiler, it is necessary that the water be kept at a certain definite level.

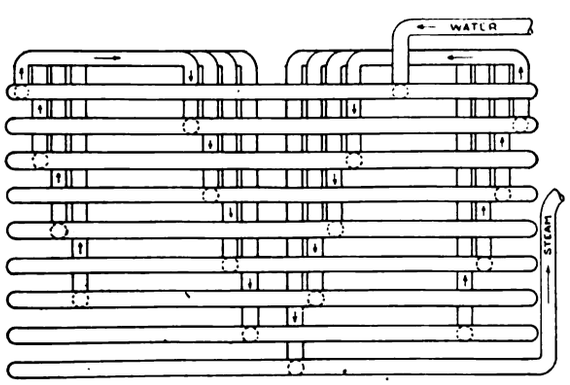
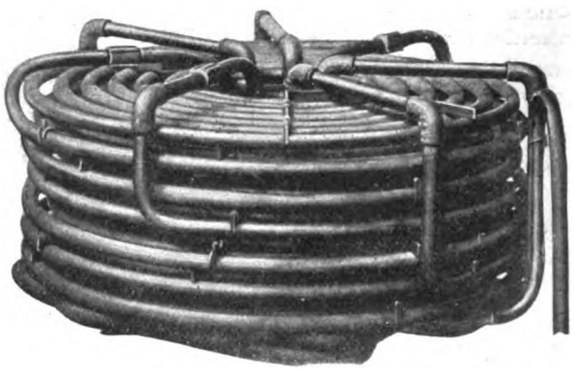


DIAGRAM SHOWING THE CIRCULATION THROUGH THE WHITE GENERATOR



THE WHITE GENERATOR

3. The White generator contains only a very little water and steam at any given time. The ordinary boiler contains great quantities of both.

4. With the White generator, a full pressure of steam may be obtained in a very few minutes. In the ordinary boiler considerable time is necessary to obtain full steam pressure.

5. The White generator has only twelve joints. The ordinary boiler has several hundred joints and the boilers in some of the early steam automobiles had several thousand joints.

6. The joints in the White generator are at the top, where they are not subjected to very much heat. In the ordinary boiler, about one half of the joints are exposed to the hottest part of the fire.

7. The joints in the White generator are much stronger than it is possible to make them in the ordinary boiler.

8. In the White generator, the water must enter the coldest part and be forced gradually to the hottest part. In the ordinary boiler, if the water level is allowed to run low, the entering water comes into contact at once with the hottest parts of the boiler.

Write for catalog.

THE WHITE COMPANY

CLEVELAND, OHIO

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PHILADELPHIA, 629-33 N. Broad St.

PITTSBURG, 138-48 Beatty St.
CLEVELAND, 407 Rockwell Ave.

CHICAGO, 240 Michigan Ave.
SAN FRANCISCO, Market St. at Van Ness Ave.
ATLANTA, 120-122 Marietta St.

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NEW YORK, MARCH 4, 1909.

Production Increase Unexpected.

Despite the prevalence of predictions that the year 1909 would witness a bumper output of the automobile product, it was scarcely to be expected that the early stages of the season would witness such a state of affairs as has been brought about by the early demand for cars. Not simply are manufacturers everywhere rushed to the limit of production in an effort to get their cars on the road and fulfil agency contracts, but the additional demands of the local dealers are proving so far in excess of the expectation in several instances as to prove a serious embarrassment to the makers and indirectly to the trade at large.

This pressure is nowhere felt more strongly than in the shops of the parts producers whose activities form the real barometer of industrial conditions. Already well stocked with orders at the beginning of the year, many of these producers have been brought to a state of real perplexity to know how to meet the requirements forced upon them as a result of an unexpected determination on the part of the manufacturers to increase their outputs. This decision, coupled with repeated urgings for haste in getting out parts for the allotments originally ordered, has created a condition which, in turn, has been passed on to the suppliers of raw material even.

At the same time, while the manufacturers who were reported long ago as "all sold up," are making deliveries rapidly, others who planned huge outputs are finding their expectations more than equalled in the demands for cars and more cars from their agents. Big shipments are being made to all the large cities and what is more, no indications are apparent tending to show that any stagnation exists in the distributing centers. In fact prosperity seems to have arrived with such a rush that there appears to be some question as to whether a temporary setback will be caused by the very unexpected nature of the increase in the market outlook.

Going to School in the Shop.

It is a part of the new order of industrialism that the old-school apprentice has been abolished. The modern manufacturer finds no time to devote to the drilling of a score or more of idle boys in the intricacies of any of the skilled trades, nor can he afford the expense which such training involves. Despite the nominal retention of the apprenticeship, it is pretty generally true that the system lacks both the thoroughness of the old system and the breadth which is demanded in the modern mechanic who may be required to turn his hand to most anything in the general line of his chosen calling. The age of specialization has left its mark everywhere and quite as much in the shop as in the counting room, on the workman quite as much as on the product of his labors.

In the establishment of trades schools, educators have striven manfully to overcome this tendency. But partial failure is inevitable except where the practical side is kept uppermost. In the shop, a boy may learn to be a skilled operative of any given kind of machinery. In the trades school he may learn a great deal about the technicalities of numerous processes, and yet he may not develop the skill of hand which comes only by constantly repeating those processes under all sorts of conditions. In systems of the practical sort where actual production as well as students' drill is sought, the ideal of thorough mechanical training is approached. But it is nowhere better developed than in factories where it is possible to combine actual experience in any given sort of work on a practical scale with sufficient drill to keep the pupil from brain stagnation and properly whet his appetite for more learning and more skill.

The idea of bringing the school to the shop is one of the newest and broadest of modern educational schemes. Its application in the case of the University of Wisconsin, where it has reached its highest state, for example, has made it possible for a whole State, men, women and children, to go to school and study along the lines of their daily work. Its expansion has provided courses of practical instruction given in many different shops during hours set apart from the working day and devoted to the improvement of the minds of those whose resources or inclinations precluded the possibility of more extensive primary schooling. This is a movement from the outside made on the initiative of professional educators. But employers have not been slow to appreciate its advantages or to see the benefit to their own cause which is attributable to it.

So in other localities the movement has come from the other end. Manufacturers themselves have come to see the necessity of developing their employes, particularly the young among them, and regular systems of instruction on a broad scale have been instituted which are intended to compensate in some measure for the elimination of the breadth of explicit instruction which obtained under the old order of things. An instance of this is found in the new system in vogue in Bridgeport, Conn., where apprentices from a large number of shops are permitted to attend school regularly during certain hours of the day which are set apart for the purpose, and there to carry on their education or make up for its deficiencies.

In perhaps no other line of industrial activity is the need of skilled and intelligent labor more urgently required than in the automobile industry. The motor vehicle movement even yet is in its infancy so far as the real importance of its application is concerned, and it is, moreover, an industry demanding the very best of the products of all subsidiary and contributory industries and arts. As the difficulties surrounding production increase, so the skill of the labor

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which it involves must increase, and motor car building is recognized today as demanding the highest developments of labor and material alike. It is a happy circumstance, though a natural one, perhaps, that automobile manufacturers as a class should number among them not a few who are early in recognizing the advantages of hastening the education of their employes, and it is a foregone conclusion that those who do so will succeed in developing for their organizations an increment of zeal and loyalty as well as of manual dexterity well worth the cost.

Getting at a Rating System.

Motor rating for purposes of competition and as a method of classifying different models and sizes of machine are two very different propositions. At the same time, they have been confused in the public mind for so long a time, that it would appear to be a very difficult matter to segregate them. Yet the possibility of such a distinguishment already has dawned on the British horizon where the Royal Automobile Club has instituted within the past few days a new standard system of test and certification for motors in which is entertained not alone the maximum power of the motor, but also its proficiency under certain circumstances thought to be representative of its most arduous possible duties under conditions of regular service.

Should such a method be adopted at all generally, it would result in the establishment of a new sort of rating for all automobile engines, regardless of size or type, and quite apart from the traditional horsepower. In fact, it is probable that its introduction would result, for a time at least, in the coupling with the horsepower of certain additional and more or less confusing data in regard to the performance of the machine. For although the new test is in no way offered as a substitute for horsepower rating, it so elucidates and supplements the single exponent of nominal power output as to seem likely to have a very decided influence over rating practice and its interpretation.

General use of a method of certification of motors and machines such as is contemplated would tend to establish in the public mind a questioning attitude in regard to the value of horsepower alone, quite apart from what particular kind of horsepower happened to be under consideration. That such a condition of doubt already exists owing to the obvious inaccuracies of ratings commonly employed by manufacturers, goes without saying. At the same time, it is a difficulty from which there is no apparent outlet. In the case of the British motorist under the presumed condition of a prevalence of test certificates, on the other hand, the value of the bare term horsepower well might be sacrificed in the face of absolute knowledge of what any given car would do under circumstances such as might be met with in every day usage.

It has been predicted more than once that such a state of affairs would be arrived at ultimately, and indeed, it is difficult to see just what objection can be raised to it. In connection with the power, the weight of the vehicle, the ratio of reduction between engine and driving wheels, the power loss involved, and a number of other considerations are of vital importance in determining the net potentiality of the vehicle for road use. Yet these matters seldom are discussed outside the draughting room. It is true that the term power at the rear wheels, long has been argued as the ideal substitute for simple horsepower. But again, this may vary with the speed, the condition of carburation and ignition and a number of other considerations, while even the maximum is obtainable only under very restricted and favorable conditions. It is, in fact, hardly less a nominal value than the power of the motor alone.

As time goes on, confusion multiplies in the matter of engine and car rating at a rate which is bewildering even to the constant student of such matters. More and more the conviction grows that the users' interest in the name horsepower will gradually dwindle as he becomes more familiar with its use and comes to place stronger faith in the ability of the designer to proportion it wisely to the needs of each particular machine, and that ultimately it will concern them no more than does the pitch of the gears in the transmission.

Boys coasting with sleds or "double-runners" on city streets or park roads, present a fruitful source of winter accidents because of the suddenness with which they come into the path of motor cars. While the shock of collision will, of course, have its most serious physical consequence on the occupants of the sleds, it is no less the concern of automobilists to avoid mishaps of this kind by special caution in crossing streets or roads where coasting is popular.

COMING EVENTS

March 1-6, Buffalo, N. Y.—Buffalo Automobile Club's 7th annual show, Convention Hall.

March 1-6, Providence, R. I.—Automobile show.

March 2-6, Rochester, N. Y.—Automobile and Motor Trades Association of Rochester show, Convention Hall.

March 3-6, Lincoln, Neb.—Second annual automobile show, Auditorium building.

March 6-13, Boston, Mass.—Boston Automobile Dealers Association (Inc.) seventh annual show, Mechanics Building.

March 8-13, Kansas City, Mo.—Kansas City Automobile Dealers Association's show, Convention Hall.

March 8-13, Portland, Ore.—Portland Automobile Club's show.

March 8-13, Memphis, Tenn.—Automobile show, Auditorium Building.

March 11, New York City—Midwinter endurance run, New York to Boston, for Campbell trophy.

March 11, 12, 13, Milwaukee, Wis.—Milwaukee Automobile Club's first annual show in the Hippodrome.

March 13-20, Minneapolis, Minn.—Minneapolis Automobile Show Association's show, National Guard Armory.

March 15-20, Rochester, N. Y.—Rochester Automobile Dealers Association's show, Convention Hall.

March 16, 17, 18, Chattanooga, Tenn.—Three days race meet and hill climb on Lookout Mountain.

March 17, 18, 19, Pittsburg, Pa.—Three days' endurance run.

March 22-27, Toledo, O.—Toledo Automobile Dealers Association's automobile show.

March 23-26, Daytona, Fla.—The Motor Contest Association's (Inc.) seventh annual international races, Daytona Beach.

March 24-27, Syracuse, N. Y.—Syracuse Automobile Dealers Association's first annual show, New York State armory.

March 27, Atlanta, Ga.—Third annual hill climb, on Stewart avenue hill.

March 27-April 3, Pittsburg, Pa.—Automobile Dealers Association's show, Duquesne Garden.

April 5-10, New York City—New York Automobile Trade Association's second annual automobile carnival.

April 10, New York City—New York Automobile Trade Association's second semi-annual hill climb on Fort George hill.

April 15-17, Louisville, Ky.—Louisville Automobile Association's show, Coliseum.

May 22, Hartford, Conn.—Automobile Club of Hartford's 200 miles endurance run.

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Boston to Stage Her Show in Hall of Arches.

Nineteen hundred and nine will go down in automobile history as the producer of a huge crop of local shows; more of them than ever had been held before. But as in former years, none of the local exhibitions will transcend in extent nor in elaboration of display the effort of the Boston Automobile Dealers Association, which opens next Saturday, 6th inst. The Boston show, because of its central New England location and because of the relatively late date at which it is held, serves as a more direct introductory to the selling season than either of the other big shows with which it really is fitted to class in point of bulk, while it also draws a huge attendance, in which is a liberal infusion of the actual buying class, mingled with the usual basis of mere curiosity seekers.

Boston's show this year, which will be the seventh annual recurrence of the event, promises to be fully up to precedent, both in the interest and variety of its exhibits, and in point of its decorations, which always are held in high esteem by the denizens of the Hub. According to the official list of exhibitors, there will be on view no less than 84 different makes of car, comprising the full range of pleasure and commercial types in gasolene, steam and electric classifications. These will be displayed by 67 different exhibitors, nearly all of whom are agents or representatives of manufacturers' branches. Motorcycles will be segregated in a section by themselves and will be shown by nearly a score of makers and agents. Added to this basic display will be Boston's own line-up of accessories.

In accessories, it would be observed, Boston exceeds the bounds set by practically every other show, not necessarily in numbers of different articles on view, but in point of the strength of local producers. Artfully included among the names of the accessory people the show list always includes sundry purveyors of soft drinks, peanut brittle and the local telephone company—three indispensables of any exposition held in Mechanics Hall. Excepting these, as of only passing interest to the seriously minded show visitor, it is made to appear that the exhibitors of accessories and supplies to the automobile rather than to its owner, will number no less than 166. The total number of exhibitors in the entire show thus mounts up to an even 250.

The staging of the show always has been a source of deep concern to the management. And it should be urged that their solicitude has been well rewarded, particularly during the last two years. For 1907 there was the presentation of the old New England apple orchard, with its real trees and realistic greenery. Last year the visitor upon entering the portals of the exhibition hall was magically transported into an Italian garden. What is in store for next week is told by manager Chester I. Campbell himself as follows:

"Our treatment of Exhibition Hall at the coming show, involves its transformation into what might be called 'The Hall of Arches.' The apparently numberless columns here are to be ingeniously made the foundations of immense decorative arches, the bases enlarged and treated with green onyx, having beautifully modeled capitals in ivorized plaster, from which will swing the decorative arches spanning the various aisles of the hall All of the arches will be modeled in high relief, with corner beads of raised plaster arches, and the soffits or underside of each arch will be studded with incandescents almost concealed in encircling rosettes, the lights themselves being in delicate colors.

"This arrangement of interesting arches produces necessarily a series of square ceilings, which will be treated in sunbursts of consistent colorings with decorative electroliers pendant from the center. Some idea of the vastness of the adaptation of this scheme can be had from the knowledge that there are to be nearly 100 of these arches in Exhibition Hall, and with the carrying out of the plans of rendering the main stairway in green onyx, as shown on the plans, the treatment of the walls in old gold and green fabrics, dividing the surface into panels by the use of green mouldings, the floor coverings for exhibitors all in accordance with the general decorative color scheme of velvety green and gold ivory, the transformation will be absolutely complete.

"Grand Hall will be treated in every way as far as possible to correspond in color scheme to Exhibition Hall, and although no arches will be constructed here, still the same consistency of design will be noticeable. The stage, always a stumbling block to the decorative designer, having nothing to start with but the bare walls with hard lines of proscenium arch as a basis, will prove a feature of this portion of the show. The great pilasters on either side of the stage will be modeled in plaster in the form of a huge decorative panel, with green onyx and ivorized plaster base, above which in high relief will be a splendidly modeled figure of the 'Genius of Progress,' holding aloft her torches of revolving electric lights of varicolored hues, while immediately above are the figures 1909, studded with incandescents.

"The new proscenium arch curtain especially designed and painted for this occasion, sweeps down and meets this on either side. Fringes to the curtain, edges to panels and the entire portier under the center of curtain are formed a blaze of beauty. All approaches to the stage and railings are designed in onyx decoration. The balconies will also be treated in backgrounds of ivory, with festoons and borders of dark green foliage and incandescents with splashes of color in flower decorations to give warm tones to the whole."

Further originality will be displayed in the mounting of the signs. The complete list of exhibitors and their wares is as follows:

AUTOMOBILES.

Algonquin Motor Car Co.—Oldsmobile and Columbia electric.
Allen Kingston Motor Car Co.—A-K.
American Auto Co.—American.
American Simplex Co., of Boston—American Simplex.
Anderson Carriage Co.—Detroit electric.
Austin Auto Co.—Austin.
Auto Car Equipment Co.—Commercial.
Bailey & Co., Inc., S. R.—Bailey electric.
Boston Motor Co.—Acme.
Bowman & Co., J. W.—Stevens-Duryea.
Buick Motor Co.—Buick.
Butler Motor Car Co.—Rapid.
Chase Motor Truck Co.—Chase.
Crown Motor Car Co.—Glide.
Curtiss-Hawkins—Speedwell and Chadwick.
Dodge Motor Vehicle Co.—Pope-Hartford and Waverley electric.
Dunham, Geo. J.—Royal Tourist.
Eaton, Chas. A.—Lambert.
Farrow, Henry F.—Grout and Hupmobile.
Fiat Auto Co.—Fiat.
Ford Motor Co.—Ford.
Franklin Automobile Co.—Franklin.
French Carriage Co.—Pullman.
Fuller, Alvan T.—Packard and Cadillac.
General Auto Co.—Holsman.
General Vehicle Co.—Commercial.
Gramm-Logan Motor Car Co.—Gramm-Logan.
Hol-Tan Co., The—Lancia.
Hotchkiss Import Co.—Hotchkiss.
Jackson Automobile Co.—Jackson.
Jenkins & Co., W. M.—Mitchell.
Jeffery & Co., T. B.—Rambler.
Jewell Motor Car Co.—Jewel.
Kissel Kar Co.—Car De Luxe and Kisselkar.
Lane Sales Co.—Lane steamer.
Linscott Motor Co.—Reo, National and Overland.
Locomobile Co. of America—Locomobile.
Lowe, Geo. H.—Pennsylvania, Regal and Gyroscope.
McCue Co., The—McCue.
MacAlman, J. H.—Columbia.
Maguire Co., J. W.—Pierce-Arrow.
Matheson Auto Co.—Matheson.
Maxwell-Briscoe-Boston Co.—Maxwell.
Mora Motor Car Co.—Mora.
Neale, A. F.—Baker electric.
Nichols & Co., D. P.—Frayer-Miller..
Oakland Motor Car Co.—Oakland.
Palmer & Singer—P. & S. and Simplex.
Panhard & Lavassor—Panhard.
Park Square Auto Station—Berliet and Stoddard-Dayton.
Peerless Motor Co.—Peerless.
Pixley Co., G. H.—Pixley.
Premier Boston Depot—Premier.
Reed-Underhill Co., The—Knox.
S. M. Supply Co.—Inter-State.
Sampson Mfg. Co., Alden—Sampson.
Schacht Mfg. Co.—Schacht.
Smith, Fred S.—Autocar, Apperson and Oakland.
South End Motor Car Co.—Brush and Atlas.

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Stanley Motor Carriage Co.—Stanley steamer.
Stanley Webster Co.—Pittsburg Six.
Studebaker Bros. Co., of New York—Studebaker and E-M-F.
Waugh Co., Chas. W.—
Welch Motor Car Co.—Welch.
White Co., The—White steamer.
Whitten-Gilmore Co., The—Thomas and Chalmers-Detroit.
Winton Motor Carriage Co., The—Winton.
Wing, F. E.—Marmon.

MOTORCYCLES.

American Motor Co.—M-M motorcycles.
Aurora Automatic Machinery Co.—Thor motorcycles.
Auto-Bi Co.—Greyhound motorcycles.
Bicycling World Co.
Consolidated Mfg. Co.—Yale-California motorcycles.
Crouch Motor Co.—Crouch motorcycles.
Curtiss Mfg. Co., G. H.—Curtiss motorcycles.
Excelsior Supply Co.—Excelsior motorcycles.
Harley-Davidson Motor Co.—Harley-Davidson motorcycles.
Hendee Mfg. Co.—Indian motorcycles.
Merkel-Light Motor Co.—Merkel and Light motorcycles.
Motorcycle Manufacturers Association.
New Era Gas Engine Co.—New Era motorcycles.
N. S. U. Motor Co.—N. S. U. motorcycles.
Ovington Motor Co.—F. N. motorcycles.
Pierce Cycle Co.—Pierce motorcycles.
Reading Standard Co.—R-S motorcycles.
Reliance Motorcycle Co.—Reliance motorcycles.
Walton Motor Co.—Midget Bi-Car.

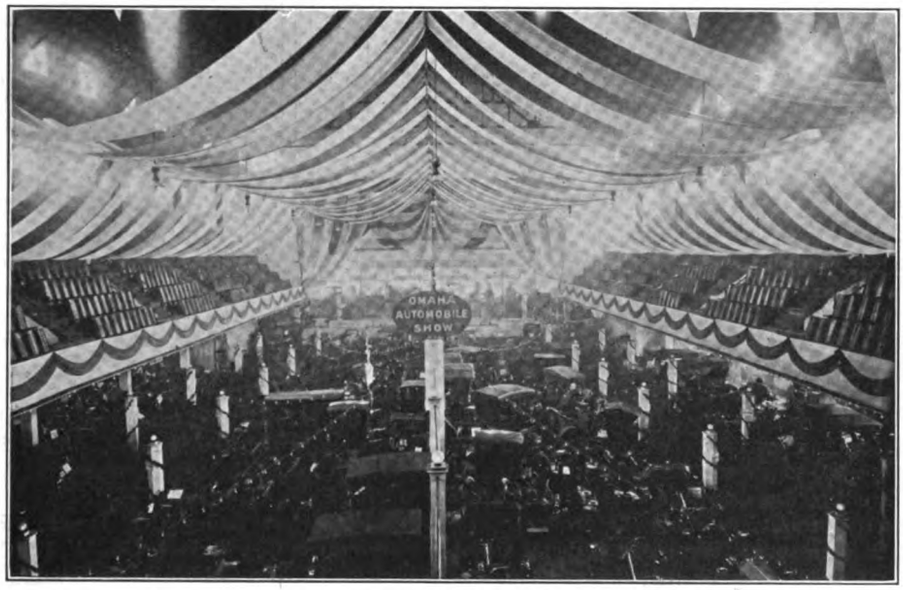
ACCESSORIES.

Aetna Life Insurance Co.—Liability insurance.
Ajax-Grieb Rubber Co.—Ajax tires.
Allen Auto Specialty Co.—Tire jackets and specialties.
Allen Fire Department Supply Co.—Two-port carburetters.
Allen & Son, M. W.—
American Stepney Spare Wheel Co.—Spare wheels.
American Storage Battery Co.—Accumulators.
Angier Co., The—Supplies.
Atlas Rubber Co.—Non-puncturable inner cases.
Atwater-Kent Mfg. Co.—Ignition systems.
Atwood-Castle Co.—Lamps.
Auto Improvement Co.—Accessories.
Auto Tire Inflating Co.—Wyman tire tanks.
Badger & Sons Co., E. B.—Hoods, tanks, fenders and piping.
Batavia Rubber Co.—Tires.
Bi-Motor Equipment Co.—Supplies.
Boston Auto Gage Co.—Triumph tank gauges.
Boston Tire & Rubber Co.—
Boyd, F. Shirley—Supplementary Spiral Springs.
Bowser & Co., S. F.—Fuel and oil storage systems.
Burns Boston Battery Mfg. Co.—Dry batteries.
Byrne, Thos. W.—
Champion Ignition Co., Albert—Ignition supplies.
Chandler & Farquhar Co.—Machine tools and supplies.
Chase & Co., L. C.—Top and cover materials.
Coates Clipper Co.—Flexible shafting.
Coes Wrench Co.—Wrenches.
Colgan Co., J. W.—Monograms.
Columbia Lubricants Co., of New Jersey—Lubricants.
Columbia Vehicle Tire & Top Co.—Tops, tire cases and covers.
Commercial Coil Co.—Ignition systems.
Commonwealth Rubber Co.—Mitchell puncture-proof tires.
Compressed Air Co.—
Connell, W. J.—Casgrain speed indicators.
Continental Caoutchouc Co.—Continental tires.
Coward, J. D.—
Cramp & Sons Ship & Engine Building Co., Wm.—Bronze castings.
Crouch & Seeley—
Diamond Rubber Co.—Diamond tires.
Dixon Crucible Co., Joseph—Graphite lubricants.
Dover Stamping & Mfg. Co.—Drip pans, funnels and measures.
Dow Tire Co.—Dow non-deflatable tires.
Downing, C. J.—Horns, tire fittings and holders.
Duren & Kendall—
Eagle Oil & Supply Co.—Lubricants.
Eastern Carbon Works—Dry batteries.
Edwards, O. M.—
Electric Storage Battery Co.—Accumulators.
Empire Auto Tire Co.—Empire tires.
Empire Sales Co.—
Federal Mfg. Co.—Parts.
Firestone Tire & Rubber Co.—Firestone tires.
Fisk Rubber Co.—Fisk tires.
Flentje, Earnst—Shock preventers.
Forbes, Walter J.—
Ford Co., Percy—
G & J Tire Co.—G & J tires.
Gabriel Horn Mfg. Co.—Exhaust horns and cutouts.
Gilbert & Barker Mfg. Co.—Storage tanks.
Goodrich Co., B. F.—Goodrich tires.
Goodyear Tire & Rubber Co.—Goodyear tires.
Goppelt, Frederick A.—
Gordon Auto Supply Co.—Supplies.
Gray & Davis—Lamps.
Hall Sectional Tire Co.—Tires.
Harriman Bros.—
Harris Oil Co., A. W.—Lubricants.
Hartford Rubber Works Co.—Hartford tires.
Hartford Suspension Co.—Truffault-Hartford shock absorbers.
Harvey Co., Arthur C.—
Hasselkus, W. M.—
Havoline Oil Co.—Lubricants.
Haws, Geo. A.—Lubricants.
Heinze Electric Co.—Ignition systems.
Hillman Auto Supply Co.—Supplies.
Hisey-Wolf Machine Co.—
Hoffecker Co.—Speed indicators.
Holtzer-Cabot Electric Co.—Ignition systems.
Hopewell Bros.—Tire casings.
Hoyt Electrical Instrument Co.—Ignition systems.
Hume Carriage Co.—Tops and robe racks.
Jones Speedometer—Jones speed indicators and speedometers.
Jones W. Herbert—National speedometers.
K. W. Ignition Co.—Ignition systems.
Kellom & Co., Chas. F.—Lubricants.
Keystone Lubricants Co.—Lubricants.
Kidder, Chas. W.—
Kilbourne-Corlew—
Kilgore Mfg. Co.—Shock absorbers.
Knapp-Greenwood Co.—
Lavalette & Co.—Ignition system.
Leather Tire Goods Co.—Woodworth tire treads.
Lebanon Steel Casting Co.—Parts.
Leland & Co., W. H.—
Loring Auto Appliance Co., The—Speed indicators.
Lovell-McConnell Mfg. Co.—
MacVichie, Donald.—
Maryland Casualty Co.—Insurance.
Massachusetts Auto Co.—Butler tires.
Malden Centre Garage.—
Michelin Tire Co.—Michelin tires.
Miller, Chas. E.—Supplies.
Monitor Mfg. Co.—Monitor speed recorders.
Morgan & Wright—Morgan & Wright tires.
Moran, S. J.—
Moore-Smith Co.—Fur coats.
Morse & Co., Alfred Cutler.—
Morse Co., A. S.—
Murray & Co., P. A.—
N. Y. & N. J. Lubricants Co.—Lubricants.
National Battery Co.—Dry batteries.
National Carbon Co.—Dry batteries.
National Tube Co.—Cold drawn steel tubing.
New England Cement Stone Co.—
New England Motor Sales Co.—
Nightingale Whistle Co.—Exhaust whistles.
Norton Grinding Co.—Machine tools and abrasives.
Nugget Polish Co., Ltd.—Polishes.
Oliver Mfg. Co.—Tacks.
Pantasote Co., The—Imitation leathers
Parker & Co., F. R.—
Parker Mfg. Co.—Standard speedometers.
Pennsylvania Rubber Co.—Pennsylvania tires.
Perfection Wrench Co.—Wrenches.
Pettengill-Andrews Co.—Ignition systems.
Pittsfield Spark Coil Co.—Ignition systems.
Polson, W. F.—
Post & Lester Co.—Supplies.
Proctor Supply Co., G. H.—Republic tires.
Randall-Faichney Co.—B-line grease guns.
Republic Rubber Co.—Republic tires.
Robinson & Son Co., W. C.—Lubricants.
Russell Co., T. F.—Accessories.
Rutherford Rubber Co.—Sterling tires.
Sager & Co., J. H.—Supplementary spiral springs, demountable rims.
Salmon & Co., John A.—Monograms.
Sexton Can Co.—
Shawmut Tire Co.—Tires.
Splitdorf, C. F.—Ignition systems.
Springfield Portable Construction Co.—Portable garages.
Stackpole Battery Co.—Dry batteries.
Standard Tire & Rubber Co.—
Standard Welding Co.—Parts.
Sterling Hardware Co.—
Stromberg Motor Devices Co.—Goldberg carburetter.
Swinehart Clincher Tire Co.—Swinehart tires.
Teal Mfg. Co.—Tire cases, covers and top materials.
Travelers Insurance Co.—Insurance.
Twin Elm Spring Co.—
Underhay Oil Co.—Lubricants.
Underhill Co.—
Vacuum Oil Co.—Lubricants.
Veeder Mfg. Co.—Odometers and tachometers.
Vesta Accumulator Co.—Accumulators.
Voorhees Rubber Mfg. Co.—Tire repair outfits.
Ward & Sons, Edgar T.—
Walker Lithographing Co.—
Warner Instrument Co.—Autometers.
Winestock Mfg. Co.—
White & Bagley Mfg. Co., The—Lubricants.
Whitney Mfg. Co.—Chains.
Witherbee Igniter Co.—Accumulators and ignition specialties.
Wilkinson & Co., A. J.—Machinery and tools.
Worcester Pressed Steel Co.—Pressed steel parts.
Zeglan Bullet Proof Cloth Co.—Non-puncturable fabrics and tire casings.

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Omaha Show Introduces Some New Productions

Purple and white were the dominant colors in the setting which lent to the third in Omaha's annual show series, which opened on the 22d ult., its effectiveness. Western enthusiasm and dash, however, supplied the necessary element to make this one of the most successful of the smaller shows of the year, if not the most enjoyable to the visitor. When the doors were opened on the first show in Omaha, exactly six exhibitors were disclosed hovering around a pitifully small array of vehicles. The present effort resulted in calling out no less than 25 exhibitors all told, of whom an even score staged cars. Of different makes of car, there were 31, and these, together with the accessories displayed by the balance of the exhibitors, constituted a representation much appreciated by the visiting contingent, and most creditable to the efforts of manager C. G. Powell.



GENERAL VIEW OF THE OMAHA SHOW.

The floor of the Auditorium was marked off with a row of white posts, capped with electric light globes, while in the very center a larger post was surrounded by a big sign bearing the name of the show. The ceiling was hidden by folds of purple and white bunting, while from the balconies on either side, hung baskets of flowers and greenery. Upon the stage at one end, where the accessories were displayed, the purple and white combination was further worked out in the formation of an effective, neutral background for the exhibits.

One feature of general interest, was the appearance of several cars which have not before been seen this year—two of them, in fact, never before at any show. These were the Hupmobile, which is of the light and low-priced order, albeit thoroughly equipped even to magneto ignition; and mounting such features as a four-cylinder motor of 16-20 horsepower, unit plant with selective gearset and shaft drive; and the Velie "Limited," which is a staunch and modish appearing machine, possessing a 40 horsepower, high speed engine of Herreshoff design. Others of the newcomers, but cars already known in the market, were the International, the high-wheeled product of the International Harvester Co.; the Stanley steamer, and the Mason—the latter unusual in that it still retains its 24-28 horsepower, opposed type of motor and a number of other original features, but which is this year improved in a number of ways. An interesting point in its construction, which may be mentioned in passing, is the formation of the intake passages integrally with the cylinders and crank case, whereby all external piping is avoided. The complete list of exhibitors is as follows:

Automobiles: Atlantic Automobile Co., Ford and Reo; Bergers Automobile Co., Buick; Coit Automobile Co., Rambler and Mitchell; Deere Plow Co., John, Velie and Columbus gasolene and electric; Deright & Co., J. J. Stoddard-Dayton and Matheson; Drummond Automobile Co., White steam and Woods electric; Electric Garage, Baker electric; Freeland Bros.-Ashley Co., Mason and Midland; Huffman Automobile Co., Auburn; Huffman, W. L., Regal and Hupmobile; International Harvester Co., International; Kimball, R. R., Stevens-Duryea, Cadillac, Stanley steam and Babcock electric; Kuhn, Buick, Holsman; Lininger Implement Co., Oakland; Louk, C. F., Maxwell; Northwell Co., T. G., Brush; Oldsmobile Co., Oldsmobile; Pioneer Implement Co., Jackson and Detroit electric; Smith, Guy L., Franklin; Van Brunt, H. H., Pope-Hartford and Overland.

Accessories: Baum Iron Co., Central Tire & Rubber Co., Omaha Bicycle Co., Omaha Rubber Co., Powell Supply Co.

Representative Array of Cars at Buffalo Show

It is Buffalo's seventh annual show, which opened in the Convention Hall on Monday, 1st inst., and is holding for the entire week. Not only that, but it promises to be a record breaker in point of volume and attendance as well. From the very first, indications pointed to a far greater demand for space than had been anticipated. Cutting down the allotment of large blocks of space to individual exhibitors failing to remedy this difficulty, it was found necessary for the first time in Buffalo show history to have recourse to some of the space outside the main hall. Two rooms near the main entrance have been brought into use—the one to the right known as the ladies' room, and the one to the left, generally used as a buffet room. More than this, the room on the Virginia street side, generally used as a checkroom, has been pressed into use.

Under the adept handling of Manager Dai H. Lewis, who is the active representative of the energetic Automobile Club of Buffalo, which is holding the show this year for the first time, that ideal of show decoration has been developed—an unobtrusive setting. The ceiling is overhung with a star-spangled sky effect, with a suggestion of blue above and a red dado along the lower walls. Of elaborate decorative structures in the form of railings or walls between the exhibits, there are none, nor is the floor obscured by any sort of ornamental interjection to spoil the view of the cars or detract from their appearance. In fact practically the only conspicuous feature of the setting is the presentment of Uncle Sam himself, who appears in the guise of a chauffeur "outrunning the wind." He is steering a car at the climax of a loop-the-loop, high in air above the other cars which have secured the throne of royalty on the stage.

Aside from the fact that it is recognized

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as a good "automobile town," and hence is attractive alike to agents and manufacturers, Buffalo is located within such favorable proximity to the manufacturing centers of the industry as to draw a notably representative array of cars to its portals during show time. In fact, in average quality the display "measures up" well with that of national shows. With a total of something like 150 spaces available, all told, and no less than 83 exhibitors, practically none of the well known makes of car are lacking from the show. In fact, it represents a first-class selection from the grand total which the market offers at the present time. A partial list of the exhibitors follows:

Automobiles: Babcock Electric Carriage Co., Babcock electric; Brown Motor Car Co., Ralph E., Winton and R. & L. electric; Brunn & Co., Franklin; Buick Motor Co., Buick; Buffalo Auto Exchange, Pope-Hartford and Selden; Centaur Motor Co., Oakland, Oldsmobile and Rapid; Co-operative Motor Car Co., Stevens-Duryea and Knox; Cramer, J. A., Stoddard-Dayton and Mitchell; Hatch, Mason B., Stearns and Chalmers-Detroit; Maxwell-Briscoe Motor Co., Maxwell; Meyers Carriage Co., Pullman, Firestone and Crawford; Pierce-Arrow Motor Car Co., Pierce-Arrow; Poppenberg Motor Car Co., Rambler, Premier, Reo and Regal; Thomas Motor Co., E. R., Thomas.

Accessories: Brainard, Harry P., Centaur Motor Co., Diamond Rubber Co., Denniston, E. W., Goodrich Co., B. F., Jaynes Automobile Supply Co., Neal, Clark & Neal Co.

Vehicles for Land and Sea at Portland Show.

Automobiles, motor boats, accessories and generalities combined to swell the display staged in the Auditorium at Portland, Me., last week, where the fourth annual automobile and motor boat show held the boards from the 22d to 27th ult., inclusive. Without either of the four contributory features the bulk of the affair would have dwindled appreciably, which is the same thing as saying that interest was about equally divided between the various classes of display. Marshalled under the management of Frederick M. Prescott, who has had the handling of each of the previous shows, the arrangements passed off smoothly, and the result is counted a big success, despite the fact that the total number of exhibitors was not as large as it has been on former occasions of the sort.

Decorations in the hall were confined to a liberal application of bunting—red, white and blue, of course—in streamers running athwart the Auditorium, and hung upon the walls. If the setting was less elaborate than has been the case at some of the other purely local shows, however, the affair lacked none of the interest which all well-conducted shows should have. A large number of the better known makes of car were represented in their latest guise, their improved condition as contrasted with their predecessors of 1908, serving to excite the expected amount of comment and admiration. Furthermore, the slight reduction in the total number of firms holding space on the floor could hardly be counted a disadvantage in view of the fact that those who were in evidence in a number of instances occupied larger spaces than ever before, so that instead of vacant spaces, there were larger displays of the favorite marks in more than one case, and consequently a better opportunity to study the product.

Of accessories, there was a liberal assortment, what lack of manufacturers existed being compensated for by the several jobbers and general supply men present, the extent of whose lines served to increase the variety of the array mightily. Excepting the marine section of the show, the wireless telephone people, and the merchants in candy and notions, the list of exhibitors was as follows:

Automobiles: Buick Motor Co., Buick; Commercial Exchange, second-hard cars; Darling Automobile Co., Reo; Gilson Auto Co., L. C., Mitchell and Stanley steam; Harmon Automobile Co., White, Franklin, Thomas and Chalmers-Detroit; Maine Motor Carriage Co., Stevens-Duryea and Peerless; Miller, J. Calvin, Black; New England Motor Sales Co., Marion; Nickerson & Co., F. A., Pierce-Arrow and Oldsmobile; Portland Co., The, Knox; Stoughton & Folkins, Maxwell; Stuart, George L., Cadillac; Studebaker Automobile Co., Studebaker; Wentworth, F. F., Overland.

Accessories: Bailey Co., James; Borne Scrymser & Co., Blake & Co., W. L.; Chamberlain, H. W.; Cobb., E. L.; Gordon Auto Supply Co., Harris Oil Co., A. W.; Little Oil Co., F. H.; New England Motor Sales Co., Salmon & Co., E. L.; Sterling Hardware Co., Underhay Oil Co., Vacuum Oil Co., Valvoline Oil Co.

Run of Minor Shows and a Show Run.

Inaugurated by a parade in which a brave showing of locally owned cars was made, Terre Haute, Ind., witnessed its first automobile show this week. The exhibition itself was opened on Tuesday, remaining open yesterday and closing to-night (Thursday) in the armory of company B, I. N. G. While not a huge show, as shows go, it was a huge success, and it followed in the footsteps of many another exhibition of its kind in that its manager, Charles Duffin was hard put to it to find space enough to accommodate all the exhibitors to their liking.

Preparations for the first show to be held under the auspices of the Milwaukee (Wis.) Automobile Club have advanced to the stage of allotting spaces, and 16 local agencies have secured stands for the affair. Dealers in accessories and supplies remain to be accommodated by the management. The dates set for the show, which is to be held in the Hippodrome, are Thursday, Friday and Saturday, March 11, 12 and 13, respectively.

Logansport, Ind., is to be numbered in the list of towns holding purely local shows this year, the agents and dealers of its vicinity having determined upon a show project of modest proportions and effected an organization with that in view. Thirteen makes of automobile are represented locally, not to mention a half-dozen different brands of motorcycle and a liberal array of accessories. These interests are represented in the new organization of which George P. Bliss, who is the leading spirit in the movement, has been elected permanent chairman. March 25, 26 and 27 have been fixed upon as the dates, and the Broadway garage, which formerly was a skating rink, as the place for the exhibit. Suitable decorations and entertainment will be provided.

Under the initiative of manager Chester I. Campbell, of the Boston show, plans are well under way for a mid-winter endurance contest to be held on Thursday, March 11, from New York to Boston. A sanction for the contest has been granted by the contest board of the American Automobile Association, and L. M. Bradley has been named as referee, while R. H. Johnson of the White Co., has volunteered his services as pathfinder and master of confetti. Arrangements for the affair are in the hands of Mills and Moore, who report a promising list of entries already. The winner is to receive the Campbell trophy, which was won by L. H. Perlman, the erstwhile "Motor King," in 1906, but which he has tendered back to its donor, at the same time suggesting that it be used hereafter as a perpetual challenge trophy.

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AUTOMOBILE CAMP FOR SPORTSMEN

Complete Equipment Compactly Arranged for Transportation on the Car—Ample Shelter and Many Conveniences.

Its wood fire burning merrily and its kettles steaming, the "automobile camp" is one of the features of the Sportsman's show which this week is holding forth at Madison Square Garden, New York. To a large



"AUTOMOBILE CAMP" READY FOR EXPEDITION

touring car is guyed an automobile tent, 8½ feet high. Scattered around the camp fire and near the tent are tables, chairs and cooking outfits enough to prepare an elaborate meal for seven people. In the tent itself, which is equipped with floors and door sills, is a pantry containing enough condensed food to last a party of five persons for two weeks. The sleeping accommodations consist chiefly of sleeping bags, which are claimed to be both cold and rain proof.

A duplicate of the outfit, including tent, flooring, furniture, sleeping bags, food supply and cooking utensils, all packed and ready for touring, is shown strapped to the fenders and running board of the car. It is claimed that with such an outfit, a party of five or even seven people could tour from New York to San Francisco or from Texas to Montreal and be independent of the hotels en route, and the originators of the ideas embodied in the exhibit paint glowing pictures of the automobile camp as placing at the command of the motorist almost any region where big game or unusually good fishing calls him.

The tent shown is made of a new material which is said to be both waterproof and wind proof, and is the same as has been selected for the Roosevelt expedition to Africa. Each of the elements of the outfit is a specialty developed by a separate manufacturer, but assembled by one concern into a complete equipment. On the car, the small space required is evident from the accompanying illustration of a touring car to which the complete camp equipment is strapped. The remarkable extent to which the tent and other articles comprised in the outfit may be condensed for carrying purposes permits of a generous spread of floor space and ample room when in camp, without seriously encumbering the car when on the road.

Midgleys for Pope Testers.

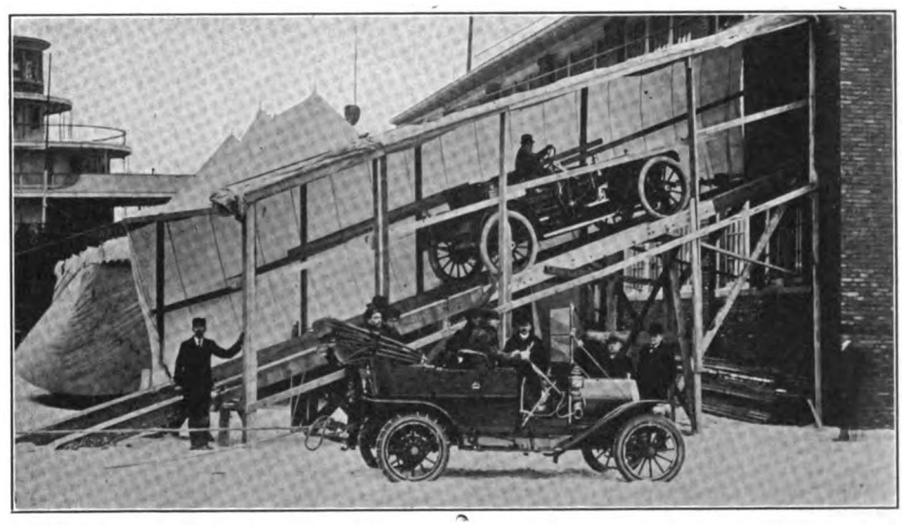
With an intimate knowledge of the conditions to be met, the Pope Mfg. Co., Hartford, Conn., has selected the Hartford Midgley Tread Tures, which also are natives of Hartford and are made by the Hartford Rubber Works Company, as the equipment for their test cars. The contsruction of the Midgley tread, which incorporate a series of four coils of steel wire vulcanized in the surface of the rubber, makes them particularly adapted to meet the rigorous requirements of test running. Frequent changes and unsparing use of the high gear and the brakes renders this one of the most severe trials to which the equipment can be put.

PLEASURE CAR IN UTILITY STUNT

Acts as Traction Engine in Housing Exhibits at Detroit Show—Moves Many Heavier Vehicles up an Incline.

Unkind and antagonistic commentators find pleasure in the spectacle usually presented in connection with automobile shows, of the display vehicles being transported or hauled into the show building by horses, but at the recent Detroit exhibition they were in a large measure cheated of the opportunity for such raillery. For a time it looked as though the horse would have to play its customary part, but the reluctance of the management to permit even subsidiary equine participation led to an offer being made to several power truck manufacturers to have their products do the pulling and hauling that was necessary in conveying the exhibits up the incline to the second floor of the building.

One maker finally accepted, but the truck failed to appear and the congestion of show cars waiting to be hauled up the incline grew to such an extent that an E-M-F. touring car was pressed into service to attempt the job. Its first efforts were a failure, in that the rear wheels spun around without sufficient traction. Inviting the idle men and boys standing by, to pile into the tonneau, the show manager succeeding in loading the car down so that the driving wheels gripped, and, as indicated in the accompanying illustration, the exhibits were drawn up the runway in smart style, by means of a 1½-inch rope and a single and double block. The incline presented a rise of 13 feet in 40, giving a grade of a little more than 30 per cent. Over 50 of the 62 cars which were drawn up weighed more than twice as much as the car which supplied the power, the latter being in service for about 36 hours in the work.



E-M-F. TOURING CAR IN EMERGENCY SERVICE

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STANDARD TEST OF PERFORMANCE

Royal Automobile Club of Great Britain Adopts a System of Certification—Its Purpose and Method.

Failing as yet to arrive at a thoroughly satisfactory solution of the engine rating problem by any simpler means, the Royal Automobile Club of Great Britain has at length fixed upon a standard method of test which shall be employed in certifying to the performance of engines, whereby manufacturers may obtain for their product an absolutely authentic statement of the capabilities of their product. It will be remembered that the effort to develop a suitable and simple rating formula has resulted in a tremendous amount of theorizing during the past two or three years, the so-called R. A. C. formula, which is the same as that subsequently adopted by the Association of Licensed Automobile Manufacturers in the United States being one of the results. This expression failing to give a satisfactory account of the probable power of a motor of given dimensions, a special commission was appointed last year for purposes of investigation, consisting of representatives from the automobile club, the Institution of Automobile Engineers, and the Society of Motor Manufacturers and Traders. Despite the lapse of considerable time since its appointment, however, it has as yet brought forward no distinct recommendation of a simple substitute for the R. A. C. formula. While in no sense an expression of despair at the impossibility of arriving at an equable means of rating by algebraic means, the club's latest action is evidence enough in itself that such methods are considered impracticable or at least insufficient at the present time.

The purpose and method of the new standard test as set forth in a set of regulations issued by the club are as follows:

The object of the trial is to submit an engine to a test of comparatively short duration representing the equivalent of a considerably longer period in ordinary use.

1. The trial will be held under the Certified Trials Regulations except as regards Clauses 6, 8, 9, 10 and 12, which shall not apply.
2. These regulations shall apply equally for any engine, irrespective of the number of cylinders.
3. The certificate shall show, inter alia, the results of the following tests:
   a. The fuel consumption on the bench.
   b. The output of the engine, as specified by the entrant, maintained for a period of two hours, or any multiple thereof (at the declared number of revolutions), obtained without interruption of the test for which the entrant may at the time of the test decide to coninue; together with the period during which the b.h.p. does not fall 7 per cent. below the b.h.p. as specified by the entrant.
   c. The maximum b.h.p. which can be maintained for 15 minutes below some limiting speed to be declared by the entrant.
   d. A record of all repairs and adjustments (except those connected with the carburetter or ignition gear) which may cause stoppage of the engine.
4. The average cooling water temperature at the outlet and inlet from the engine will be recorded. The temperature of the cooling water supplied during the entire test on the bench must not be less than 50 C. or 122 F., and will in any case be recorded.
5. Every engine so tested on the bench shall be run at least 50 miles in a car (on Brooklands or on a private track) and for any further distance asked for by the entrant at the time of entering. The speed of the car shall be such that when it is on top speed the engine will be running at two-thirds of the revolutions at which the maker has declared the horsepower. The maximum speed obtained over any distance of not less than 2 miles shall be recorded.
6. The weight of the engine, the weight and wind area of the car will be recorded.
7. The Club shall test the R. A. C. number of the fuel used.
8. No dismantling of any vital part of the engine shall be allowed between the bench test and the car test, i. e., no part of the crank case (including any inspection cover, cylinders, cylinder heads, or valves) shall be removed.

Obviously the intention is to embody in the certificate practically all that an exacting manufacturer would require on the data sheet pertaining to the test of one of his own motors, and made out by his own experimental department but standardized in such a way that the certification may be used in comparing machines of different makes for purposes of competition or otherwise. The particular utility of such a system, by contrast with any method of rating by set formula is that it is applicable equally as well to engines of unusual, not to say freakish pattern, as to those of strictly standard proportions.

Thus, it is pertinently indicated by interested parties in England, that the new R. A. C. test is likely to prove particularly enlightening as applied to the 1909 Daimler engine, which is the notorious adaptation of the American Knight engine, and which, judging by the claims of its makers, might be regarded as a favored competitor if, for example, it were to be put into a race on a horsepower rating based on the old formula which took into account only the bore of the cylinder, and disregarded all considerations of stroke, method of gas distribution and speed.

Objections already are forthcoming to even this Utopian scheme, however, and apart from the obvious difficulty of inducing manufacturers to make use of the system freely and wisely, it would appear that the education of the public to the full value and significance of the tests, which is the point brought up, would be difficult of accomplishment. Says one commentator in this connection:

"The one and only drawback that we anticipate has nothing to do with the tests, nor with their inherent utility to the owner and the user. The fear is that the purchasing public will altogether under-estimate the severity of the trials, owing to their very compactness and comparatively short duration, or that they will erroneously fail to detect the deep significance of bench-tests to themselves as automobilists rather than as 'engine drivers.' Should that unfortunate line be adopted at all generally, the makers will not find it worth their while to obtain the R. A. C. certificates. And the motoring public would then be the losers as a result of the delusion that the road shocks of ordinary touring can impose strains upon an engine that are at all comparable with those in the test-room or those of continuous high-speed traveling at Brooklands."

Supplementing the Inclined Footboard.

Development of the push-pedal type of clutch and foot brake control has resulted in the rapid introduction of the inclined footboard, which is useful among other things, as a means of concealment for some of the accessories which formerly were mounted directly on the dash. At the same time, the practice has resulted in many machines in a driving position which is far from comfortable, particularly on a long run. In some instances the pedal plates are placed so far above the floor that it is only with difficulty that the feet can be kept in place after a few hours of continuous driving. To obviate this difficulty without robbing the machine of the neatness which arises from the use of the inclined footboards, one foreign designer has arranged the flooring in front of the driver's seat with special regard to convenience in control, while that on the left side is given the popular rake.

Another Amphibious Automobile.

Land and water combinations still appeal to inventors, and Rear Admiral J. A. Howell, U. S. N., retired, who makes his home in Atlantic City, N. J., has been amusing himself in devising a vehicle which will not only travel the roads, but will plow the waves. He calls it "The Amphibian," and its appearance on the street suggests a runaway submarine. Every bar in Atlantic City felt a distinct slackening in trade as the result of the machine's visual impression on the citizens and visitors, when it came out the first time recently. The admiral and his son, a young engineer, have spent about $7,000 on it so far, and hope to perfect it soon to practical capabilities.

Replacing Hose in Water System.

When rubber hose is used in the water system and its removal is necessary to effect a repair, some difficulty may be experienced in replacing it, owing to the end of the pipes being corrugated. If vaseline be smeared on the inner surface of the hose, at the ends, and also around the outer surface of the water pipe, the hose replacement will be greatly facilitated with minimum effort. When replacing the hose clamps care should be taken to place them back of the expanded portion of the pipe, so that when they are tightened, no water will find its way past the joint to the outside.

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FAST FLIGHTS IN ZIG-ZAG CLIMB

Apperson Makes Spectacular Run at Pasadena-Altadena Meet—A Day of Close Contests and Broken Records.

With 20,000 persons in attendance, a course faster than last year, and a more representative and faster field of contestants, the fourth annual Pasadena-Altadena hill climb, under the auspices of the Automobile Dealers' Association of Southern California, on Washington's Birthday, 22d ult., proved the most successful event ever promoted in Southern California, and one of the most successful hill climbs ever held in America. Not only was the record for the course broken by Edgar Apperson, when he dashed up the long winding hill in the remarkable time of 1 minute 24 seconds, but nearly all the records in the various classes were shattered. Honors between cars also were well divided. Upon the point system of scoring—5 points for first, 3 points for second, 2 points for third, and 1 point for fourth—the Kisselkar took premier honors with 19 points, and the Apperson, Stoddard-Dayton and Chalmers-Detroit were next in order, with 15, 13 and 11 points, respectively.

Considering the poor police surveillance of the course, it was miraculous that not a single catastrophe marred the meet, although one narrowly averted accident gave one section of the crowd a thrill for the moment it lasted. An unknown man elbowed his way through the lines and stepped in the middle of the road just as Apperson, in the big racer bearing his name, came careening around the curve. The man ran for his life, and Apperson swung wide, barely missing the ditch at the side of the course. The unknown man soon disappeared.

The course was in splendid condition for the contest, and a bridge over the Pacific Electric Railway tracks permitted the drivers to jump over this at full speed. The course measures exactly 1.35 miles, with a gradient rising from 3 to 14 per cent., and which contains three turns.

By far the most spectacular performance of the meet was the record run of Edgar Apperson in the free-for-all. Apperson drove fearlessly, took all the turns at full speed, and flashed across the tape at the top of the long incline almost before the spectators had time to jot down the time made by Frank Seifert, who started the event, and finished in 1:36¼. Apperson's time for the course was 1:24, which was 12¼ seconds faster than was made last year by himself over the same course.

Barney Oldfield was picked to either beat Apperson or at least give him a close run for the honor. Oldfield lost the chance by a poor start. It took Oldfield just 19 seconds to negotiate the first leg of the course to the straightaway leading to the railroad crossing, while Apperson covered the same distance in 14 seconds. The Stearns appeared to be going faster at the finish and many in the grandstand there thought Oldfield had won until the time was announced —5½ seconds slower than the Apperson. Bert Dingley also made a good run in the Chalmers-Detroit, covering the course in 1:50, or one-half second faster than in a previous event.

In all the stock car events the rule requiring both roadsters and touring cars to carry their full complement of passengers, was enforced, and despite this handicap, faster time was made in a majority of events than was made in the corresponding classes last year.

The only protest occurred in the class for roadsters costing from $2,501 to $3,000, which was won by Bert Dingley, in the Chalmers-Detroit, in 1:56¼. The rule required that the drivers must be local men, and although Dingley is a native of California and has been working in Los Angeles for several months, some persons were inclined to think that he was not entitled to start. He was allowed to compete under protest, however, and won by a narrow margin from Harris Hanshue, who piloted the Kisselkar in the excellent time of 1:58½. Dingley also captured the free-for-all roadsters, the stop watches recording 1:50½. Hanshue again gave him a stiff battle and lost out by only five seconds. This was the best contested event of the day as honors were very close. Shettler in the Apperson romped up the incline in 1:58¼, only two seconds faster than Seifert in the Stoddard-Dayton, who in turn defeated Hamlin in the Franklin by only 1½ seconds. It really was a blanket finish as there was less than six seconds between the times of the first and fifth cars.

Another close fight was witnessed in the roadster class with price limitations of $3,001 and $4,750. Hamlin and his Franklin were timed in 1:59, but Shettler, in the Stoddard-Dayton beat him by five seconds. In another roadster class Shettler drove a Kisselkar to victory in 2:40.

William Ruess, who sometimes is known as "Wild Bill," demonstrated that he is a starter whose word is law. When the free-for-all started Dingley claimed that he was not given time to get to the line, so another start was allowed. This time Dingley was over anxious and tried to beat the gun. Ruess called him back, fined him $25 as an indication that he was not to be trifled with, and finally sent him away to a good start. Ralph Hamlin suffered a like penalty in the free-for-all, but Hamlin did not mind as his second start proved to be much better than the first.

The summaries:

Runabouts and Roadsters, $501 to $1,000, Two Passengers.

1	E. M. Roe, 20 Ford	3:02½
2	F. Murray, 20 Buick	3:45
3	Lee Garricke, Reo	3:46

Runabouts and Roadsters, $1,001 to $1,500, Two Passengers.

1	Gus Seifert, 25 Stoddard-Dayton	2:28¾
2	F. S. Howard, 20 Buick	2:57¾

Touring Cars, $1,000 to $1,500, Five Passengers.

1	Lee Garricke, 30 Kisselkar	2:57½
2	Joe Lodge, 24-30 Regal	3:03⅗
	T. M. Davis, 30 E-M-F	*
	George Kussman, 22-24 Tourist	*

Roadsters, $1,501 to $2,000, Two Passengers.

1	L. T. Shettler, 40 Kisselkar	2:40
2	Gus Seifert, 25 Stoddard-Dayton	3:12⅕

Touring Cars, $2,001 to $2,500, Five Passengers.

1	George Kussman, 45-50 Tourist	2:39½
2	W. C. Vaughn, 40 Apperson	3:02½

Touring Cars, $1,501 to $2,000, Five Passengers.

1	Frank Murray, 40 Buick	2:36¼
2	Lee Garricke, 40 Kisselkar	2:53¼
3	A. G. Woodill, 40 Oakland	2:59

Roadsters, $2,501 to $3,000, Two Passengers.

1	Bert Dingley, 40 Chalmers-Detroit	1:56¼
2	Harris Hanshue, 60 Kisselkar	1:58½
3	Harry Alles, 45 Stoddard-Dayton	2:06

Touring Cars, $3,001 to $4,750, Seven Passengers.

1	J. Salling, 60 Thomas	2:48¼
2	Carl Hagar, 50 Marmon	3:34⅕

Roadsters, $3,001 to $4,750, Two Passengers.

1	L. T. Shettler, 50 Apperson	1:55
2	R. C. Hamlin, 52 Franklin	1:59
3	Bruno Siebel, 50 Marmon	2:54⅘

Stock Roadsters, Free-for-all.

1	Bert Dingley, Chalmers-Detroit	1:50½
2	Harris Hanshue, 60 Kisselkar	1:55½
3	L. T. Shettler, 50 Apperson	1:58¼
4	Gus Seifert, 45 Stoddard-Dayton	2:00¼
5	R. C. Hamlin, 42 Franklin	2:01¾
6	Frank Murray, 20 Buick	2:42½

Free-for-All, Stripping Allowed.

1	Edgar Apperson, 55 Apperson	1:24
2	Barney Oldfield, 45-90 Stearns	1:29½
3	Gus Siefert, 45 Stoddard-Dayton	1:36¼
4	Bert Dingley, 40 Chalmers-Detroit	1:50
	J. Hoxey, 30 Stanley	†

* Failed to finish. †Damaged before start.

Car.	1sts	2ds	3ds	4ths	Pts.
Kisselkar	2	3	0	0	19
Apperson	2	1	1	0	15
Stoddard-Dayton	1	1	2	1	13
Buick	1	2	0	0	11
Chalmers-Detroit	2	0	0	1	11
Marmon	0	1	1	0	5
Thomas	1	0	0	0	5
Ford	1	0	0	0	5
Tourist	1	0	0	0	5
Franklin	0	1	0	0	3
Stearns	0	1	0	0	3
Regal	0	1	0	0	3
Reo	0	0	1	0	2

Bridgeport Plans a Memorial Day Climb.

Fifty new members were recently admitted to the Bridgeport (Conn.) Automobile Club as the result of a campaign instituted by President Staples. The contest committee has been authorized to begin preparations for the annual hill climbing contest to be held on Memorial Day. In former years the event has been pulled off on Sport Hill in Easton, but as there is talk of compelling the club to pay for the use of the hill this year, Snake hill in Mill Plain will probably be the scene of the contest.

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GETTING IT INTO THE LIMELIGHT

Sanction for New York-Seattle Race Granted by A. C. A.—"International" Aspect of the Contest a Surprise.

Once upon a time a young man went forth to undertake a venture in publicity. The advice he received from an advertising oracle whom he consulted in advance was: "Take on every quarrel you can get—they interest the people and win you priceless amounts of space in the newspapers." This is precisely the idea suggested by the attitude of the promotors of the proposed transcontinental race from New York to the Alaska-Yukon-Pacific exposition at Seattle. By securing a sanction for the event from the Automobile Club of America instead of from the American Automobile Association, which has lately reclaimed some of its lost prestige in the government of automobile sport, it is in a very fair way to secure a most enviable amount of free advertising.

Avoiding plain sailing over the obvious course of applying for a sanction from the contest board of the A. A. A., the promotors of the contest, which is to say, Messrs. Mills and Moore, with remarkable promptitude, came out with the unexpected announcement that the contest is to be of the international order, and applied to the Automobile Club of America for a sanction under the terms of the now-forgotten "treaty of peace" of last fall. This, the willing club promptly granted, stipulating only "that all prize money and trophies should be absolutely guaranteed," and "that the rules should be submitted to the contest committee of the club for approval."

The start of the tour or race, originally had been nominated to occur somewhere between May 15th and June 1st, and the A. C. A. sanction reads June 1st in consequence. It will be remembered further, that the new rules of the contest board of the A. A. A. specifically state that no sanctions will be issued for a long distance road reliability contest within one month of the duration of the Glidden contest. While, of course, no one suspects for a moment that this fact had anything to do with the sudden determination to call the New York to Seattle affair an international contest, it may be considered a remarkable coincidence that a recommendation is now being considered to advance the date for the start of the race to somewhere between May 20 and 25, in order to avoid interference with the Glidden tour. This information was communicated to the Motor World by a representative of Mills and Moore.

It was further explained that the A. C. A. sanction had been obtained for two reasons: First, because the cause of the race already had been canvassed abroad so successfully that a number of entries were expected of cars not represented by American agents; and second, in order to gain access to the extensive information in possession of the bureau of tours of the A. C. A. An emenation from the same source sent out late last week, however, placed the matter in a slightly different light, thus:

"When asked why an international sanction had been granted this contest when one was not considered necessary for the Daytona, Fla., races, a prominent member of the contest committee of the club said, 'An examination of the entry blank of the Daytona races and the application for sanction disclosed that the races were not of such a character as to require an international sanction, whereas from investigation of the transcontinental contest for the Guggenheim cup, we are convinced that it will be international beyond a doubt.'"

The kernel in the shell is indeed a pearl of inconsistency. For whereas the original A. C. A. definition of an international contest so constituted any event advertised as such, and whereas the Daytona meet is advertised on the entry blank as an international contest and presumably is to be run under the full sanction of the new A. A. A. arrangement, the transcontinental event—which, by the way, is announced by the publicity department of the Alaska-Yukon-Pacific exposition as being "under the management of the Automobile Club of Seattle"—had not been characterized as anything other than national prior to the application for the lovely sanction which it now holds. Furthermore, so far as is known, no entry blanks for the latter event have as yet appeared.

Program for New York Carnival.

Plans for the carrying out of the carnival project of the New York Automobile Trade Association, which has been fixed upon for the week of April 5th, were announced following a mass meeting of the trade held at the Automobile Club of America late last week. The program as it at present stands will include a big daylight parade on Saturday afternoon, April 10th, in addition to which there will be a hill climbing contest on Fort George hill, gymkhana games and tests of cars at Morris Park, and straightaway time trials on Ocean Parkway, with a smoker at the club house of the Automobile Club of America on Saturday night, when the different trophies and prizes of the week are to be handed over to the winners.

An additional committee of ten was nominated at the meeting to assist Gen. John T. Cutting, chairman of the finance committee in raising the necessary funds for the enterprise, which it is estimated must be brought up to between $15,000 and $20,000. For this purpose, the following were named: E. W. Bonham, F. M. Hadley, Harvey Adams, W. J. Coghlan, F. M. White, George F. Hare, Oscar Hausen, Richard F. Fenker, W. C. Poertner, Harry Pyke, and A. J. Interriedon.

WANTS ITS OWN RULES TO GOVERN

Harrisburg Club Conditionally Willing to Get A. A. A. Sanction—Schedule for Its Reliability Contest.

Annoyed at the possibility of having to submit to rules other than those produced by its own members, the Motor Club of Harrisburg (Pa.), after much discussion as to whether it should openly defy the contest board of the American Automobile Association or apply to it for a sanction, for its annual reliability contest, has adopted a middle course. It has notified Chairman Hower of the board that it has decided to hold its annual reliability contest under its own rules and conditions, that it will pay a sanction fee if notified that such a fee is necessary, and that if the A. A. A. rules were before it, it "would be very glad to consider them carefully and adopt from them such suggestions as might be thought applicable"; but that it has as yet received no official notification of the controlling function being assumed by the contest board over all local reliability tests.

This interesting communication was evolved at a meeting of the contest committee of the Harrisburg club on Monday of this week. The rules adopted by the club are practically the same as those employed a year ago. The date of the contest has been fixed for May 3-6, inclusive.

The first day's route will lead from Harrisburg to Washington, vit Gettysburg, Hagerstown, Harper's Ferry and Frederick. On the second day contestants will return to Harrisburg via Baltimore, Westminster, York and Lancaster. On the third day the route leads from Harrisburg to Scranton, following the Susquehanna river most of the way and passing through a number of important towns including Walkes-Barre. On the fourth and last day of the contest, the return will be made to Harrisburg, via Delaware Water Gap, Boston, Allentown and Reading.

Florida Will Have the Beach Meet

Calmed somewhat, by the influence of time and second thought, W. J. Morgan, whose resentment at the mandates of the contest board of the American Automobile Association caused him last week to throw out dark hints of a possible suppression of the Daytona Beach carnival, has quite recovered from the effects of his temporary obsession. At a meeting of the Florida East Coast Association, held Saturday evening last, it was decided to go ahead with arrangements for the meet with the full backing of the club. Threatened financial complications over the A. A. A.'s demands for an assurance of real monetary backing for cash prizes offered, has been averted, as cash for the money prizes has been deposited with the Merchants Bank of Daytona.

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BUYERS BUILD THEIR OWN CARS

Features of the "Metz Plan" for Selling Machines in Instalments—Progressive Purchase on C. O. D. Basis.

Finding its market with the big general public, the automobile industry gives the widest possible field for the exploitation of whatever novelty and ingenuity can be introduced in a sales campaign or selling plan, and ideas which promise either to create new classes of customers or win an increased proportion of the already recognized buying elements are at a premium. In this connection a conspicuous and interesting example of a new selling plan, where the product has been made to fit it, has been originated and is being put in operation by C. H. Metz, of Waltham, Mass., who about two months ago acquired the plant of the Waltham Mfg. Co. While involving old principles it presents them in an application which as a whole is entirely new to the automobile trade, among its features of novelty being an instalment payment plan for the retail buyer which eliminates the granting of any credit.

Attracted by an offer which says that "$350 buys this $600 car," in connection with a handsome illustration of a smart looking two seated runabout, the inquirer writes to find out how the "Metz plan" makes the price possible, as he is invited to do by the advertisement. In reply he receives an elaborate typewritten document, bound in a blue paper cover and bearing white ribbons and a gold seal, the whole affair suggesting in appearance either a legal brief or an engineer's report crossed with a lady author's first manuscript. Pasted to some of the twelve long sheets, as interpolations in the text, are half-tone pictures of the car, of the Metz factory, a top view of the chassis, etc., all of which afford the advantages of catalog illustration without impairing the confidential and personal spirit of letter communication which is conveyed.

The plan, or such part of it as directly concerns the "prospect," is made clear by easy stages, starting with the explanation that the "Metz plan car is designed to meet the wants of a mass of people who long for an automobile but are unable or not inclined to invest the amount heretofore required to procure a serviceable vehicle." Convincing assurances are given as to the high quality of the car throughout, and the "plan" itself is given as the thing which makes the low price possible.

The striking and unique feature of the "plan" is then revealed. However much it may resemble in some respects the thriving business which was at one time conducted by various houses in supplying experimenters with frames, motors and whatever other parts they might order, it differs radically in that the customer enters upon an agreement for taking the whole machine in installments of regular and fixed order, from which he cannot deviate although he may take whatever time he pleases between installments. Thus he not only purchases, but receives his machine on the installment plan.

"By the Metz plan," the document goes on, "you become partly the producer of your own car. Every piece of the machine, down to the smallest nut and washer, is furnished from the factory, and the different parts, such as wheels, motor, transmission, etc., are assembled at the factory. These parts are shipped to you in groups, from time to time, and you set up the machine, putting it together.

"You may begin to obtain a Metz plan car," says the document, a little further on, "if you have only money enough to buy the first group of parts, and you may secure parts as fast as you require them, or as slowly as you wish. By paying for each group of parts as received, you do not feel the great expense of paying for a car as a whole."

After a very complete presentation of the economies that are effected in production by having the customers themselves assemble and paint their machines, calculated to show that the low price is only possible by this plan, the car itself is taken up exhaustively and practically every inquiry that could suggest itself in connection with it is answered, while the most minute detail specifications of its construction are supplied.

"Send us $25," the customer is advised, "and we will enter your order and ship to you by express or freight, as you desire, the first group of parts, consisting of frame reaches, cross members, motor hangers and bolts, together with the necessary tools for putting these parts together. Explicit instructions and illustrations are included so that you will not have the slightest trouble in putting the parts together.

"The second group of parts consists of springs and axles. You may send for these whenever you are ready. The price on this group is $25 and full instructions and illustrations accompany them as before. So on down through the list.

"Remember, the motor, transmission, shafts, wheels, magneto, carburetter and all parts are assembled as units at the factory. You simply put them in place in the same manner as you would a wheel on your buggy or handle bar on your bicycle. There are no holes to drill, no filing or fitting. You simply put things together. You continue to send for each new group of parts as rapidly as you get the previous one built up. You may wait six months if you wish, drop out altogether, or transfer your interest to someone else, and we will continue to supply the additional parts as you may direct."

Fourteen groups of parts, at $25 per group complete the machine, and fittingly enough the last item in the last group is the starting handle. The details of the groups are given as follows: First group, frame reaches, cross members bolts, nuts and all tools; second group, springs and axles; third group, hood, dash and front radiator screen; fourth group, body, floor and dash enclosure; fifth group, seat and chest in rear; sixth group, control levers, fenders, running boards, paint, finishing materials and brushes; seventh group, hubs and wheels; eighth group, tires; ninth group, countershaft, friction disc, sprockets, chains and bearings; tenth group, propeller shaft, friction plate, bracket, bearings and fly wheel; eleventh group, wheel steering gear and connections; twelfth group, motor; thirteenth group, magneto, gear cover and timing gears; fourteenth group, tank, carburetter, muffler, pipe connections, lamps, horn and starting handle.

"These groups," it is explained, "cannot be purchased except in regular rotation at the rate of $25 for each group. If you wish us to assemble the car complete, we can arrange to do this. The price of the car complete and assembled is $600.

So thoroughly has every detail of the plan been provided for that even the question of a suitable place for assembling the car is given attention. It is claimed that any room of ordinary dimension—9 feet by 12 feet for example—would be sufficient, and in case no suitable room is available, a portable garage, complete and ready to set up, will be furnished for $25, or the materials and plans for such a garage will be supplied for $17.50. In large cities, where no room is available and no suitable place for setting up a small garage can be secured, the factory proposes to arrange for a large room where a number of purchasers may operate.

To give a dealer a chance at the business, certain concessions are made in case he will undertake to supply assembling space of this character, where customers may either assemble for themselves or where he may do the work for them, charging them accordingly. It is also pointed out that there would be a market for the complete cars assembled by the dealer himself for purposes of retail sale.

The complete car is rated at 10 horsepower, having a two cylinder, air cooled motor, the cylinders being opposed and offset, with 3¼-inch bore and stroke. The transmission is a simple friction drive from a composition plate at the rear end of the propeller shaft to a fiber sliding ring on the counter shaft, the latter having a differential, and driving with sprockets and roller chains to the rear wheels. For ignition, the Bosch magneto high tension system is used. The frame is of pressed steel, U section, for the sides and has tubular cross members, while the body is a skeleton covered with aluminum, with double bucket, upholstered seats. Full elliptic springs are supplied front and back, and wire wheels, fitted with 28x2½ detachable clincher tires, are the regular equipment, although artillery wheels are supplied as an option at extra cost. The total weight is given at 450 pounds, and the speed as from 2 to 40 miles per hour.

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OSCILLATING CYLINDER MOTOR

Adaptation of the Principle in a British Design—General Specifications and Details of Its Operation.

For many years in the steam engineering field the possibilities of the oscillating type of engine, or that in which the usual connecting rod was dispensed with in favor of the solid connecting rod coupled directly to the crank shaft, were considered very strong. Many different types of oscillating engine were built and a few isolated examples of the practice still are extant. Hitherto in the gas engine field, little or nothing has been done with this class of motor, but a precedent has been established in this respect in a recent British development known as the M. D. S. engine, in which the oscillating cylinder principle is adopted with such modifications as are made necessary by the use of the four-stroke cycle principle of action.

In any oscillating engine, the cylinder, instead of being positively mounted on the base or crank case, is given a trunnion mounting, as a result of which it swings back and forth to accommodate the transverse "throw" of the crank, this motion of the cylinder giving to the engine its name. In consequence of this formation, the wrist pin construction for piston or cross head is eliminated and a rigid connecting rod and piston combined is secured, in addition to which, the overall length of the engine is considerably reduced so that the resulting motor is very compact. With steam engines of this stamp it was customary so to arrange the trunnions, through which the live and exhaust steam were passed, that the rocking of the cylinder caused the steam ports to be opened and closed, all external valve mechanism thus being done away with, and the machine being rendered very simple in this way. In the gasolene engine under consideration no such simplicity is possible, the distribution of the gases, instead, being effected by the aid of a rotary movement of the piston itself, through which suitable ports are cut.

The accompanying illustrations show the general arrangement of the engine and its mounting, and also a development or flat plan of the piston and its ports, showing their construction and arrangement. The absence of valves of the poppet type, it will be observed, places the motor in the same general class with the Knight engine. At the same time, the manner in which the details have been worked out, as well as the general plan of the engine as a whole are so radically different from that of the new Daimler product that the two are hardly to be considered as in the same class save in the one respect that the distribution in both cases is controlled by means of sliding sleeves.

The cylinder is water jacketed in the usual manner and has the intake and exhaust ports formed directly in it. The most striking departure from usual practice is in the construction of the piston, which has a long sleeve-like extension running well up to the head of the motor, and passing between the cylinder wall and a cartridge-like extension of the head, which thus provides a deep groove to take care of the over-travel. In this extension of the piston, the valve ports are formed. In the first of the two accompanying illustrations the sleeve is indicated at C, and the cylinder heat at B. The lower end of the head, which is dome-shaped, is protected from gas leakage by means of the three packing rings, D. The top of the piston is covered by the disc valve, E, which is carried on a central stem, F, which, in turn, is carried down a central hollow in the center column, M, and attached to the crank pin bearing or "big end" at N.

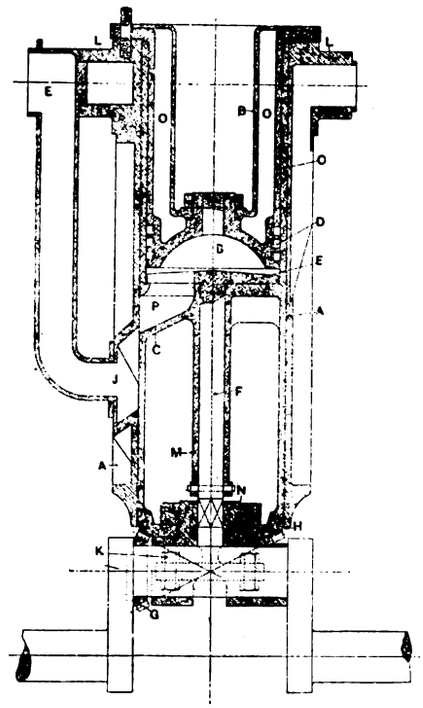


Fig. 1

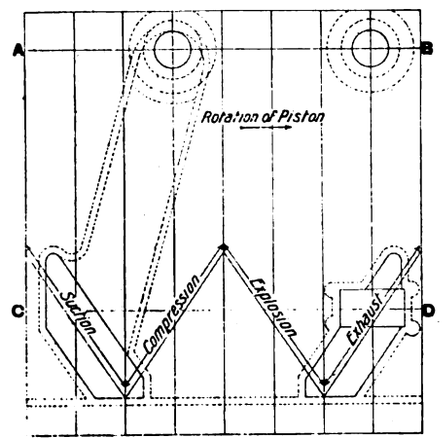


Fig. 2

A bevel gear, H, is attached to the open or lower end of the piston, which meshes with the corresponding bevel, G, attached to the crank web. The relation between the diameters of the two is such that the speed ratio is two to one, the distribution effected by the rotation of the piston thus brought about, being the same as with the two-to-one gearing of the ordinary type of motor. As the crank shaft rotates, the cylinder rotates on the trunnions, L-L, the piston being compelled to turn in consequence.

In completing the cycle, the piston first draws in its charge on the down stroke, through a port, not shown in the illustration, at the same time rotating one quarter of a turn about its axis. This movement is sufficient to close the intake port, by the movement of the piston under the stationary disc, so that the succeeding up-stroke effects compression in the usual manner. During this, and the firing stroke which follows, the rotation of the piston continues, but neither of the ports is opened until the fourth stroke, when release occurs and the exhaust takes place, through the exhaust port, J.

Among the advantages claimed for this system are that as the piston oscillates, the line of piston pressure is always perpendicular to the crank, so that there is an absolute elimination of wall thrusts; the absence of separate valves and actuating mechanism is held to conduce to reliability in action; the piston port, P, being common to both exhaust and inlet functions, it always is kept reasonably cool; while in the matter of lubrication, the combined effects of its rotation and the absence of wall thrust are held to cause it practically to float in oil. In regard to the valve motion, it is further pointed out that although mechanically operated, the valves are not compelled to open against pressure, as a result of which the amount of "engine work" or energy absorbed internally, is considerably reduced.

The M. D. S. engine, is produced by the Mechanical Development Syndicate of London, under whose hands it has been perfected. Its structure is sufficiently radical to warrant it serious study and its mechanism is ingenious enough to be creditable to its makers; at the same time, the practical disappearance of the oscillating engine in steam practice, upon which gas engineering depends so strongly, would not seem to argue any too favorably for its success in practical ways.

Use of Funnel in Draining Radiator.

Some radiator drain pipes are placed directly over the front axle in such a position that when opened the water will strike the axle and splash around wetting things generally. If a funnel be used to direct the water into the pail the shower bath effect will be avoided and the floor kept free from water.

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MAKING APPRENTICESHIP BROADER

System of Scholastic and Manual Training on Trial at the Locomobile Factory—Its Satisfactory Operation.

Frequent complaint has been made that the methods of instructing learners in the more common trades are not as thorough as they used to be on the one hand; and on the other, that it is far more difficult than it used to be to secure good material from which to develop an intelligent and skilful class of workmen. For this condition of things the decadence of the old-time apprenticeship system is responsible in part, and in part, inevitable conditions in the modern shop where rigid economy forbids in many instances, the generous shifting about of the learner from job to job which used to result in a breadth of education which now is practically impossible. In many shops in fact, the training of mechanics has declined into a system of drilling operatives fitted for only a very limited class of labor.

Systems galore have been devised to overcome this difficulty, but perhaps none is more promising in a general way that that which has lately been put into operation in Bridgeport, Conn., where apprentices from the plant of the Locomobile Co. of America and a number of other shops are regularly "sent to school" during certain stated periods of every week for the express purpose of broadening their education in subjects related to, if not directly in line with those which they are acquiring in the regular shop instruction. The benefit thus secured is two-fold. It tends to increase the interest and fidelity of the pupil, and it also serves to attract to the work a better class of beginners than would be drawn to it were the training less diversified.

In the old days of the hard and fast apprenticeship system a boy's choice lay between becoming an artisan or a scholar. There was no half-way between. In order to become master of any of the arts and trades a youth must serve from four to seven years apprenticeship, and the duties imposed upon him during that period were such as to preclude the possibility of his having either time or energy left to persue the less thorny paths of learning after his daily tasks were done. More recently the articling of boys in the various trades has languished through the combined influence of the attraction presented by the lighter and more "genteel" clerical positions which always are available and the impression that the learning of a trade ties the workman down to a very narrow sphere of life. The value of the indenture has become much impaired at least so far as the giving of thorough, broad and practical instruction to the apprentice is concerned, through a combination of circumstances depending mainly on the tendency to specialization.


The Locomobile Company of America

By this DIPLOMA Declares

That _____ has completed the Prescribed Course of Three Years of Apprenticeship in their factory at Bridgeport, Connecticut, at the

MACHINISTS' ART AND TRADE

and is entitled to recognition as a Graduate Apprentice.

IN WITNESS WHEREOF, we hereunto set our hand and the seal of

The Locomobile Co. of America

This _____ day of _____ 19__

By _____ Superintendent

In the place of the boy of old who was brought up in his chosen calling has come the graduate of the trade and industrial school who has brought with his superior mental training and general knowledge of the craft less of mechanical proficiency and withal an inaptitude at learning the finer details of handiwork in many instances, and a desire to forge ahead which unfitted him for routine work of the better sort. On this account it often has been difficult for the manufacturer to obtain a good class of employes among the younger element who were fitted to develop into permanent and trustworthy operatives.

One solution of this difficulty and one of the more promising yet advanced is that of the combined trade and general education such as may be obtained where suitable night-schooling is provided for the working classes. But even this fails except where a proper spirit of progressiveness and ambition prevails in sufficient degree to induce those who most require it to attend the night classes.

An even better system is that in which the scholastic and manual training is carried on simultaneously; where apprentices are directly supplied with the means of improving their minds while learning their trades and without necessarily prolonging the working day to the point of exhausting the pupil, either mentally or physically.

Such a system is that in force in Bridgeport, where practically all the factories which maintain apprentices are under agreement with the industrial department of the local Young Men's Christian Association to maintain special classes for their instruction. By contributing regularly to the support of the institution in proportion to the amount of instruction received the latter is put on a self-supporting basis, while the employers, in turn, are able to figure a profit on the transaction by offering to candidates a broader training both in shop instruction and general education than would obtain under the old order of things.

Particular interest is found in the system because of its adoption by the Locomobile Co., which has just graduated its first apprentice under the new system. The plan is applied to both machinist's and pattern-maker's apprentices. All regular three years apprentices in these trades "go to school" two hours a day, some in the morning and some in the afternoon, four days a week. But by a suitable arrangement of hours and a "staggering" of the days, it is made possible for this to go on without interference with the regular work of the shops and without seriously breaking into the routine of shop instruction which, of course, is the most important part of the educational process from the employers' standpoint.

The school tuition includes courses in simple arithmetic, algebra, mechanical drawing in its various branches, the higher classes of geometry. Grammar and kindred studies of a general nature also are taught. Each graduate apprentice receives two diplomas, one of card size, which is given him in a leather pocketbook, and the other of large size, suitable for framing. The latter is reproduced herewith. The school has been in operation some four months and promises to be a success.

Belgium's Foreign Trade Increases.

The value of the foreign motor cars and parts imported into Belgium during last year totalled $724,520, as against $874,740 in 1907. The exports, on the other hand, jumped from $2,198,280 in 1907, to $2,246,860 for last year.

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WHEEL-TAX AGAIN DECLARED LEGAL

Illinois Supreme Court Upholds Chicago's Shake-Down by Majority Decision—Fight Goes to Federal Court.

Again the automobilists of Chicago have lost in their fight against the right of the city to impose extra taxation upon them under the provisions of the so-called wheel-tax ordinance which has been in effect since May, 1908. The city already has derived from this source a total of $700,000, and the money has been expended in improvement of the streets. The question of the legality of the ordinance has been carried from court to court by the Chicago Motor Club and the Chicago Automobile Trade Association, finally reaching the Supreme Court of the State. In these latest proceedings William H. Arthur, counsel for the two organizations named, based the appeal against the decisions of the lower courts on the ground that the wheel tax ordinance clashed with the State motor vehicle bill. Another point he raised was discrimination, in that while a tax was exacted from two, three and four passenger automobiles, motor cars with seats for only one person, motorcycles, tricycles and bicycles were not included.

Upon the first point specified Mr. Arthur was sustained by Chief Justice Cartwright, who, with Justice Dunne, dissented from the decision of the five other justices, who sustained the legality of the ordinance. The Chief Justice said in his dissenting opinion that "the act and ordinance are in irreconcilable conflict, which is not obviated or removed by regarding the act as a regulation under the police power and the ordinance as an exercise of the taxing power. The validity of the act is not questioned and being a vital act relating to motor vehicles it has not been repealed by the general act amending the city and village act. The general act gives cities and villages power to direct, license and control wagons and vehicles conveying loads and says nothing about taxing vehicles. But, regarded in any light, the ordinance conflicts with the motor vehicle act."

Having fought the matter to the last ditch, as far as the Illinois courts are concerned, the motorists of Chicago were disposed to accept the decision, rendered some two weeks ago, as a finality. There remained to them, however, the privilege of appeal to the United States Supreme Court. This step was decided upon at a joint meeting of the Chicago Motor Club and the Chicago Automobile Trade Association, held on the evening of February 26th. At that meeting it was voted to appoint a committee to get in touch with all owners of motor cars in the State and raise funds to carry the case to the United States Supreme Court. It will not be difficult to present to automobilists in other portions of the State some urgent arguments why it will be wise to make common cause in knocking out the Chicago ordinance. In fact, before this joint meeting was held the city council of Peoria, undoubtedly inspired by the Supreme Court's decision, permitted the introduction of a vehicle ordinance providing for wheel tax. No amounts are named in the measure. Various vehicles are divided into classes as follows: One-horse, two-horse, three-horse, four-horse, six-horse or more, automobiles for two, automobiles for more than two, other automobiles, trucks, coaches, omnibuses. Blanks are left for inserting the amount to be taxed. This is one of the measures proposed in meeting a shortage in municipal revenue which the city has been experiencing. It was referred to the police and judiciary committee. The action of that committee will undoubtedly be influenced to some degree by the consideration, "we need the money."

Sheriff to Motor on Midnight Raids.

Around the county jail there is generally an air of subdued excitement once in a while, when, as evening approaches, the sheriff and several of his picked assistants prepare for a night journey out into the dark wilds of the country. Sometimes the sheriff takes a buggy, sometimes a trolley car, and occasionally a jerkwater way train. Only too often he comes back with his shoes loaded with mud, but his hands empty of prisoners, because somebody in touch with the sheriff's office affairs has "tipped off" the cock-fight promoters by means of a speedily dispatched messenger. Sheriff Jerge, of Buffalo, N. Y., has decided that a motor car is a necessary part of the equipment of his department to stamp out cock-fighting, and is arranging to use a machine for such expeditions in the future. "There will be no more fruitless cross-country walks by moonlight," he declares, "as we shall hereafter go out for business with the complete outfit."

Heavy Cop's Hurry Ride Costly.

Being the second largest policeman in Seattle, Wash., it is naturally borne in upon Patrolman I. Bjornson that he is probably pretty heavy, as well, but he finds it hard to believe that a short, three-block ride which he took in an automobile delivery wagon of the Golden West Baking Co. is the sole cause of the machine breaking an axle, for which he is now asked to pay. The patrolman was sent from the station house on the run, it being reported that a man had fallen into the bay. The delivery automobile was going in the direction of the scene, and the officers asked for a ride. Within a short distance the axle broke, and he had to run the rest of the way on foot. The machine was in the garage six days, and the bills piled up to $110.30. The baking company sent the bill to Bjornson and he has turned it over to the city of Seattle for the law department to handle.

ENFORCES LAW AND RUINS HIMSELF

Squire Van Ness Finds He Cannot Apply Fines to Paying Police—Legislature is Asked to Reimburse Him.

"This business of speeding on the public roads is going to be stopped if it costs me all I have." Such, in effect, was the declaration of Jesse P. Van Ness, the justice of the peace at East Greenbush, N. Y., when he set himself to the task of holding motorists down to reasonable speed on the portion of the Boston and Albany turnpike passing through that town. He accomplished his purpose and it cost him the limit. Now the legislature is asked to relieve him of the burden his efficient execution of the law has imposed upon him. The road up there is fine for "opening up" and it was only the sanest of sane drivers who could resist the temptation to "let 'er out another notch." But Squire Van Ness was on his job. He spent his efforts well and truly, and in a short time the turnpike became one of the most reputable in Rensselaer county.

In constructing his system he engaged help. He had to have extra men. He couldn't do it alone. These highway protectors had to be paid. They worked night as well as day, and were willing to get up at any hour. They caught the violators, and when the occupants of the cars were apprehended they would be arraigned before the justice of the peace and he would name the penalty. He was severe and the punishment for a second offense was a big help to the system. Anyway, he collected in fines something more than $900, and he expended from this fund $716.87 in payment of his impromptu police force. There was a balance on hand and this had to go with the rest.

But Squire Van Ness had no right thus to dispose of the money. This was made plain to him in due course of time and he had to mortgage his home in order to make good to the town authorities the amount he unwittingly had misapplied, and which the town authorities promptly appropriated to other purposes. Now, however, Senator Victor M. Allen, of Rensselaer, has introduced in the senate a bill to reimburse him.

Spare Tires Serve as Bail.

Tires as bail represents the accommodating spirit in which the desk officers of the New York police force try to make the path of legal procedure smooth for motorists after the latter have been arrested on charges of speeding. Harold Dannot, a chauffeur, was recently taken to the Bergen street station for violation of the speed law, and as he had no money the lieutenant accepted two spare "shoes" or casings, valued at $50 each, as security for letting him go.

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CLUB AMALGAMATION PLAN HALTS

Bay State Automobile Association and Boston Motor Club Fail to Agree—Latter to Remain in the Field.

Negotiations have been in progress for some time past with the aim to bring about an amalgamation of the Bay State Automobile Association and the newly organized Boston Motor Club, which is largely composed of former Bay State members. The proposed coalition contemplated the foundation of a new and third body to absorb both the Bay State A. A. and the Boston M. C., the name of which would be decided by a joint committee chosen from both clubs; that the dues of the new organization should be fixed by the members of the new club at their first meeting, and that if they are less than the present dues of the Bay State A. A. rebates would be granted to the members thereof. It was further proposed that the Bay State A. A. turn over its present quarters, assets and equipment to the new organization.

The proposed agreement was ratified by the Boston Motor Club, and was placed before the Bay State A. A. at a special meeting, held Tuesday evening, February 23, to consider the matter. Many members of the older body expressed the opinion that it had made all the concessions that could be made, and objected to giving up their organization and possibly their name. At this meeting another committee was appointed, but it was authorized only to invite former members of the Bay State to rejoin the older club, with the understanding that the Bay State eventually would take in the members of the Boston Motor Club who were not previously associated with the Bay State. This plan was put before the committee of the Boston Motor Club, which refused to consider it, with the result that unless further steps are taken by the Bay State the Boston Motor Club will become an actuality.

Long Island Club Leases Larger House.

As a result of their negotiations, the Board of Governors of the Long Island Automobile Club, of Brooklyn, the club has leased the premises at 918-922 Union street, facing Prospect Park Plaza, for their new quarters, made necessary by the outgrowth of the present quarters.

The building is 50x95, four stories high, with basement; the latter has a concrete floor, is of the same area as the other floors and will provide accommodation for 150 cars. An elevator, large enough to accommodate any size car, is provided. The top floor of the building will be used for a repair shop, and is fully equipped with machinery and tools to meet all requirements. The club rooms will be located on the second floor commanding an excellent view of the Plaza, and will be put in condition for occupancy very shortly. Applications for space in the new garage are now being received.

New Haven Club Spoils a Graft.

Because of a bad stretch of road near Woodmont, Conn., in which many cars have become mired, a farmer in the vicinity has been resorting to the old method of getting rich quick by towing the cars to firm ground. As his income was in the neighborhood of $100 a month from this source, it is safe to say that he does not harbor any brotherly love for the New Haven Automobile Club, which thought it high time such extortion should cease and took steps accordingly. Large warning signs have been erected at either end of the bad stretch, advising motorists that the road ahead is impassable and pointing out another route which will avoid the quagmire without loss of additional time.

Waterbury Organizes a New Club.

In response to an invitation sent out by A. C. Judd, who takes a pronounced interest in automobile matters, over fifty of the representative business and professional men of Waterbury, Conn., were convened in Hotel Elton, on Saturday evening last, 20th inst. The outcome of the meeting was the founding of the Automobile Club of Waterbury. Formal organization resulted in the election of these officers: J. Richard Smith, president; John B. Bunall, vice-president; Almon C. Judd, secretary; Henry A. Hoadley, treasurer. Board of governors, until annual meeting, Edmund J. Daly and William H. White; board of governors to serve until 1910, Louis E. Fitzsimmons, Edward M. Beach and John P. Kellogg.

Virginia Association Re-elects Officers.

At the annual meeting of the Virginia Automobile Association at Richmond last week, the old officers were re-elected as follows: J. E. Willard, president; Abbott Morris, first vice-president; J. H. Marsteller, second vice-president; O. M. Alfriend, secretary-treasurer. The Automobile Clubs of Lynchburg and Staunton were admitted to membership and a committee to attend the national good roads convention was appointed.

Showing the Way to Muskegon.

As the first step in its campaign the newly organized Muskegon (Mich.) Automobile Club will erect signs at all crossroads within a radius of one hundred miles. The signs will read "This way to Muskegon," and care will be taken to see that they point in the right direction.

Signposts for Transcontinental Tourists.

The Automobile Club of America will lay out a transcontinental route and erect signposts along the way during the coming summer for the benefit of coast to coast tourists.

RIVAL CLUBS FOR PHILADELPHIA

Quaker City Seceders Join Century Club—The Old Time Cycling Body Becomes an Automobiling Organization.

Following close on the heels of the annual meeting at which new officers were elected, and where symptoms of discord were apparent, a large defection has occurred in the ranks of the Quaker City Motor Club of Philadelphia. The seceders have joined the Century Club, one of the most famous cycling bodies in the country in the palmy days of the wheel, but of late years, more prominent in social affairs. By a unanimous vote, the club placed itself on record to change its name to the Century Automobile Club, admit a large number of applicants and promote the sport of automobiling by contests and otherwise.

During its 24 years of existence, the Century Wheelmen, and later the Century Club, has been a commanding figure in everything that pertained to the cycling or club world. Its annual runs and race meets were famous throughout the land, and attracted riders who were famous on both continents.

It owns a $40,000 club house on Philadelphia's leading thoroughfare, which affords an alluring rendezvous for motorists.

L. D. Berger, who was recently elected president of the Quaker City club issued a statement to the effect that the reported dissatisfaction and withdrawal of a large number of members from the club was an exaggeration, and while admitting that in a few instances members of the Quaker City Motor Club have become affiliated with the Century Automobile Club, the policy of the Quaker City club would remain unchanged.

Columbus Plans Sign Raising Day.

Some time ago the Columbus, (O.) Automobile Club decided to institute a signboard campaign and ordered one hundred galvanized iron signs with which to begin the work. The signs have now arrived and as soon as the roads are in good shape for motoring a "sign raising" day will be declared. Members and machines will be impressed into service to carry on the work. The signs bear the name of the Columbus Automobile Club and the number of miles from Columbus to the next largest city.

Marking Roads Centering at Chicago.

The Chicago Motor Club has taken up the work of erecting signposts on the prominent routes leading out of Chicago, within a radius of one hundred miles. Three of the routes which are most frequently used by automobilists—the Milwaukee, South Bend and Lake Geneva roads—will be placarded with substantial iron signboards. A large fund has been raised to carry on the work, and the signs have been ordered.

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CONDEMN TAXATION OF TOURISTS

Associated Automobile Clubs of New Jersey Ask for Courtesy to Non-Residents —They Approve the Colgate Bill.

That the taxation of non-resident motorists for occasional use of the roads of New Jersey is "small, narrow and restrictive," was the unanimous opinion of members of the Associated Automobile Clubs, as expressed in a resolution adopted by them at a meeting held in the Essex Troop Armory, Newark, on Thursday evening, 25th ult. The meeting was presided over by W. Clive Crosby, of East Orange, president of the Associated Clubs, and the organizations represented were the New Jersey Automobile and Motor Club, the Middlesex Automobile Club, of New Brunswick, the Automobile Club of Hudson County, the North Jersey Automobile Club, and the Mercer County Automobile Club. The resolution adopted reads as follows:

Resolved, That the amendments as contained in Assembly bill No. 119, amending the automobile laws, is in accord with the ideas of the Associated Automobile Clubs of New Jersey and should be enacted into law with these changes: No charge of $1 should be made for the license to be granted the non-resident on the grounds that it is unnecessary, does not add to the safety of the State nor materially add to its income, and that a policy exacting $1 from a non-resident is small, narrow and restrictive. The State should provide, free of cost, the license or certificate proposed to be required by the State of non-residents.

The bill referred to is known as the "Colgate automobile bill," a summary of which has been presented in these columns, which is much more liberal in its provisions than the existing law. It has been reported favorably by the highway committee.

Minnesota Club that Does Things.

Evidences of its aggressive policy were manifested at a recent annual meeting of the Rochester (Minn.) Automobile Club when it was unanimously voted to join the State association. The club rescinded its former action against the Gates automobile bill and gave its indorsement to the measure. As an indication of its efforts for better roads the club maintains eight log drags at various points in the country and they have proven of great value in aiding to maintain the highways.

Detroit Plans for a Working Club.

Because of the fact that the Detroit (Mich.) Automobile Club is a social organization of an exclusive nature and does not take an active part in motoring affairs, plans are on foot looking to the formation of a new automobile club. The need of a downtown club that would bring motorists together and play a prominent part in the enactment of equitable laws and assert itself in the good roads movement, is admitted on all sides. The movement has the hearty support of the Detroit Automobile Club and the D. A. D. A., as the dealers' association is known, each of which has a sphere of its own with which the new body will not conflict. It is proposed to admit to membership every motor car owner in Wayne County, and to have an associate membership for owners residing outside the county. As there are over five thousand owners in Wayne county it is confidently expected that the new club will take the field with a large initial membership.

Washington's Subway to Have Electrics.

Comparatively few visitors to Washington, the National Capital, know that from the new office buildings of the house of representatives and the senate, respectively, to the capitol building, there is a big subway, having sidewalks and a road for vehicles. So far all the traffic through the subway system has been only foot passengers and rubber tired push carts, but arrangements are being made for the introduction of electric automobiles. It is planned to use vehicles of special types, suitable for the service, one style for passengers and another for the transporting of books, records and merchandise.

Chief Kohler Wants Motoring Police.

Radical changes in police methods, made possible by the automobile, are proposed by Fred Kohler, chief of police in Cleveland, O. "The day of patroling the city is past," he declares, in asking for 15 motor cars for his department. "You might as well send out fire engines to look for fires. I would abolish beats, put six or more policemen in each automobile and cover a huge territory, circling and bisecting it several times nightly and dropping off policemen where conditions seemed suspicious."

Hotel Men Encourage Automobiling.

Hotel men know which side their bread is buttered on and regard with distinct disfavor anything which is calculated to lessen the touring activities of motorists. Up in Maine, particularly, the automobilist who tours with his machine in summer is highly welcome, and at a recent meeting of the Maine Hotel Proprietors Association, held in Brunswick, that body adopted a resolution to encourage automobile visitors as much as possible and to work for state legislation favorable to the motoring interests.

Commits Murder to Become a Chauffeur.

So alluring are the advertisements of the automobile "schools," where chauffeuring and its allied arts are taught and from which the "graduates" emerge with hopes of fat salaries and easy berths, that Orville Foland, 19 years old, committed murder last week to get the necessary tuition money to put him through. He killed Jesse Haymaker in Hutchinson, Kan., on Wednesday, and got a life sentence on Friday.

MAKING WRECK TELL ITS STORY

How a Milwaukee Professor Estimated the Speed Which Caused a Disaster—Curious Technical Calculations.

Even when the victims have been killed outright and there are no witnesses to an accident, a great deal of accurate information as to the circumstances of an automobile disaster may in most cases be learned by technical calculation, according to Professor Warren S. Johnson, of Milwaukee, Wis. As an instance of the possibilities in this direction, he recently undertook to analyze an accident where a machine went through an open draw bridge, killing its occupants in the river below. After determining the distance from the abutment at which the car fell, and ascertaining that the vertical fall was 16 feet, he shows the method of arriving at the speed of the car.

"Bodies fall 16 feet the first second," he explains, "so that the machine was one second in striking the water after leaving the bridge. If the machine struck the water 26 feet from the abutment, it was running at 18 miles an hour when it left the roadway edge. The machine would not go very far forward after striking the water, owing to the resistance. If the machine was found nearer the shore than this, it was running at less than 18 miles per hour. If at the time the car went into the river, the brakes had been applied, it must have been going in excess of 18 miles an hour previously on the street. Had the brakes been applied 50 feet from the edge, at 18 miles an hour, they would have stopped the machine in time. At five miles an hour the car would have dropped practically directly downward."

Automobile Study for Farmer Students.

That agricultural colleges and schools are now giving courses in automobile matters to their students, as part of the curriculum which is to prepare them for their practical duties in life, constitutes a prophecy of how large the part of the motor car will be in farm life of the future and also indicates the present interest which the more enterprising farmers feel in the motor propelled vehicle. Short course students at the Iowa State College, at Des Moines, whose studies are chiefly on agricultural subjects, are to have an automobile lecturer from Thomas B. Jeffery & Co., of Kenosha, Wis., while the Michigan State Agricultural School, at Lansing, Mich., is to have a special course of instruction on automobile operation, maintenance and repair.

Kansas City Chauffeurs Get Together.

Emulating their brethren in other cities, the chauffeurs of Kansas City, Mo., have united, and the aggregation will be known as the Automobile Mechanics Association of Kansas City.

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The Week's Patents.

903,213. Fluid Gauge. Morris Martin, Boston, Mass. Filed April 13, 1907. Serial No. 368,050.

1. A fluid gauge comprising a head, a pivotally mounted magnet, a float, operative connections between said float and the magnet whereby the position of the magnet is determined by the fluid level, an indicating magnetic needle revoluble at times in unison with float induced movement of said magnet, means to sustain the needle in the head, and means rendered operative at will to temporarily lock the needle and restrain it from revoluble movement, the magnet remaining free at all times to change its position in accordance with variations in the fluid level.

903,447. Vehicle Axle. Hazel B. Bush, Littleton, Colo. Filed June 25, 1906. Serial No. 323,195.

1. In a vehicle, the combination with the body of the vehicle, of a main axle member and an auxiliary axle member, the body of the vehicle being supported upon the latter, and the two axle members being yieldingly connected whereby the auxiliary member has a limited degree of independent vertical movement, and the auxiliary axle construction also being provided with buffers located both above and below the main axle member.

903,608. Wheel for Motor Vehicles. John V. Pugh, Allesley, England. Filed Aug. 10, 1907. Serial No. 388,013.

1. A wheel for motor vehicles comprising a permanent hub part, a removable hub part enveloping said permanent hub part and carrying the spokes and felly, clutch members between and formed integral with said hubs, a holding nut and locking means carried by and inclosed within said nut.

903,657. Explosion Turbine. Carl Beckmann, New York, N. Y. Filed Dec. 19, 1905. Serial No. 292,519.

1. In an explosion turbine, in combination, a rotor, a stator having an explosion chamber with an inlet opening adjacent to said stator, said rotor having a carburetting chamber therein and having an inlet port in alignment with said opening, said stator having an explosion port leading from said chamber, said rotor having buckets to receive the force of the explosion and ignition devices carried by said rotor and aligning with said inlet port and said explosion port.

903,707. Manufacture of Rubber Tires. James T. Gordon, Indianapolis, Ind. Filed Feb. 12, 1908. Serial No. 415,471.

1. In a device of the character described, a casing adapted to completely envelop a tire, comprising opposed members semicircular in cross section assemblable to form a hollow annulus, and means for locking said members in the assembled relation, comprising a plurality of locking pins upon one edge of one member, and a corresponding plurality of keeper loops upon an edge of the opposed member.

903,708. Vehicle Wheel. George H. Groth, Cincinnati, Ohio, assignor of one-half to Auta N. Groth, Cincinnati, Ohio. Filed May 26, 1908. Serial No. 435,048.

1. The combination with a steering axle having a body, a steering knuckle and a spindle, of a vehicle wheel having a hub mounted on said spindle and independent of said steering knuckle, a rim disposed in a plane including the pivot of the steering knuckle, and a plurality of separate spokes connecting said hub and rim and each bent to form a compound curve.

903,714. Pneumatic Tire Casing. Charles G. Hawley and Erle K. Baker, Chicago, Ill. Filed April 11, 1908. Serial No. 426,495.

1. A tire casing provided with inwardly extending base portions which substantially meet at their inner edges and have endless metal rings embedded in their outer parts and co-operating fillers embedded in their inner parts, said rings being vertically elongated in cross section, as and for the purpose specified.

903,745. Tread for Pneumatic Tires. Charles G. Hawley and Erle K. Baker, Chicago, Ill. Filed April 11, 1908. Serial No. 426,496.

1. A pneumatic tire having a tread portion composed of alternated portions differing in elasticity, the portions of least elasticity being spaced about the tread at distances substantially corresponding to the length of the longitudinal line of normal contact between the tire tread and the road surface, substantially as described.

903,741. Valve Gear and Internal Combustion Engines. Herbert F. Lloyd, Sutton Coldfield, near Birmingham, England. Filed April 26, 1907. Serial No. 370,533.

1. In combination in an internal combustion engine of the constant pressure, an annular shell acting to produce an axially moving fluid annulus insulating the flame and hot gases from their inclosing walls; as and for the purposes set forth.

903,744. Frictional Power Transmission Device. Ebenezer H. Manning, Elkhart, Ind. Filed Oct. 18, 1907. Serial No. 398,111.

In a frictional power transmitting device the combination of a driving shaft carrying a friction disc, a pair of oppositely disposed rotary transmission discs for co-operation therewith, a transmission shaft supported in longitudinal alignment with the driving shaft, a sliding sleeve on said transmission shaft, and a frictional transmission wheel comprising a main disc provided with a hub extending beyond opposite sides thereof and integral with said sleeve, supplementary discs mounted upon the hub on opposite sides of said main disc, differential gearing connecting the discs, annular retaining rings having smooth surfaced openings receiving the ends of the sleeve, said rings being arranged to bear against the outer ends of the hub and outer faces of the supplementary discs to retain the latter in operative relation to the main disc, and fastenings passing transversely through said rings into the ends of the hub.

903,746. Pawl Transmission Gear for Taximeters. Charles Mascart, Paris, France. Filed Jan. 15, 1908. Serial No. 410,991.

1. Transmission means of the type set forth, comprising, in combination, a driving ratchet wheel and its shaft, a driven ratchet wheel and its shaft, said shaft being parallel, a member connecting said ratchet wheels to drive the latter from the former, said member comprising a lever pivoted midway of its length and provided with a tooth at one end to engage said driving ratchet wheel and with a pawl at its other end to engage said driven wheel, said tooth and said pawl engaging said wheels at corresponding sides thereof, and a spring for holding said lever with its toothed end in constant engagement with said driving ratchet wheel.

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Guaranteed as good as any in the world regardless of cost.

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¶This new building will give us 12,000 feet of floor space for the display of our wares.

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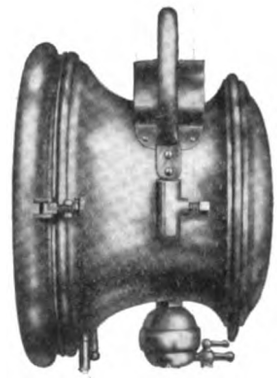
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Gas Headlights	from $4.50	to $62.50	each
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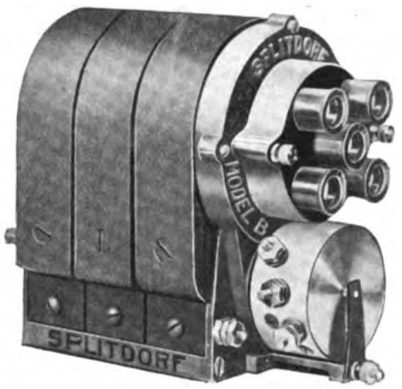
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At the Paris exhibition M. Pierre de Vasselot, the most eminent electrical engineer of Europe, said:

"After a thorough examination of the SPLITDORF Magneto, I am satisfied that it has no equal in design and efficiency among magnetos of the present day."

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NEW YORK
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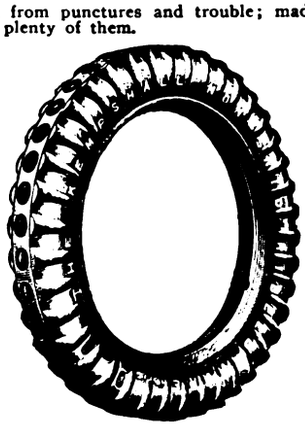
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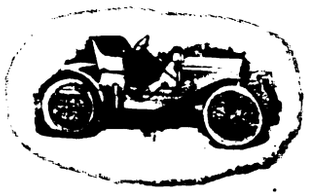
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$350 *buys this $600 Runabout*

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is sold on a new plan of partial payments. Let me explain by sending Book "B."

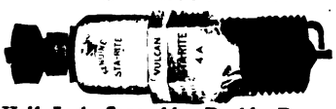
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$1,250 F. O. B. Detroit MAGNETO INCLUDED —Of Course.

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Half Inch Separable, Double Porcelain Plug. Price $1.25.

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The Best Tubes Ever Manufactured
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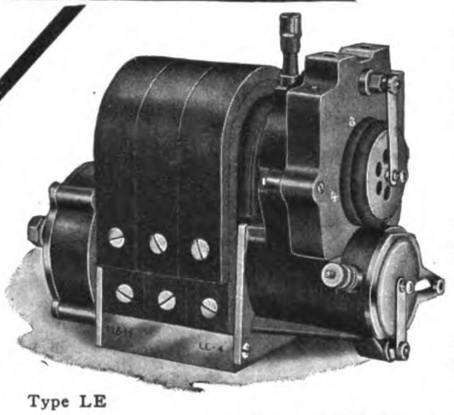
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Ease of Starting

is not the feature about which the magneto salesman is generally most anxious to talk. He knows that, despite his claims, it takes both knack and elbow grease to start a large engine under any but the most favorable conditions, if reliance is placed on the magneto for the spark.

There is only one exception to this rule. That exception is the

Unterberg & Helmle Self-Starting Magneto
(TYPE LE)



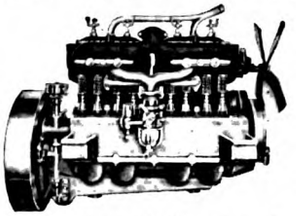
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This magneto gives its maximum spark on the slowest turn of the crank; and the spark is automatically retarded past the centre, making back kicks impossible.

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THE JACKSON
"No Sand Too Deep—No Hill Too Steep."
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Runabouts, Roadsters, Touring Cars,
18 H. P., 24 H. P., 30 H. P. and 36 H. P.
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¶ If every driver had to ride in his own tonneau, every car would be quickly equipped with Supplementary Spiral Springs. Owners are not intentionally selfish—many of them just thoughtless. Usually driving or sitting beside the driver, the riding qualities of the tonneau are to them practically unknown.

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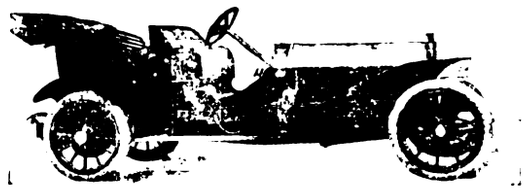
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Sixty-Five Miles an Hour Guaranteed.

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Its records and the opinions of its users speak more loudly than self praise. Agencies for 1909 are being closed rapidly. Much good territory still open.

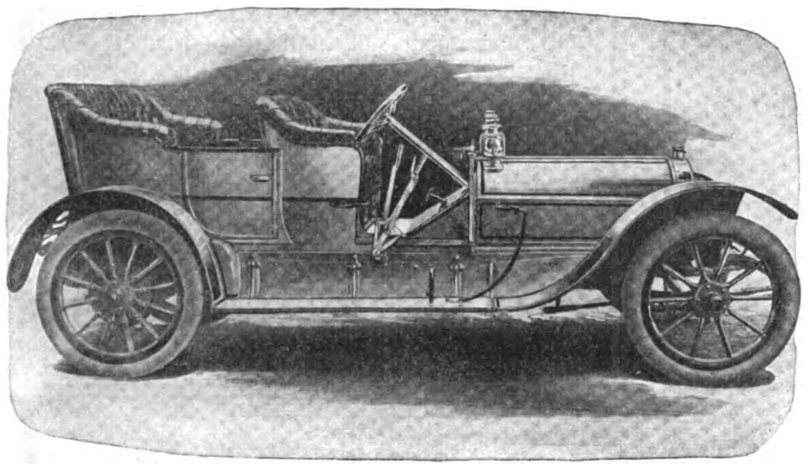
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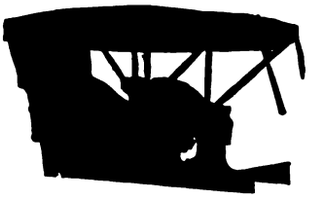
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This Tire Sells Because it Saves
Saving of time and saving of money explain the popularity of the Goodyear Detachable Auto Tire on Goodyear Universal Rim. On or off in less than 60 seconds with no tools except a wrench. This is the
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Most accurate speed indicator in the world.
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A Dependable Car.
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The Low Price of the High-Quality
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is made possible by the low cost of the simple Lambert friction transmission, which is more efficient than any type of complicated, expensive gear transmission.
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STEVENS-DURYEA

Six Cylinder Model Y Touring Car

6-40 Horsepower

UNIT POWER PLANT THREE POINT SUPPORT
PATENT MULTIPLE DISC CLUTCH

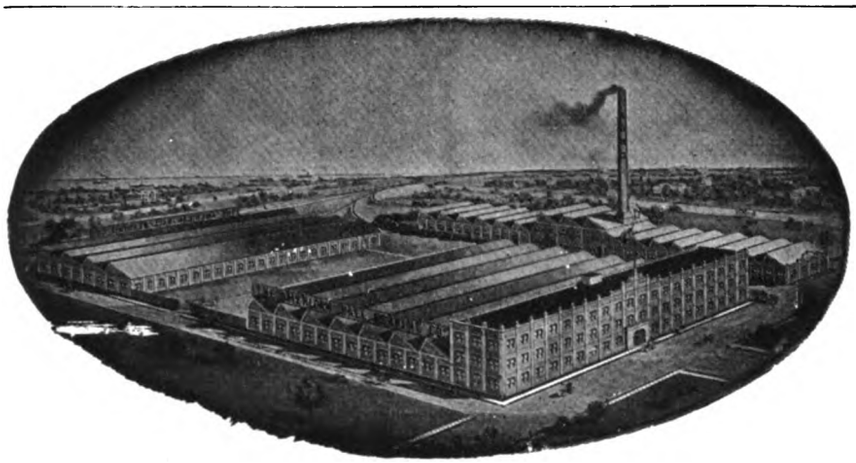
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Full 18-20-Horse Power

For Speed—Dependability—Economy Under all Conditions of Weather—Hills—Mud and Sand—With no Experience necessary YOU CAN BANK ON THIS CAR.



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1909 Style

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Absolutely Accurate

is the only speed indicator made on the Magnetic Induction principle. Because of the principle it accurately indicates every range of speed from zero to the maximum.

All other instruments are made on the centrifugal principle. They fail to indicate any speed whatever under 5 to 10 miles per hour.

The Auto-Meter is so durably made that practical tests have shown that it will endure a **MILLION MILES** of riding without perceptible wear, or departing from absolute accuracy more than **10 feet to the mile.**

We invite comparative tests. Before you decide on any Speed Indicator, put the Auto-Meter on one side of your dash and any other indicator at any price on the other. Then use your watch over a measured course. Keep the instrument which **tells** the **truth.** We know which it will be.

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Factory and Main Offices—391 Wheeler Ave., BELOIT, WISCONSIN

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Unless your car has perfect lubrication, your gasoline is used for friction instead of miles of speed. The use of vacuum MOBILOIL saves the wear of your car, the waste of gasoline, and most of the money that goes for repairs.

Vacuum MOBILOIL is made in six different grades to suit the lubrication of every automobile made. One of these grades is exactly adapted to the needs of *your* car. Its use is an investment that saves expense. It will end forever your lubrication troubles, and add to your pleasure and the life of your car.

Write for free booklet showing grade of MOBILOIL adapted to the use of every car. Gives track records to date, and money-saving motor hints.

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Heinze ignition apparatus on your 1909 car and get

THE BEST MADE.



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After 27,000 miles **continuous service in a Chalmers-Detroit "30," their engineering department** reports as **follows:**

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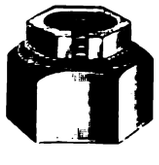
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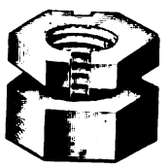
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Cramp — Metals



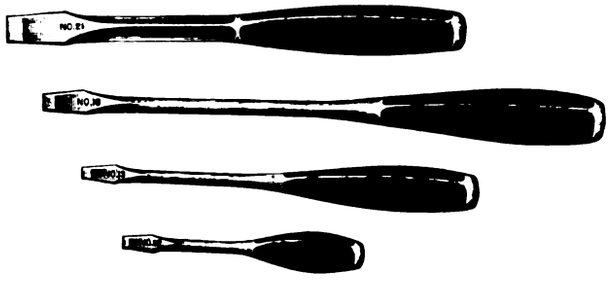
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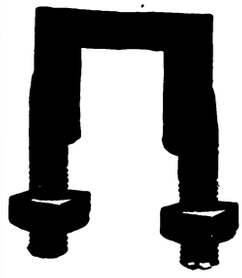
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The newest thing in screw drivers is the B. & S. "all steel." Complete in ONE PIECE, handle and all. Light and durable. The most sensible screw driver ever made. Don't fail to get circular.

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FORGINGS for the AUTOMOBILE TRADE



Satisfaction Guaranteed

Thousands of our **Spring Clips** are now in use, having been supplied to the leading automobile manufacturers.



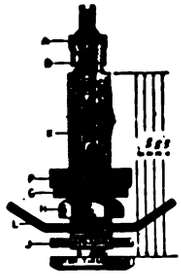
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Trade Mark Registered April 30, 1895



SIMPLE AND ABSOLUTELY AIR TIGHT

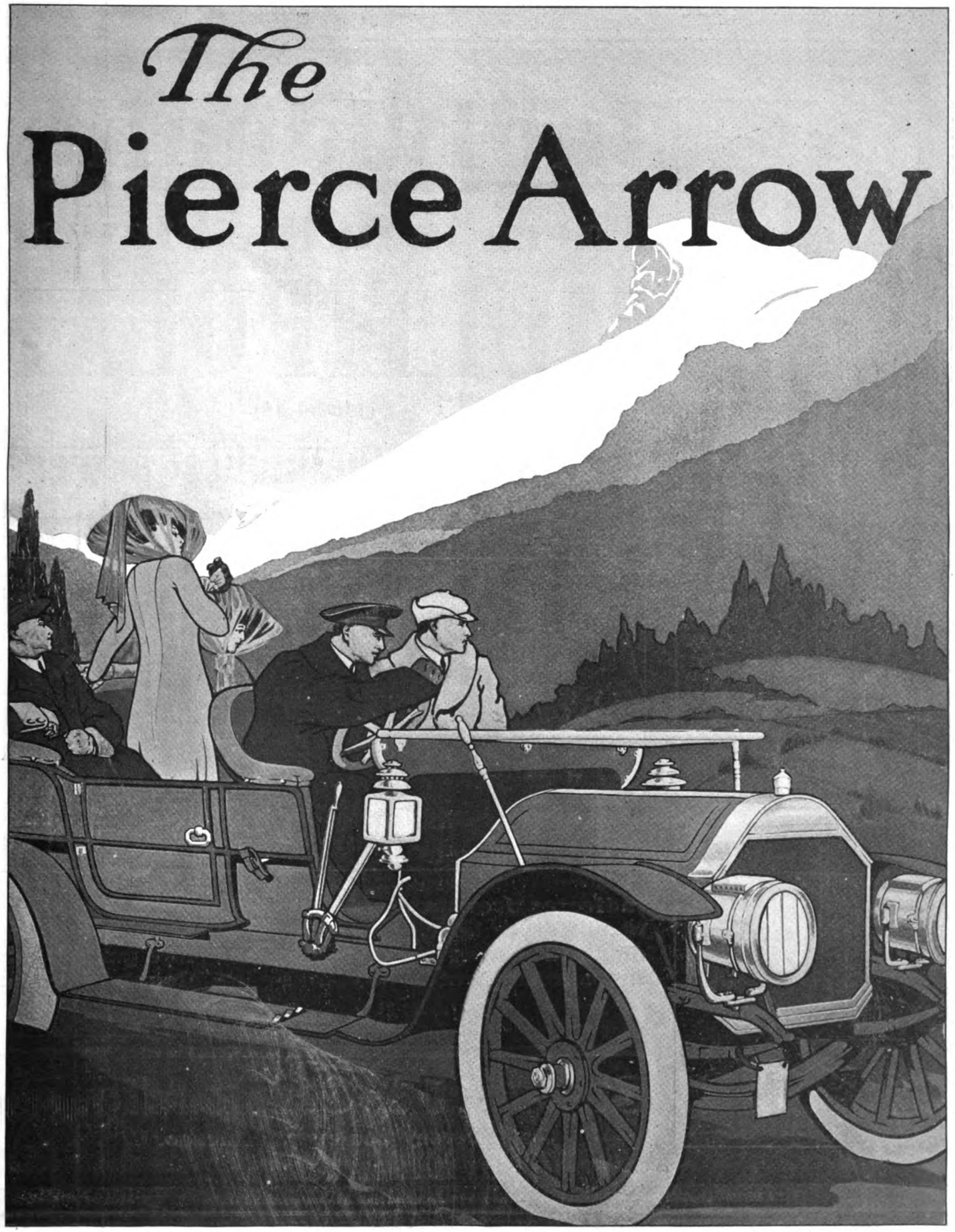
Schrader Motor Tire Valves, as shown in cut, are the regular equipment for G & J Motor Tires, Hartford Dunlop Detachable Tires, Fisk Detachable Motor Tires, and New Goodyear Detachable Motor Tires.

Our No. 777 Motor Tire Valve is the standard for 2½ inch and 3 inch Tires and our No. 725 Motor Tire Valve is the standard for tires larger than 3 inches.

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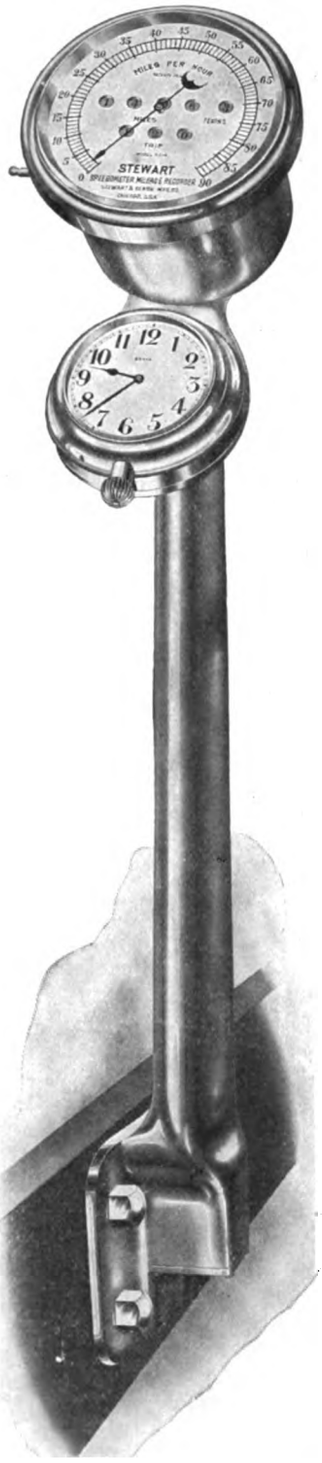
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THE PIERCE-ARROW MOTOR CAR COMPANY, (Members Association Licensed Automobile Manufacturers) **Buffalo, N. Y.**

Owners of THE GEORGE N. PIERCE COMPANY

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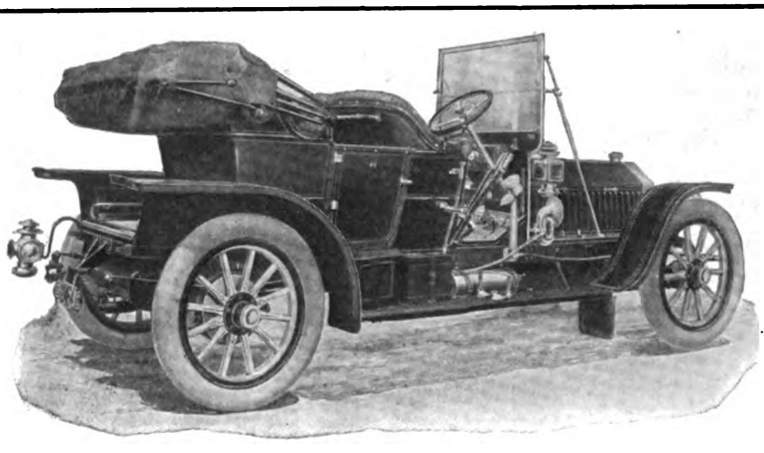
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There is in the Stewart

MULTIPOLAR

(Model 14)

Designed for the highest powered highest priced racing or touring car



Indicates from a single turn of the road wheel to 90 miles per hour. Indicating element mounted on a diamond bearing and carried in a sapphire guide. These instruments are costly, but marvelously accurate.

GET OUR LITERATURE

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The Fable of Bobby Think-not



LITTLE BOBBY THINK-NOT decided to buy an automobile. He was clever, Bobby was! He investigated — via the advertising. He learned such words as "Magneto," "Honeycomb Radiator," "Offset Cylinder," etc. Then he compared the specifications of various cars and bought the biggest bunch of specifications offered for the money. For the price of a good two-cylinder car he secured a four-cylinder car from a brand new company with a brand new name. The car, so he understood, had bearings like the Mergedes, springs like the Fliat and wheels like a Harrythaw. It would have cost $5,000 had it not been that this company was smarter than any of the old firms in the business, etc.



BOBBY THINK-NOT'S neighbor was a keen business man. He wanted an automobile, too, and he knew nothing about automobiles. He bought a HAYNES on the following reasoning: "That Haynes firm is the oldest in the business. They have survived 16 years — guess they'll last a while longer and back up the performance of my car. They charge a medium price — $3,000. That's above the bargain class and below the damn-the-cost class. The reputation of the car is fine, and reputation is what I rely on. That's the car for me."

Query—Which was best satisfied in the end? Which local agent built up the most substantial local good-will?

HAYNES AUTOMOBILE CO., Kokomo, Indiana

Oldest Automobile Manufacturers in America. Members A. L. A. M.

New York, 1715 Broadway Chicago, 1702 Michigan Ave.

FORTY-TWO HIGHEST AWARDS AND PERFECT SCORES

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Long Life is what every motorist wants in his car

If it is a

CORBIN

imported ball bearings, used wherever practical, assure him of this result. Ask owners of Corbin Cars how they stand up in every day use or write for our testimonial booklet.

THE CORBIN MOTOR VEHICLE CORPORATION, New Britain, Conn.

Members Association Licensed Automobile Manufacturers.

IT WILL PAY YOU TO INVESTIGATE

THE 1909 National

THE LINE IS BETTER AND MORE COMPLETE THAN EVER

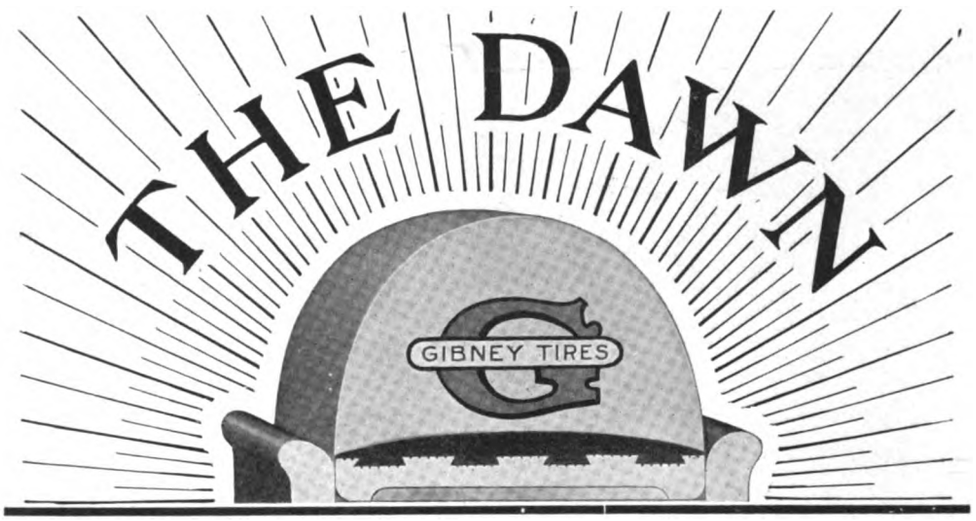
Model 9-35, 4-cyl., 4¾ x 4¾, 5-passenger Touring Car	$2,750
Model 9-40, 4-cyl., 5 x 5, 5-passenger Touring Car	$3,700
Model 9-50, 6-cyl., 4½ x 4¾, 7-passenger Touring Car	$4,200
Model 9-60, 6-cyl., 5 x 5, 7-passenger Touring Car	$5,000

Each National has the well-known National Ball-bearing Motor with new crank case oiler, two ignition systems (Bosch Magneto and Storage Battery) and all other tried and proven features of high grade modern motor car construction. Any of the above models can be furnished with Baby Tonneau body or as a Roadster.

Write for distributors terms and full particulars.

NATIONAL MOTOR VEHICLE CO., 1007 East Twenty-Second St. INDIANAPOLIS, IND.

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A new solid tire has appeared on the horizon—the

GIBNEY WIRELESS MOTOR TIRE

Means a brighter, happier day for the commercial motor world; proclaims a new standard of tire efficiency; and establishes a reduced schedule of tire expense.

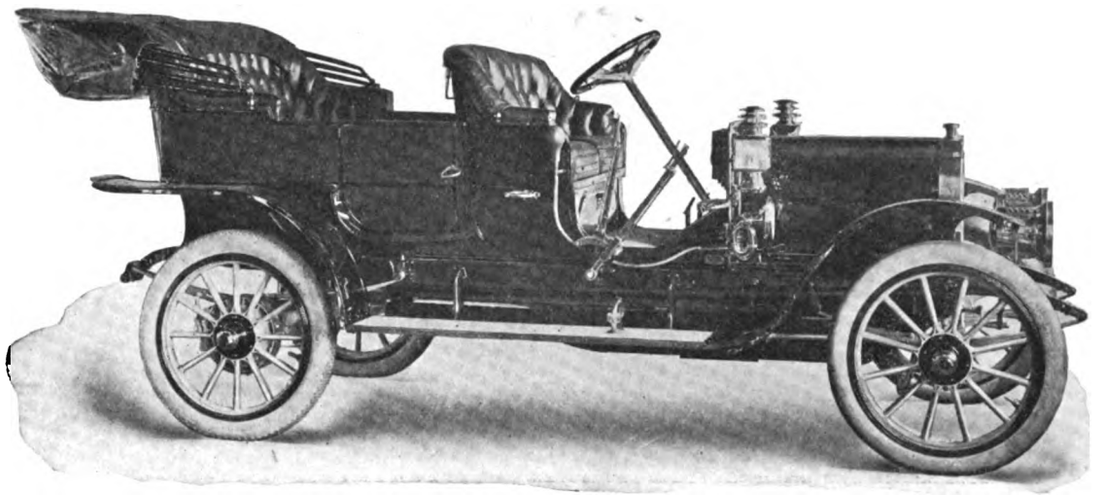
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—THEY WILL INTEREST YOU

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"THE SILENT SELDEN"



$2,000 F. O. B. ROCHESTER, N. Y.

AFTER the remarkable results of our "first year"—the achieved success of 1908, we salute you with real and well established confidence as we introduce the Selden of 1909.

Not only has our promise to produce a high grade car of best materials and workmanship for $2000 been strictly fulfilled, but we have demonstrated the Selden genius in a silent, strong, comfortable, durable and handsome car. It does all that the owner wants to do and all that the chaffeur ought to do. Agents and owners are enthusiastic over it. Not a cheap car at all but one of the how-can-you-do-it-for-the-money kind.

Our 1909 wheel base is lengthened 5 inches from 109 to 114; the magneto and pump moved to left side of motor, the remaining equipment on the right; the brakes enlarged and now rigged inside the frame; the wheels now 34 inches were 32 inches; the radiator and hood made to conform in style to longer wheel base—little touches for style and convenience. No radical mechanical changes, simply because we couldn't find any necessary—no use fooling with what has proved so unusually good.

We can assure those who buy the 1909 Seldens all the efficiency of the 1908 Seldens with a little more style and a little more convenience, a little more refinement. The actual records of use and travel this year have so proven their merit, power and economic stability that it would be hard to promise anything better in practical construction.

THE COMING CAR OF MODERATE PRICE

Catalog and Agency Proposition upon Request. Agencies Wanted Everywhere.

Selden Motor Vehicle Co., Rochester, N. Y.

GEORGE B. SELDEN, President

Members Association Licensed Automobile Manufacturers.

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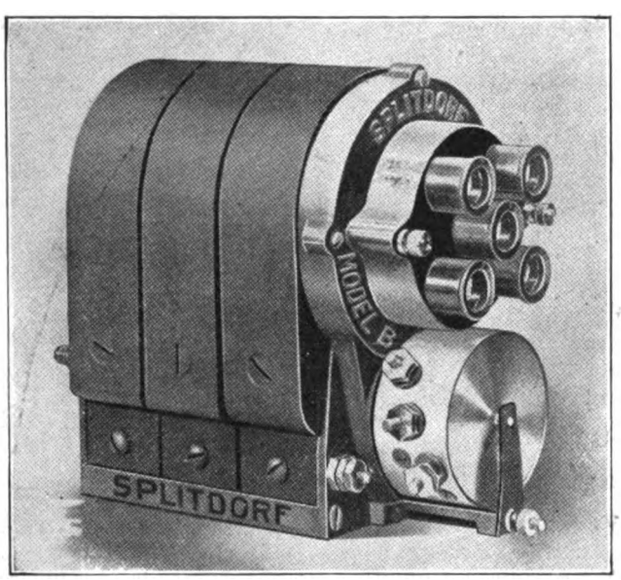
Don't Equip Your Car with a Magneto

unless it is the best.

THE

SPLITDORF MAGNETO

is the Product of Brains, Capital, Experience and Surpassing Facilities.



Those who are experienced in judging the wheat from the chaff—those who have made many experiments, trials and tests of different makes of ignition apparatus — they are the ones who know and concede the superiority of the SPLITDORF product.

The fact is well worth repeating that the foremost electrical engineer of Europe, M. Pierre de Vasselot, who is familiar with every make of magneto, pronounced the SPLITDORF *unequalled in design and efficiency among magnetos of the present day.*

The SPLITDORF Magneto has the immense advantage of fifty years electrical experience behind it — and experience is a mighty factor in any line.

Into every SPLITDORF Magneto is put as much skill, expert workmanship and choice material as if that instrument was to be the one on which the SPLITDORF reputation rested.

You can equip your car with a SPLITDORF Magneto with perfect assurance of having the most perfect system of ignition that human ingenuity has ever devised.

Let us send you our Magneto Catalog.

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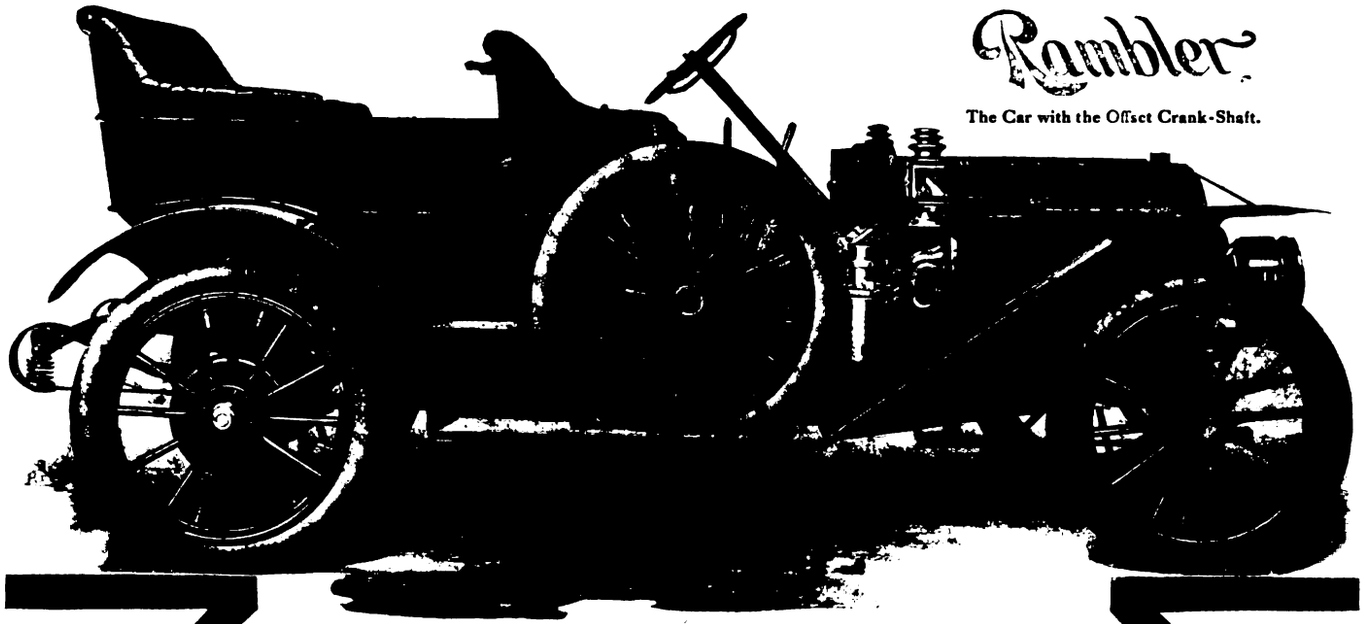
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Rambler

The Car with the Offset Crank-Shaft.

Model Forty-four, 34 H. P., $2,250.
Spare Wheel, with Inflated Tire, Brackets, and Tools, $74. Magneto, $150.

THE CALL OF THE OPEN ROAD

For the most part we do not travel in our leisure hours to go anywhere, but just to go. The delightful thing is to move; to feel the familiar things slipping away behind us, and to enjoy the open road as it unfolds before us.

We like the stir and speed of the journey, the fresh breeze in our faces, and at the wheel of a Rambler you enjoy the added sense of power and control. Besides, you have a feeling of confidence and satisfaction in driving a car of such unusual quality.

The Rambler Offset Crank-Shaft makes this car silently powerful—capable of running at forty or three miles an hour on high speed, and climbing any hill with gratifying ease.

The Rambler Spare Wheel obviates all tire worries—makes punctures mere incidents of a trip—saves the tiresome task of pumping up the new tire, and can be substituted for regular wheel within three minutes' time.

May we send you the new Rambler catalog or a copy of the Rambler Magazine, a monthly publication for owners? Rambler automobiles, $1,150 to $2,500.

Thomas B. Jeffery & Company

Main Office and Factory, Kenosha, Wis.

Branches and Distributing Agencies

Chicago Milwaukee Boston
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THE CAR OF STEADY SERVICE

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, March 11, 1909. No. 24

STEEL TRUST ENTERS THE FIELD

Indications of Its Purpose to Organize Big New Company—Purchase of Belden Patents Included in Plans.

Entrance of the United States Steel Corporation into the field of automobile manufacture, in competition with the established makers, is declared to lie back of the steps which are being taken in Pittsburg, Pa., by men prominent in the corporation for the acquirement of a number of patents governing motor car construction and the organization of a new automobile company. D. M. Clemson, one of the heads of the Carnegie Steel Co., is conducting the negotiation for the steel corporation, and the plan as so far disclosed, provides for the purchase of the patents of E. H. Belden, a Detroit inventor, and for the formation of a concern to be known as the Belden Motor Co.

Arrangements are said to have been made for the erection of a plant at Corapolis, where the steel corporation has set aside about six acres of ground for a factory site. Belden, whose productions have been represented in the automobile industry to some extent in the past, has been in Pittsburg for the last few weeks, giving numerous officials of the subsidiary companies of the steel corporation the opportunity of examining its construction and of having demonstrations.

As an opening wedge into the market, the steel corporation's present program, so far as can be learned, is to have the new company manufacture three models, including touring cars, runabouts and landaus. The runabouts and touring cars are to be of 75 horsepower, while the landaus will be rated at 60 horsepower. On all of the models the minimum price will be $7,500 at the start. After a sufficient manufacturing period to perfect the factory organization for large quantity production and to establish the name of the product in the market, models of popular price will be brought out, and it is intimated that the accompanying campaign for business will be both wide and vigorous.

Norwalk Capital for the Auto-Bug.

Endorsed by the chamber of commerce in Norwalk, O., a special committee of which body has undertaken to place $15,000 worth of its stock, the Auto-Bug Co., purposes to take a factory in that city and commence the manufacture of buggy type motor vehicles, provided the citizens respond properly to the committee's efforts. The concern, of which A. E. Skadden is the head, hails from Newcastle, Pa. In connection with the proposed move to Norwalk, the plans provide for a corporation with an authorized capital of $100,000, to make both buggies and commercial vehicles of low price.

Inter-State a $300,000 Corporation.

Final steps in the incorporation and organization of the Inter-State Automobile Co., of Muncie, Ind., have been taken, the papers filed with the Secretary of State at Indianapolis giving the capital stock as $300,000, of which $200,000 is in common stock and $100,000 in preferred. The following officers have been elected: T. F. Hart, president and general manager; J. M. Maring, vice-president and secretary, and Otto Holden, treasurer.

Minneapolis May Produce the Garicar.

W. M. Pease, of Aberdeen, S. D., is sounding Minneapolis, Minn., with a view to establishing a $100,000 automobile plant in the latter city provided conditions are to his liking. He has let it be known that his product would be called the Garicar, and has enlisted the Commercial Club in his cause.

Witherbee to Move to Springfield.

The Witherbee Igniter Co., of New York City, has leased a factory at Springfield, Mass. Removal to that city will commence next week, the headquarters and general offices of the company accompanying the manufacturing end in the transplantation.

GENERAL MOTORS PLANS UNFOLD

Personnel of the Company—Shares to be $100 Instead of only $1—Glowing Forecast of the Future Earnings.

Still reticent and mysterious, the General Motors Company has at last emerged from the recesses of secrecy to the publication of a prospectus about itself, which has just appeared. The prospectus has for its object the presentation of the company's 7 per cent. cumulative preferred stock—3½ per cent. payable in May and October, respectively—and marks the fact that the enterprise is making its cautious but well marked way toward the point where its shares are to be shoved into the hands of the confiding public. The preliminary steps to this end have already been taken, and a limited list of investing "prospects" have been approached with the offer of "the preferred stock of the General Motors Co. as a conservative and reliable investment." So far has the now completely organized company progressed in its career that it is already advertising a dividend payment to take place on April 1, and amounting to 3½ per cent.—just as promised.

The officers of the company at present, as blazoned to the limelight, are as follows: William M. Eaton, president; William C. Durant, vice-president; Fred L. Smith, vice-president; Curtis R. Hatheway, secretary and treasurer. There is also an executive committee, composed of Durant, chairman, with Smith and Hatheway, while the board of directors, in addition to Eaton, Durant, Smith and Hatheway, has as members, Henry Russell, William J. Mead and Henry Henderson. The registrar of stock is the Trust Co. of America, and the Corporation Trust Co., of New York, acts in the capacity of transfer agent. The office of the company itself is at 103 Park avenue, New York City.

The president, William M. Eaton, although for the purposes of the new ar-

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rangement he has been made president of both the Buick Motor Co., of Flint, Mich., and the Olds Motor Works, of Lansing, is not widely known to the automobile industry. As the successful promoter of numerous Michigan enterprises, with which his connection in an active sense has been temporary but profitable to himself, he has gained a measure of reputation as a shrewd adept in stock flotation and corporation matters. The early possibility exists, however, that he will before long be replaced in the presidency of the General Motors Co. by one who is more experienced in practical automobile manufacture. William C. Durant, of the Buick Motor Co., is the one with whom the brilliant idea of the General Motors plan is said to have originated and is described, by those who know, as its leading spirit. As one of the officers, and a representative of the principal ownership of the Olds Motor Works, Fred L. Smith has been accorded his place in the executive list, while Curtis R. Hatheway, the secretary and treasurer, is an attorney associated with the New York law firm of Ward, Hayden & Satterlee. By reason of the fact that Herbert L. Satterlee, a partner in the latter firm, is a son-in-law of J. Pierpont Morgan, the famous Morgan banking house has been dragged in by rumor as being back of the project, but its officers have unequivocally denied its connection with it. The names of Henry Russell, William J. Mead and Henry Henderson, of the board of directors, are familiar in Detroit in connection with motor car design and production.

Undertaking the delicate task of properly introducing the stock to the investing and speculative market, W. D. Johnson & Co., of New York, who occupy a modest suite of offices on an upper floor of the Hanover Bank building, the label on the door describing them as bankers, explain in a delicately tinted folder that although the capital stock of the company outstanding on January 1, 1909, was only $7,522,473.89, the assets, exclusive of patents, amount to $8,025,532.51, while with fine dramatic emphasis the statement under the heading of indebtedness is the simple word—"Nothing!"

"The General Motors Company is a holding company, interested in five operating companies," the folder commences, with staccato brevity. Continuing, it sets forth that "These companies are engaged in the manufacture of automobiles and automobile parts. The purposes of the organization are the extension of the industry and the effecting of economies in production and distribution. The policy of the company is dictated by practical and successful men, familiar with automobile construction.

"The product of the constituent companies," it goes on, "is being marketed under a comprehensive system, calculated to insure permanency with reasonable profit under normal trade conditions. The engineering staff of the General Motors Co. is composed of men of recognized ability. The General Motors Co. is represented in almost every city and town throughout the United States.

"The production of the operating companies," it is estimated, "for 1909, will be 22,000 automobiles. The sales for 1909 will approximate $25,000,000. With proposed extensions to present plants, and the new plants to be constructed, the producing capacity in 1910 will be in excess of 40,000 automobiles. The value of the product in 1910 will approximate $45,000,000.

"Among others," the prospectus states, "the General Motors Co. controls the largest automobile plant in the United States. The largest automobile plant in the United States now produces 15,000 automobiles per annum." Inquiry by the Motor World at the Johnson office, develops the fact that this claim as to "the largest plant" refers to the Buick, and not to any other company concerning which similar claims are made.

Suggesting to the mind of the "prospect" the astounding possibilities of the future, a few condensed statistics are given, recording that "In 1906 the total production of automobiles in the United States was less than 20,000. In 1908 (panic year) there were constructed in the United States 68,000 automobiles. In 1908 the invested capital in the industry was in excess of $225,000,000." To banish the last remaining doubt as to the future of the company comes the emphatic but somewhat bromidic pronouncement in large type: "The Automobile Industry is Here to Stay."

A change has been made from the original plan and the shares have a par value of $100 each instead of $1, as was first intended, though the authorized capital remains the same, being $7,000,000 in preferred stock and $5,500,000 in common. The preferred stock, as stated, is a 7 per cent, cumulative issue, with dividends payable April 1 and October 1 of each year. It is only the preferred which at present is offered for outside consumption, in which connection the prospectus declares that "The earnings of the General Motors Co. are sufficient to pay the dividend upon the preferred stock several times over." Application is also to be made for the listing of the company's securities on the New York Stock Exchange as soon as practicable. The "asked" price of the preferred is 98, according to quotations this week.

Efforts of brokers and others to learn what the five companies are in which the General Motors claims an interest bring no satisfactory response from the Johnson office, the magic name "Buick" being tendered as sufficient to satisfy all reasonable demands for the present. Nevertheless, as the Motor World previously has indicated, the new enterprise is known to have control or influence in the destinies of the Olds Motor Works, of Lansing, Mich; the Buick Motor Co., of Flint; the Reliance Motor Car Co., of Owosso; the Weston-Mott axle factory at Flint; and the Imperial Wheel Works, of Flint; not to mention a few minor concerns engaged in mixing varnishes, making tops and the like.

The first two constituted the nucleus, while the Reliance was purchased recently. The Weston-Mott and Imperial Wheel Works properties have for some time been dominated by Buick, in whose service they the chiefly engaged.

A visit to the office of W. D. Johnson & Co. by a representative of the Motor World developed an alarming case of perturbation lest too much information concerning General Motors should be given out. The importance of the "soft pedal" being put on any publicity as to the affairs of the project was emphasized by the manager who would regard it as "a personal favor" if nothing be said.

"What are these companies in which General Motors claims to hold an interest?" he was asked.

"Well, you see," he replied, "we are not just now prepared to give out anything concerning the company. A little later, when our plans have progressed to the proper point, we shall be glad to give full details and to have the papers co-operate with us in presenting things to the public in the right way. But for the present the less said about it the better."

While perfectly ready to laud at length the business acumen and capacity of the officers of the company, nothing could tempt him to make any statement as to the details of the things hinted at in the prospectus.

Reluctant as the promoters of the project would appear about giving out exact and definite information concerning the holdings of the company, there has nevertheless been a very remarkable supply of rumors and newspaper statements of a nature to give the impression that it was buying automobile factories right and left—fairly "gobbling them up" as one Detroit paper had it. To what extent this pains or grieves the astute General Motors strategists is not determinable, but it has brought loud protests from a number of the concerns which are being repeatedly "absorbed" without their knowledge. Among others anxious to set at rest not only past but future erroneous statements of this character, Benjamin Briscoe, president and general manager of the Maxwell-Briscoe Motor Co., in a written statement to the Motor World, says: "We desire to state most emphatically that the Maxwell-Briscoe Motor Co. is not, neither are any of its stockholders or connections, interested in any way in any consolidation scheme whatever. Any rumors that you may hear may be set down by you, therefore, as absolutely incorrect and unauthorized, and we ask that if it is not too much trouble, that you make this statement at any time the occasion seems propitious." Several makers, in fact, have written to deny for all time any relation with the project and to express their annoyance at the unauthorized use of their names.

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A. L. A. M. CUTS TWO MELONS

Dividend for Constituent Companies and Rebates for Garden Show Exhibitors—One New Member Admitted.

Not only did the Association of Licensed Automobile Manufacturers admit a new member to its ranks, but at the meeting of the board of managers, on Thursday, 4th inst., a dividend of $50,000 was decided upon for distribution among the concerns composing the association. Furthermore, a rebate of approximately $47,000 to the exhibitors at the last Madison Square Garden show was announced, of which the Motor and Accessory Manufacturers will receive about $23,000, the vehicle exhibitors about $22,300, and the Motorcycle Manufacturers Association $1,700. The dates for the next Garden show were also selected. It will be held January 8 to 15, 1910.

While an "open door" policy as regards new members was announced by the A. L. A. M. some time ago, the path of the Hudson Motor Car Co., of Detroit, Mich., the latest addition to the Licensed ranks, was made especially easy by reason of the fact that it is closely associated with the Chalmers-Detroit Motor Co., through whose selling organization its product will be introduced to the market. It will be conspicuous in the Licensed field because the car which it is to make will be of the low price variety, a four cylinder model selling at less than $1,000. Inasmuch as most of the Licensed makers produce cars selling at considerably above this figure, the new offering will serve to round out the lines available to Licensed agents.

The report of the show committee, through its chairman, Colonel George Pope, pointed out that the large rebate given the exhibitors this year exceeds that of last year by about $15,000, being 40 per cent. greater, and about 100 per cent. greater than was the case in connection with the Garden show in 1907. There also remains in the hands of the committee a large working capital for the next show. A vote of thanks was accorded the committee, the members of which were reappointed to conduct the affair next year. The committee consists of Colonel George Pope, chairman, Charles Clifton and E. P. Chalfant, with M. L. Downs as secretary.

Of the 31 members of the Association 26 were represented, as follows:

George H. Strout, Apperson Bros. Automobile Co.; John S. Clarke, Autocar Co.; W. C. Durant, Buick Motor Co.; W. C. Leland, Cadillac Motor Car Co.; R. D. Chapin, Chalmers-Detroit Motor Co.; M. S. Hart, Corbin Motor Vehicle Corporation; Herbert Lloyd, Electric Vehicle Co.; J. H. Becker, Elmore Mfg. Co.; William E. Metzger, E-M-F. Co.; H. H. Franklin and G. H. Stillwell, H. H. Franklin Mfg. Co.; E. W. Heaington, Haynes Automobile Co.; E. R. Hewitt, Hewitt Motor Co.; S. T. Davis, Jr., Locomobile Co. of America; H. A. Lozier, Lozier Motor Co.; C. W. Matheson, Matheson Motor Car Co.; M. J. Budlong, Packard Motor Car Co.; L. H. Kittridge, Peerless Motor Car Co.; Charles Clifton, Pierce-Arrow Motor Car Co.; A. L. Pope, Pope Mfg. Co.; George Pope, Toledo Motor Co.; George J. Dunham, Royal Tourist Car Co.; G. E. Mitchell, Alden Sampson Mfg. Co.; R. H. Salmons, Selden Motor Vehicle Co.; I. H. Page, Stevens-Duryea Co.; L. J. Hart, Waltham Mfg. Co.; Thos. Henderson, Winton Motor Carriage Co.

Arnstein's Liabilities $283,000.

Investigation reveals that the liabilities of Eugene Arnstein, the Chicago jobber against whom bankruptcy proceedings were brought by Miss Nellie Hanley, his former buyer and manager, reach the surprising total of about $283,000, of which $133,000 is to merchandise creditors, $45,000 owing to banks, $65,000 owing to the relatives of Arnstein, and $40,000 the amount of the Hanley claim. At a meeting of the creditors on the 5th inst., at the Great Northern Hotel, Chicago, a creditors' committee was chosen, with William E. Diehl, Corbin Screw Corporation, chairman, and Messrs. Wainwright, Palmer, Waters and Anderson, representing respectively the Diamond Chain & Mfg. Co., the Continental Rubber Works, the Chicago Handle Bar Co., and Hastings & Anderson.

New Headquarters for A. M. C. M. A.

The American Motor Car Manufacturers Association will this month remove its New York City offices from the Spalding building to a new building which is just being completed at 505 Fifth avenue, a few doors from Forty-second street. Four large rooms have been taken on the fifteenth floor, giving about twice the space that the association has had heretofore. The new assembly room will be especially spacious, providing accommodation for large gatherings.

M. A. M. Moves to New York.

Removal of the official headquarters of the Motor and Accessory Manufacturers will take place March 15, from the present location in the Union building, Newark, N. J., to New York City. Suitable offices have been engaged in the Argus building, 17 West Forty-second street, where the regular business of the association will be conducted and where the meetings of the board of directors will be held.

Reliable Dayton Makes Capital $200,000.

Increased capitalization has been provided for the Reliable Dayton Motor Car Co., of Chicago, Ill., manufacturers of carriage type motor cars and delivery wagons. From $25,000 the expansion has been made to $200,000, all paid in. In its three years of business life the concern has greatly outgrown its original capital.

N. A. A. M. APPOINTS COMMITTEES

Recommends Starting the Glidden Tour from Detroit—Votes to Oppose Closing Mt. Desert to Automobiles.

Indicating an intimate touch with the course of automobile affairs in general, the executive committee of the National Association of Automobile Manufacturers, at its meeting on Wednesday, 3d inst., in addition to transacting business relating to its own organization affairs, such as the Chicago show report, the election of a new member to the committee, and the appointment of sub-committees for the ensuing year, adopted resolutions relating to the proposed prohibition of automobiles in Mt. Desert, Me., and to the naming of Detroit as the proper place from which to start the Glidden tour.

To succeed William Mitchell Lewis, resigned, J. W. Gilson, of the Mitchell Motor Car Co., of Racine, Wis., was chosen as a member of the executive committee. For the first time since his election as president, S. D. Waldon occupied the chair. The report of the general manager indicated that the late Chicago show had been the most successful that the association had ever held, both in the amount of business transacted and in the net receipts.

The resolution that was adopted concerning the American Automobile Association's tour set forth the fact that Detroit had become the greatest automobile manufacturing center of the world, it being estimated that the value of the motor car products of that city for the year 1909 will be approximately $50,000,000. The N. A. A. M. believes "it would be a proper and fitting tribute to the enthusiasm displayed by the motorists of Detroit" to make it the starting point for the tour.

Considerable attention was devoted to the Mt. Desert situation, it being shown that the petition for the prohibition of motor cars on the island had been signed by 61 persons, practically all of whom were summer residents, and, further, that they had raised a "lobby fund" for the promotion of the prohibitive legislation. Counsel for the N. A. A. M. has been instructed to use all the means in his power to prevent the passage of such a law.

The president nominated and the meeting approved the following committee appointments for the year: Membership, S. T. Davis, Jr., Benjamin Briscoe and C. C. Hildebrand; legislative, W. R. Innis, R. D. Chapin and C. G. Stoddard; roads, R. D. Chapin, S. T. Davis, Jr., and L. H. Kittridge; show, W. E. Metzger, A. L. Pope and Thomas Henderson; contest, H. O. Smith, W. T. White and W. E. Metzger; audit, Benjamin Briscoe, S. T. Davis, Jr., and Charles Clifton; traffic, A. L. Pope, W. R. Innis and C. C. Hildebrand.

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In the Retail World.

A. B. Ward has opened a garage and repair shop at Fresno, Cal. It is located at 1228 I street.

J. W. Mears, of Brooklyn, N. Y., has opened a salesroom at 136 Livingston street. He will represent the Acme.

J. H. MacAlman has taken the agency for the Stearns in Boston, Mass. His headquarters are at 889 Boylston street.

The Auto Specialty Co. plans to open in Kansas City, Mo., this month. It has taken a location at 308 East Fifteenth street.

Jerry Ward, of Missouri Valley, Ia., has opened an automobile repair shop. A very complete equipment has been installed.

S. A. Houser has instituted an automobile livery service in Omaha, Neb. It operates day and night from the New Schlitz Hotel.

Thomas Trewet, of Anderson, Ia., has opened a repair shop for automobiles. He is one of the pioneers in this line in his vicinity.

Frank A. Zabel has become established in the automobile business in Johnson, Nemaha county, Neb. He is agent for the International.

W. S. Guthrie's garage, at Terrell, Tex., was burned out on the 17th ult. The loss was $2,750, and the cause of the fire not accounted for.

Charles L. Blatz had an "opening day" for his new Market street garage, on the 1st inst., at Sandusky, O. He holds the Maxwell agency.

John Hilliard has commenced the erection of a garage in Ottawa, Ill. It is located on Main street, between the A. Mutter and the Formhal buildings.

The Palmer-Singer Distributing Co., with L. A. Hillman as manager, has entered the trade in St. Louis, Mo. It will represent both the P. & S. line and the Simplex.

G. F. Stark and R. F. Baker have organized the firm of Stark & Baker and have opened at 972-6 North High street, Columbus, O. They will handle the Maxwell.

Maine has been invaded by the Black Mfg. Co., of Chicago, Ill., makers of motor buggies. The company has opened an office and salesroom in Portland, at 220 Commercial street.

W. H. Brewer, Raleigh, N. C., has formed the Carolina Garage & Machine Co., which is erecting a two story building. The entire lower floor will be used as a salesroom for Franklin cars.

The Foss-Hughes Motor Car Co. has taken a location for a branch in Baltimore, Md., where the Pierce Arrow wil be featured. The branch will be at 533 North Howard street.

The Mahlke Automobile Garage, of Wheeling, W. Va., has been sold by R. H. Mahlke to a stock company. The name will probably be changed to the West Virginia Automobile Co.

The Pence Auotmobile Co. has expanded so that it now takes in St. Paul as well as Minneapolis, Minn. The St. Paul branch is as 208 West Fifth street, and will be in charge of J. B. Farr.

The latest addition to Boston's automobile colony is the American Simplex Co. of Boston, which will handle the American Simplex 2-cycle car. W. Mason Turner will have charge of the new agency.

The J. W. Bowman Co., of Boston, Mass., is again in its old quarters at 911 Boylston street, from which it was compelled to move by the fire of January 26. The place has been fitted up more elaborately than before.

W. S. Lininger, 203 East Eleventh street, Columbus, Neb., has outgrown his present quarters and has accepted plans for a new building. It will provide increased garage and repair shop space, as well as a large salesroom.

The Woonsocket Automobile Co., of Woonsocket, R. I., has commenced a sales, garage and repair business at 117 Berman street. The proprietors are Frank Bigbie and Porter Turner, and the Regal car will be the leader.

J. Hollingsworth, proprietor of the Overlang Garage at Ogallala, Neb., has arranged to handle the Overland car in Keith, Perkins and surrounding counties. A first class repair shop is operated in connection with the garage.

Charles Hagman, formerly of Hagman & Hammerly, has taken the Chicago agency for the Lambert friction drive cars. He is building a garage and salesroom at Hoyne avenue and Jackson boulevard.

Alfred W. Peard, of Hartford, Conn., is agent for the Overland car, not the Oakland. He is the Overland selling agent not only for Hartford, but for the surrounding territory and has established a salesroom at 26 Kingsley street.

W. C. Marsh and Lyle Selby have become agents for the Studebaker and E-M-F. cars at Adair, Guthrie county, Ia. They are remodeling one of their implement houses at Audubin and Cass streets as a salesroom, garage and repair shop.

The Holmes-Adkins Co., which conducts a general transfer business in Omaha and South Omaha, Neb., is building a garage and automobile machine shop in the latter place. The company has the agency for Jackson and International cars.

Morgan & Wright have effected the transfer of the location of their New York City branch. From 214 West Forty-seventh street the move has been made to commodious quarters at 1849 Broadway, where all styles of Morgan & Wright tires will be carried in stock.

Fire played havoc with the Sanger Automobile Co.'s garage, 572-4 Farwell avenue, Milwaukee, Wis., on the 21st ult., destroying 24 machines. The loss, chiefly on the contents, is estimated at $70,000, partly covered by insurance. The origin of the conflagration is unknown.

The Chicago Motor Car Co., agent for the Packard, will build a new establishment at the northeast corner of Michigan avenue and Twenty-fourth street, in the Windy City. It will be a three story L-shaped building of concrete and brick, and will be completed next August.

The Bischeld Auto Co., 214-16 East Second street, Grand Island, Neb., is operating a garage and repair shop in connection with its automobile salesroom. Oscar Kirschke, of the company's sales force, has returned from the Omaha show with a number of new equipment ideas which will be incorporated in the service.

Fred T. Smith, agent for the Apperson and the Autocar in Boston, Mass., who lost his shop location as a result of the Park square fire, has secured new quarters. He has taken a large portion of the big manufacturing building located at 61-63 Wareham street, obtaining a transfer of the lease from the Locomobile Company of America.

Gawthrop & Wister, agents for the Elmore in Philadelphia, have branched out into larger quarters by the acquisition of a garage building at 223-5 North Sixteenth street. They have also established a separate agency sales office for the Elmore at Filbert and Juniper streets, in charge of W. W. Gawthrop. The local retailing will be at the old place, 244 North Broad street.

The Week's Incorporations.

Cleveland, O.—Auto Sales Co., The, under Ohio laws, with $5,000 capital. Corporators—R. W. Edwards, et al.

Council Bluffs, Ia.—Atlantic Automobile Co., under Iowa laws, with $25,000 capital. Corporators—C. L. Herring, J. G. Herring and B. A. Spinney.

Muncie, Ind.—Inter-State Automobile Co., under Indiana laws, with $300,000 capital. Corporators—T. F. Hart, J. M. Maring and Otto Holden.

Saginaw, Mich.—Erd Motor Co., The, under Michigan laws, with $22,900 capital. Corporators—John G. Erd, Harry S. Erd and William J. Passolt.

San Antonio, Tex.—Lemly-Wood-Brownlee Auto Co., under Texas laws, with $15,000 capital. Corporators—F. H. Lemly, J. R. Wood and J. A. Brownlee.

Kansas City, Mo.—Zartman-Tuller Motor Car Co., under Missouri laws, with $2,500 capital. Corporators—A Zartman, B. H. Tuller, F. M. Hayward, et al.

St. Louis, Mo.—Phillips Automobile Co., The, under Missouri laws, with $2,000 capital; to deal in automobile supplies. Corporators—Henry Ascher, A. W. Alexander and J. W. Taylor.

Buffalo, N. Y.—Henry Brunn Automobile Co., under New York laws, with $20,000 capital; to manufacture motor vehicles. Corporators—Henry Brunn, Anthony Sturtzer and George Ostendorf.

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JANUARY SHOWS A BIG DECLINE

Shrinkage Greater in Value Than in Volume of Exports—Remarkable Falling Off in United Kingdom's Buying.

Increases in the exportation of American cars to foreign countries during January were recorded in six of the fourteen geographical divisions into which this trade is classified, the list of those who have become larger customers than before including British North America, Mexico, "Other Europe," West Indies and Bermuda, British Australasia and Africa. The gains made in these divisions, however, are offset chiefly by a very remarkable falling off in the exportations to the United Kingdom, which has heretofore been the heaviest buyer on the list, but which during the month took $45,785 as against $194,805 during the corresponding month last year. As a customer, therefore, it gives first place for the month to British North America, whose purchases were $53,271 as against $19,064 in the previous January. Declines in France, Germany and Italy are shown, though of a far less serious nature than in the case of the United Kingdom, while a lessening in trade is evident in the relations with South America, British East Indies, Other Asia and Oceania, and Other Countries. The total of cars and parts for the month was $292,995 as against $405,652 in the same month a year ago, although in the actual number of cars shipped abroad the difference is only that between 180 and 167 machines, respectively. This disproportion is due to the fact that while the average value per car of the machines shipped during January, 1908, was $2,504.52, the average for the same month in 1909 was $1,427.88.

For the seven months ending with January, the number of cars shipped amounted to 1,041, having a value of $1,950,143, which with $321,406 in parts, makes a total of $2,271,549. This is somewhat less than the record for the same period in 1908 and 1907, both as to the number of cars shipped and the value of the exportations. The record in detail is as follows:

	January		Seven Months Ending January		
	1908	1909	1907	1908	1909
Automobiles	$369,075	$238,456	$2,103,550	$2,391,460	$1,950,143
Parts of	36,577	54,539	325,993	321,999	321,406
Exported to—					
United Kingdom	194,805	45,785	562,958	899,249	682,324
France	39,015	33,084	177,663	274,224	136,377
Germany	2,616	210	67,671	80,743	58,402
Italy	15,231	10,784	68,825	43,452	40,167
Other Europe	6,353	13,916	87,761	83,322	121,089
British North America	19,064	53,271	496,094	469,541	667,902
Mexico	47,597	49,183	465,073	273,906	186,478
West Indies and Bermuda	31,956	48,549	100,043	182,519	146,989
South America	21,551	11,254	131,381	169,348	64,692
British East Indies	1,910	1,736	21,142	19,357	14,784
British Australasia	14,668	14,712	169,577	137,018	68,883
Other Asia and Oceania	8,051	5,707	66,666	66,963	58,649
Africa	697	2,822	7,402	6,600	16,389
Other countries	2,138	1,982	7,287	7,217	8,424
Total	$405,652	$292,995	$2,429,543	$2,713,459	$2,271,549

Claims Patent Rights on Shaft Drive.

Homer L. Boyle, whose patent claims were reviewed in the Motor World in August, 1907, in connection with his contention that he had basic rights covering shaft drive construction on automobiles, has renewed his agitation after a period of inactivity and has instituted suit against a well known manufacturer. He is the author of the "History of Peace" and has a plan for insuring permanent peace among the nations, but in questions involving his supposed patent rights he is not averse to legal warfare. He was formerly of Grand Rapids, Mich., but now resides in Lansing. The patent on which he seeks to collect tribute is No. 470,175, and is dated March 8, 1892.

Auto-Car Equipment Reorganizes.

The Auto-Car Equipment Co., of Buffalo, N. Y., has been reorganized as the Auto-Car Mfg. Co., with a capital of $500,000. While in the past it has made a leader of electric trucks, considerable attention will be given to gasolene commercial vehicles in the future.

Changes in Ajax-Grieb Staff.

J. B. Burwell, former Chicago manager of the Ajax-Grieb Rubber Co., has been placed in charge of the Minneapolis branch. C. R. Van Auken has been made manager of the Detroit branch, succeeding Charles W. Hatch.

Firestone on West Indian Outing.

H. S. Firestone, president of the Firestone Tire and Rubber Co., Akron, O., has started on a five weeks business and pleasure trip to Havana and other southern points. He will include the Bahama Islands on his itinerary.

Making Empire Tire Plant Bigger.

The Empire Automobile Tire Co., Trenton, N. J., is erecting another large addition to its plant. It is a duplication of the building put up last spring.

Reorganized Rainier Incorporates.

The reorganized Rainier interests have incorporated as the Rainier Motor Co. of New York. The capital is $350,000.

AMERICAN NAPIER INCORPORATES

New $1,000,000 Corporation to Rehabilitate the Old Company's Business—Plans for Immediate Renewal of Activity.

After something like two years of quiescence following the failure of the Napier Motor Co. of America, the interests formerly concerned in the reproduction in this country of the English Napier car are preparing to recommence activities. Accordingly the American Napier Co. was incorporated last week under the laws of Maine, with a capitalization of $1,000,000. Otto B. Cole, who for some time has been associated with American Napier affairs, is named as president, and it is understood that the organization will be continued in much the same form as before.

After the failure of the old $600,000 company in 1907 it was bought in by a few of the stockholders and the business continued on a limited scale at the Jamaica Plains factory, which was formerly a part of the old plant of the B. F. Sturtevant Co. A few cars have been built, but the bulk of the work has been in effecting repairs and replacements to cars already out.

A new contract has just been closed with the parent English concern, which stipulates the retention of John S. Napier of that concern as consulting engineer. Parts in the rough and materials will be imported for the most part, to be finished and assembled in this country. American parts also will be utilized to a certain extent. The product will comprise a line of three cars, one of which, the 40 horsepower, four cylinder model, is on view this week at the Boston show. In addition to this there will be two six cylinder machines, one of 30 and the other of 60 horsepower; while a limited number of the smaller four cylinder cars also will be marketed.

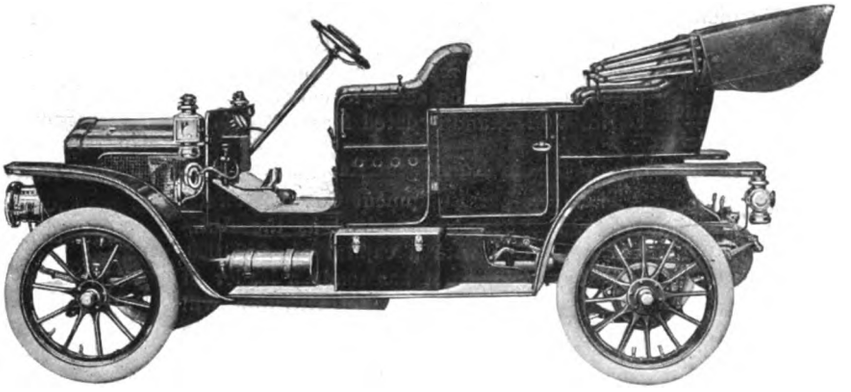
During the current year about 200 cars will be built, in which connection the capacity of the present plant will be increased by about one-third by the addition of something like an acre of floor space. For 1910 it is planned to undertake production on a much larger scale. Plans are also said to be on foot to manufacture some of the Napier models with the compressed air system of transmission which is being offered by the Compressed Air Power Co., Boston, of which the treasurer is one of the incorporators of the new Napier company.

Logan Creditors Defer Selling Plant.

Creditors of the Logan Construction Co., Chillicothe, O., met on the 8th inst., to consider an offer for the purchase of the entire plant for a little over $16,000. As this is only about 50 per cent. of the appraised value there was considerable objection and the matter was adjourned until March 19.

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The Advantages of the
WHITE STEAM CAR



The White Steamer possesses so many points of superiority over other types of automobiles that any one who purchases a car without first investigating the White is acting with only a partial understanding of the present-day attainments in the construction of automobiles. The principal advantages of the White may be summarized as follows:

All variations of speed are obtained without the shifting of gears.
The speed of the car responds instantly to the throttle.
It is free from vibration.
It is noiseless.
It is smokeless and odorless.
The engine can never be "stalled."
It starts from the seat—no "cranking."
It is easiest on tires.
The power is transmitted without the use of a friction clutch.
It is unequaled for hill-climbing.
It is the simplest car to operate.
It is the safest for the passengers as well as for the other users of the highway.

We can meet the requirements of almost every pocketbook with either our 20 horse-power car at $2,000 (shown above) or our 40 horse-power car at $4,000.

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NEW YORK, MARCH 18, 1909.

Preparing Emergency Markets.

In moments of confidence, business men of large enterprise have revealed the fact that during prosperous times they have borrowed money from as many banks as possible, to familiarize those institutions with their paper, so that when hard times might come more channels of bank accommodation would be open to them than if previously they never had sought loans. A parallel to this policy is suggested in the attitude taken by at least a few motor car manufacturers in spending money for the development of export trade when the latter is not necessary to their present success.

"This country is plenty big enough for us" is the more usual sentiment, however, even among some of the largest makers, and, viewing the space from the Atlantic to the Pacific and from the Canadian border to the southern outposts, it does appear to provide all the necessary size and opportunity for trade endeavor. Owing to its great size and the variety of its interests and industries in its different sections, an excellent balance is maintained between its areas of prosperity and depression, respectively, as was evidenced during the so-called panic period, when the slackening of the automobile market which took place in certain large districts was quite offset, from a general standpoint, by the remarkable activity in others.

In recognizing or asserting the advantages that this width of market affords, the same considerations point even more strongly to the benefits derivable from a trade that rests on a basis not confined to the American circumference. Big as is the territory within the United States, in square miles, population and market possibilities, it is still subject to those large and sweeping variations in business conditions which affect it as a whole, in spite of the happy way in which the automobile trade came through the last unpleasant flurry.

Bobbing up serenely with a "Never-touched-me!" expression, the industry has busied itself planning enormous future production, a factor in the situation which every maker, no matter how securely placed his immediate output may be, will have good reason to recognize. If the unpleasant point of overproduction is reached as early as many indications would promise, the makers with a purely domestic market will not rest as easy in the circumstances as those who have prepared other outlets for their manufactured stock.

With whatever vigor the work is carried on, the introduction of any particular maker's cars into the foreign markets is a slow and tedious process, so that in business extremity a sudden turn toward lands across the sea will not yield the desired results, no matter how intense is the effort applied. The deliberate machinery of foreign trade cannot be put into motion for a newcomer with the rapidity that his need demands. Neither is it reasonable to suppose that retail buyers abroad will take warmly to a car or maker that to them has heretofore been unknown. Where a maker has already broken the way for his product, however, and has established his reputation and connections, he can, when emergency dictates, jam on the pressure with a fair certainty of corresponding orders.

Garbling American News.

Instead of relating how a Chicago pork packer ordered 85 automobiles regardless of price, so that he could always have one in service, or how western cowboys pitted a wild bull against a mine owner's touring car in a fight for $11,000,000 a side, the European publications are now devoting more serious attention to American automobile matters, and the English papers particularly are observed to have many excellent and accurate accounts of motoring events and progress in the United States. Nevertheless, the British editorial attempts to enlighten readers as to American happenings are frequently startling, as witness the following extracts from an account in London Motor, concerning Boston's conflagration in January.

"A cablegram from Boston (U. S. A.)," the paper declares, "records a great disaster to the American automobile industry. Whilst a fierce blizzard was raging on Sunday morning, a fire broke out in the Coliseum, the largest building in the city, in which was being held the annual motor show. In the course of a few hours the building and all its contents were entirely destroyed. The exhibits were those which 10 days prior had constituted the bulk of the cars displayed at the Madison Square Garden, New York, for the annual show of the American Motor Car Manufacturers Association, having been transferred to Boston from whence they would later have been sent to the Chicago show.," etc.

Those familiar with trade matters will relish the humor of so complete a garbling since the only "Coliseum" of large importance to the automobile trade is the one in Chicago, and the Boston automobile show is holding forth during the present week. That the American Motor Car Manufacturers Association should have been represented in the Madison Square Garden instead of the Grand Central Palace is news which escaped even the most observant, and will no doubt astonish the Association of Licensed Automobile Manufacturers who up to this time have congratulated themselves on controlling the Garden for their own exhibits exclusively. Explanatory amplification on meagre reports apparently involves a task that is still too much for the British editor, until he has had further time to acquaint himself with American affairs.

"Senator Frelinghuysen believes that non-residents should contribute their share toward keeping New Jersey's roads in repair." So states a New Jersey paper. The Senator is, of course, entitled to his own opinions,

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and no particular fault can be found with him for holding a belief that is the quintescence of provincialism. But when the paper in question goes on to say that this arch enemy of the automobile is "an enthusiastic automobilist and an advocate of sane motoring,"we experience a feeling of nausea. —Exchange. Tut! tut! For that tired feeling try peruna. Frelinghuysen is one of the sanest motorists that ever made laws for New Jersey. He proves his sanity by voting in New Jersey and living in New York, and the illustrious carpet bagger so enthusiastically believes in paying for the upkeep of roads that it is rumored that in the occasional role of a New Yorker he has tendered New York State $1,500 in payment for the damage his car has done to its roads during the several years he has used them.

From the heyday of the bicycle industry the British automobile trade has inherited to some extent a predeliction for the "nameless" or "transfer" product, which is to say, the partially or completely assembled machine which is bought by a dealer and sold as of his own production. Up to this time, the practice, with its questionable effect on the market has not been in evidence in this country, but that its appearance here is threatened is revealed by an English motor trades publication which announces the receipt of a letter of inquiry from America asking for the names of firms willing to supply cars of the nameless variety. Any product produced on such a basis is apt to go down into oblivion as nameless as it appeared, and the industry is too well established to be in any sort of danger from such practices. Nevertheless, the development is an interesting one as indicating a digging up of old schemes.

Although as a pirate Automobile Topics is not comparable with the Motor re-Print, our more respectable contemporary will do well to be cautious in crediting borrowed matter to manufacturers house organs. Not all of the latter always give credit where credit is due as the reproduction in Topics of a Motor World editorial, credited to a house organ, serves to demonstrate.

Women drivers are to be barred from the Glidden tour by the A. A. A., to meet the wishes of the manufacturers contest committee. The latter should now prod the A. A. A. into similar action as to allowing the participation of women in track contests.

IN THE REALM OF CAB AND 'BUS

Motor Vehicles Replace Washington's Herdics—Taximeter Service Spreading—New Companies Formed.

Pursuant to an act of Congress, the Metropolitan Coach Co., of Washington has put into service in Sixteenth street a motor omnibus which is the first to be installed in place of the old-time herdics which have been so great a source of annoyance to Washingtonians for many years. The new 'bus is unique in that it is air-cooled, and also in possessing worm drive and a number of other features peculiar to the construction adopted by the H. H. Franklin Mfg. Co. It is, in fact, an adaptation of an 18 horsepower Franklin truck chassis, carrying a sixteen passenger body with side seats and rear door. The vehicle is designed for one-man operation, the door being controlled by a strap from the driver's seat, while the fares are deposited in a special collection box of which the driver is in charge. The machine is geared to a speed of about 15 miles an hour, and has a three-speed sliding gearset. It is scheduled for a daily service schedule of 17½ hours, during which time it will cover 120 miles.

Beating the taximeters has become a custom on the part of London motor cab drivers where the patron does not look like a "spotter" and where the route to be taken is not likely to disclose to the company officials the offense of running with the "For hire" flag up. "Shall we use the taxi, sir, or shall I leave it to you?" is the polite inquiry on the driver's part. If the register is considered unnecessary, both driver and passenger gain accordingly, while the company bewails its dwindling profits.

William Rudd, formerly with the New York Taxicab Co., has organized a company of his own in Brooklyn, N. Y., which will be known as the Brooklyn Taxi-Cab Co. It is capitalized at $250,000, and the plans provide for an equipment of 125 machines by the first of May. The officers chosen are; William Rudd, president; Franklyn Kelly, vice-president; William A. Abel, treasurer; Vincent W. Many, secretary.

John W. Wibley has been elected president of the Pittsburg Taxicab Co., which is expecting to put about 25 machines in operation within a few weeks. The other officers chosen are: Grant McCargo, vice-president; C. A. Blanchard, treasurer, and W. Sable Lynn, secretary.

Second to enter the taximeter cab field in Denver, Colo., a new company has been organized by Henry Hurlburt and Ralph Glover. It will be known as the G. H. Garage and Taxicab Co., and will have its headquarters at Seventeenth and Pearl streets.

American and Canadian capitalists have formed a taximeter cab company at Toronto, to be known as the Berna Motors and Taxicabs, Ltd. The concern is capitalized at $500,000, and it is proposed to employ cars of French manufacture.

COMING EVENTS

March 6-13, Boston, Mass.—Boston Automobile Dealers Association (Inc.) seventh annual show, Mechanics Building.

March 8-13, Kansas City, Mo.—Kansas City Automobile Dealers Association's show, Convention Hall.

March 8-13, Portland, Ore.—Portland Automobile Club's show.

March 8-13, Memphis, Tenn.—Automobile show, Auditorium Building.

March 11, New York City—Midwinter endurance run, New York to Boston, for Campbell trophy.

March 11, 12, 13, Milwaukee, Wis.—Milwaukee Automobile Club's first annual show in the Hippodrome.

March 13-20, Minneapolis, Minn.—Minneapolis Automobile Show Association's show, National Guard Armory.

March 15-20, Rochester, N. Y.—Rochester Automobile Dealers Association's show, Convention Hall.

March 16, 17, 18, Chattanooga, Tenn.—Three days race meet and hill climb on Lookout Mountain.

March 17, 18, 19, Pittsburg, Pa.—Three days' endurance run.

March 22-27, Toledo, O.—Toledo Automobile Dealers Association's automobile show.

March 23-26, Daytona, Fla.—The Motor Contest Association's (Inc.) seventh annual international races, Daytona Beach.

March 24-27, Syracuse, N. Y.—Syracuse Automobile Dealers Association's first annual show, New York State armory.

March 25, 26, 27, Logansport, Ind.—Automobile show, old rink.

March 27, Atlanta, Ga.—Third annual hill climb, on Stewart avenue hill.

March 27-April 3, Pittsburg, Pa.—Automobile Dealers Association's show, Duquesne Garden.

April 5-10, New York City—New York Automobile Trade Association's second annual automobile carnival.

April 10, New York City—New York Automobile Trade Association's second semi-annual hill climb on Fort George hill.

April 15-17, Louisville, Ky.—Louisville Automobile Association's show, Coliseum.

May 3-6, Harrisburg, Pa.—Harrisburg Motor Club's endurance run.

May 18, 19, Norristown, Pa.—Norristown Automobile Club's endurance run, to Hagerstown, Md., and return.

May 22, Hartford, Conn.—Automobile Club of Hartford's 200 miles endurance run.

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BOSTON SHOW THE HUB'S BIGGEST AND BEST



PAGES POSING AT ENTRANCE TO BOSTON SHOW

Exceeding all preconceived notions of a local show, revealing a greater number of cars than either of the two New York shows of this season, and bigger than any exhibition of its kind ever held in New Eigland, the seventh annual show of the Boston Automobile Dealers Association, which is stuffed into every corner of Mechanics Hall this week, well may be considered one of the most notable events of the year. That conservative old New England should afford sufficient encouragement to the motor vehicle to warrant such a demonstration is hardly less remarkable than that the industry should be able to afford such a variety of products in the double ranges of price and size.

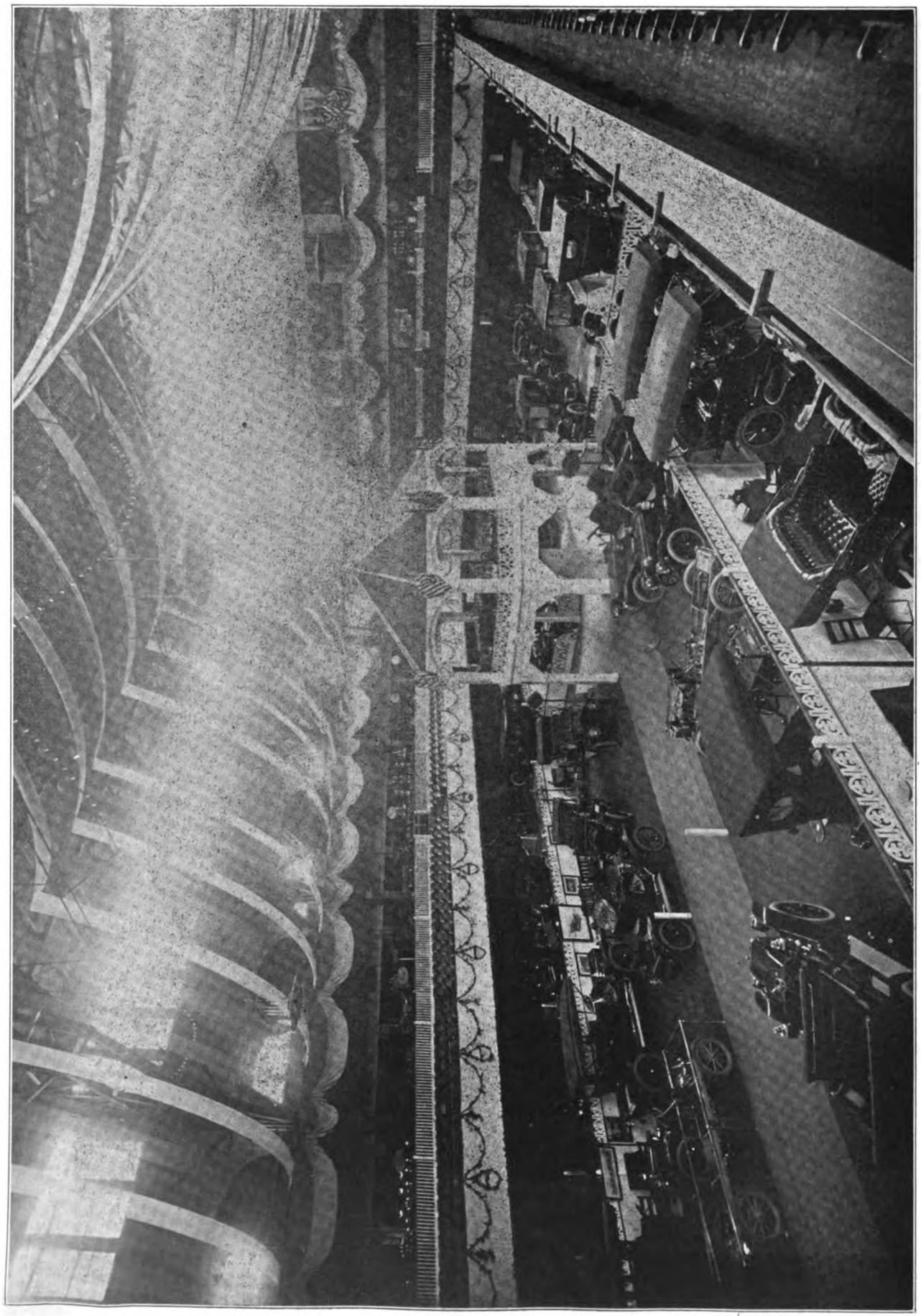
In proof of the sheer bulk of the show, witness the fact that it reveals one-third more cars than were shown at the corresponding time a year ago, that there are within half a hundred of as many cars on view as were shown at Chicago last month, and that it stages within one hundred of as many cars as were shown at both of the recent New York shows put together. As a matter of fact, 409 distinct and separate vehicles are displayed, this number representing the product of more than 100 different makers, and the presentation of just 90 exhibitors. Of parts, accessories and equipments, there are 150 displays. In addition to these, there are, as a matter of course, sundry other exhibitors, whom a generous management admits out of deference to Boston's long-established custom of maintaining a welcoming latch-string on the exhibitor's entrance to Mechanics Hall But it should be added that there is less of this outside element in evidence than usually has been the case before, so that in every respect the show is a record-breaker.

For its success, much credit is due to the activities of the show committee of the dealers' association, and especially to manager Chester I. Campbell, who is both a tireless and purposeful worker. Indeed, the management of the show is peculiar in its intimacy and man-to-man quality. So strong is this quality that no surprise is excited if, previous to the opening of the show, the manager himself is discovered in long linen duster not merely superintending the work of the decorators, but, actually plunging into it with an air of apparent determination to do it all himself; or if after it is in full sway, he is to be found, not entertaining visitors in his office, but out in the show, giving personal instructions to some workman or attendant.

The eye of the continuous pursuer of the various shows refuses to be over-awed with any save the most daring of color schemes and the most ornate of embellishments. Yet it must be admitted that the scheme of decoration adopted for this year's show is harmonious and pleasing, if lacking somewhat of the dash of last year's "Japanned" setting, or the daintiness of the apple blossom era of the year before. White, set off with green, backed by saffrons or dull reds and topped with yellow, is the coloring, and besides being restful to the eye and delightfully free from the affected classic in decoration, it furnishes a soothing background against which the cars show to good advantage, even when they happen to be as offensive as garish coloring can make them.

As the "Hall of Arches," that portion of the big exposition building generally known as Exhibition Hall, is first to meet the eye of the average visitor. Here the pillars are concealed beneath a mask which gives them the semblance of onyx columns supporting arches of white marble which join to divide the ceiling into rectangles where from the central arc lights, rays of yellow and white extend to the sides. Decorations in high relief on the arches break up their monotony, while rows of electric lights serve to lighten them as well as adding to the illumination which is mainly supplied by

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GENERAL VIEW OF GRAND HALL, MECHANICS BUILDING, WHERE BOSTON SHOW CENTERS

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VISTA OF THE HALL OF ARCHES, BOSTON SHOW

the lights in the center of the ceiling panels. Separating the exhibits are barriers, breast high, solid white below, but latticed at the top and surmounted by green railings. At the corner of each stand an oval sign with golden letters on an onyx background and mounted on a wrought iron standard, serves to indicate the nature of the exhibit. The arches are of cheese-cloth, the onyx pillars are thinly coated with marbled paper, and the open grillings on the fences which separate the booths are papier-mache. Nevertheless, the effect is the same as though the materials were real instead of counterfeit, and the attention is in no way distracted by them from the objects for which they are meant to serve as a setting.

In Grand Hall, a slight variation has been made necessary by purely architectural considerations. The bandstand this year occupies a preferred position in the very center of the hall, where it takes the form of an octagonal pagoda, surmounted with a red roof, and with its open lower story straddling the cross-ways of the two main aisles on the floor. The stage—preferred position also for the one exhibitor who occupies its entire length and breadth—is disguised behind a huge, false proscenium arch of green, with a deep red valance, pricked off with festoons and radii of incandescent lights. The drop curtain is of red, with broad panels, vertical and horizontal, of saffron. At either side of the proscenium, mounted on panels of white plaster, are the genii of progress, each bearing a torch in either hand. Around the balcony front, on a plain white backing, are festoons of greenery, illuminated with strings of variegated colored lights. Walls, pillars and ceilings are covered with the same red, saffron and yellow tones found in the exhibition hall.

In the second floor of the latter, in the smaller, Talbot Hall, formerly entirely given over to the tender offices of the caterer, but now largely reserved for exhibitors of cars; and in the basement, the same general scheme is carried out, but with less elaboration and consequently less telling effect. Throughout the show, the carpeting of the stands is of a neutral brown—a shade well calculated to remain unchanged throughout the week. As a finishing touch to the decorations a "moving" feature is added in the shape of a group of red-garbed pages who idle about at their crimson ease.

Despite the inadvertent reference to the pagoda of melody in the center of Grand Hall as a bandstand, it must not be supposed that it was intended for the occupancy of a band. Quite to the contrary, as the woman's orchestra, soloist and all, which is one of the standard features of all Boston shows, again does battle with the patient exhibitor who is striving to advance his own interests; or charms the throngs packed into the seats which surround the balcony. Another ladies' orchestra and a pompadore brigade of male musicians discourse the latest in popular songs in other parts of the show. But the twangy piano and the youths who sold sheet music last year, are a by-gone nuisance.

All Boston rubs elbows with all East, South, North and West Boston—which is to say Chelsea and Cambridge—on the opening night of the show. This is an established custom. Judging by appearances on last Saturday night, the population of the greater city has been considerably increased within the year. It is a matter of record that breathing space was almost at a premium a year ago. This year it was unobtainable at any price. A mild-mannered local newspaper set down the attendance at 10,000 people. To one wedged into the throng in the middle of the evening, this would have seemed a gross and unwarrantable underestimate of fact. But this much must be said, that there was less of rowdyism than sometimes has been the case, and that most of the rubbing elbows were amiably inclined, so that the affair wes not seriously unpleasant.

Of exhibits of an especially conspicuous nature, aside from the handful of new cars, there are few which are really remarkable.

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The annual appearance of the rotary steam engine is a factor to be reckoned with in this instance, to be sure, because the type presented—the Harriman—aside from the fact that it has the endorsement of a number of tests which have seemed to indicate that it possesses brighter prospects for success than many of its predecessors, also is of interest in that its inventor plans to adapt it to the purposes of the internal combustion motor. At present, however, it is shown in compound steam form and in a 5 horsepower unit, operating under its own power. Another exhibit, which is of some little importance from an educational standpoint, is that of a working model of the Burleigh motor, which comprises a section of the cylinder, with the piston shown in motion and traveling over a ground glass plate. Colored lights behind the plate, automatically regulated, reveal not simply the different periods of the cycle by their color and intensity, but also the supposed distribution of the flame in the cylinder during the firing and exhaust intervals.

Touring the aisles, the visitor encounters practically all the names which have become familiar at the other shows. For example, in Grand Hall there are the White, Oakland, Pennsylvania, Stoddard-Dayton, Pierce, Studebaker and E-M-F., Mitchell and Franklin stands. The Exhibition Hall reveals the presence of the Rambler display, as well as those of such other well known marks as the Columbia, Pope-Hartford, Marmon, Locomobile, National, Maxwell, Brush and Matheson. In Talbot Hall are displayed among others, the Waverley electrics and the Pullmans. The basement is given over principally to the display of commercial vehicles, motorcycles, of which there is a very creditable showing arranged in a single section; and machinery.

Boston's offering in new cars, while not numerous, is significant of the present sweeping movement in the industry in that it is composed entirely of medium and low priced machines. To be sure one or two makers already known in the Hub and elsewhere, are in evidence with larger cars, but with one noteworthy exception, the new cars by new makers are of the popular order. These with such cars as the Brush, the Maxwell "Junior," the Ford and one or two others might be taken as indicating a recrudescence of the one-time exceedingly popular low priced runabout, which for several years has been studiously avoided by the manufacturers. Indeed, it may be considered as a legitimate and logical development of the multiple production idea which is so widely entertained just at present. However that may be, the small and medium sized new-comers in Boston are entitled to special consideration in several instances because of their high class equipment.

In many respects the most remarkable of these is the Hupmobile, which though listed at a minimum figure and built to diminutive specifications has all the features and linear attributes of a full sized car, together with several original—not to say, radical—components. This brand new product of the Hupp Motor Car Co., Detroit, Mich., is shown for the first time at one of the "big" automobile expositions.

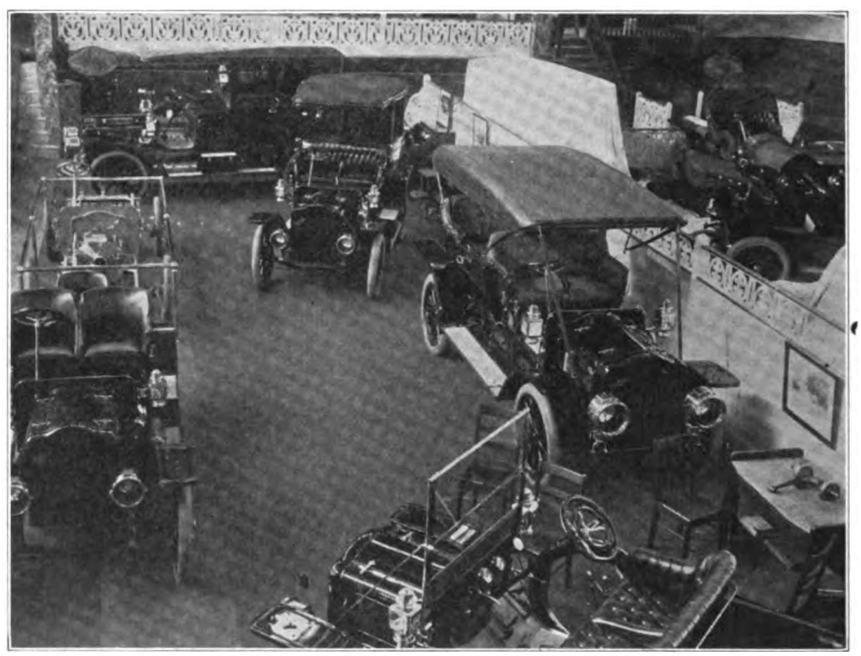
Built with a weight-power ratio of nearly 2 horsepower per hundred pounds, and with such of the features accepted in standard high-class practice as quadruple, vertical motor, unit power plant, selective sliding change gear, shaft drive, it is further characterized by its makers as "the only car listing at less than $1,000 equipped with sliding gears. The only car listing at less than $1,200 with magneto as regular equipment. The only car listing at less than $1,500 having sliding gears and Bosch magneto as regular equipment."

The motor, which is water cooled and rated at 16-20 horsepower, has the favorite offset crankshaft, a fan-bladed fly wheel mounted on the forward end of the crank shaft, and measures 3¼ by 3⅜ inches cylinder dimensions. Together with the gear box, which is unusually compact, it is mounted on a pair of inverted arch members set transversely from the main frame at the front and rear of the crank case. The clutch, which is fully enclosed by the gear housing, is of the plain cone, metal to metal type, self-adjusting, and running in oil. A peculiarity of the gearset is its method of actuation which, though selective, is secured with a "T" quadrant instead of the usual gridiron form. In consequence, high and low speeds are obtained merely by moving the gear lever forward or back to the limit of its travel. To obtain the reverse it is only necessary to pull the lever inward from its neutral position.

Another original feature is the method of suspension, which is semi-elliptic in front, while in the rear, the chassis is supported by a single transverse spring. This member is secured at its center to the U-shaped cross member at the back end of the frame. Its two extremities are slidably mounted on a round cross bar reaching from end to end of the axle, and supported at either of its extremities by an arm affixed to the axle tube. A forward extension from each of the arms, is connected to one of the two diagonal cross braces which run from the axle to the front end of the torque tube. Double internal expanding brakes are employed, these and other features being practically the same as would be used on a larger machine save in detail arrangement, such as is required in instances like that of the steering group, where to economize road clearance, the steering rod is carried over to the left knuckle between the spring and the ground, instead of under the frame, as is more frequently done.

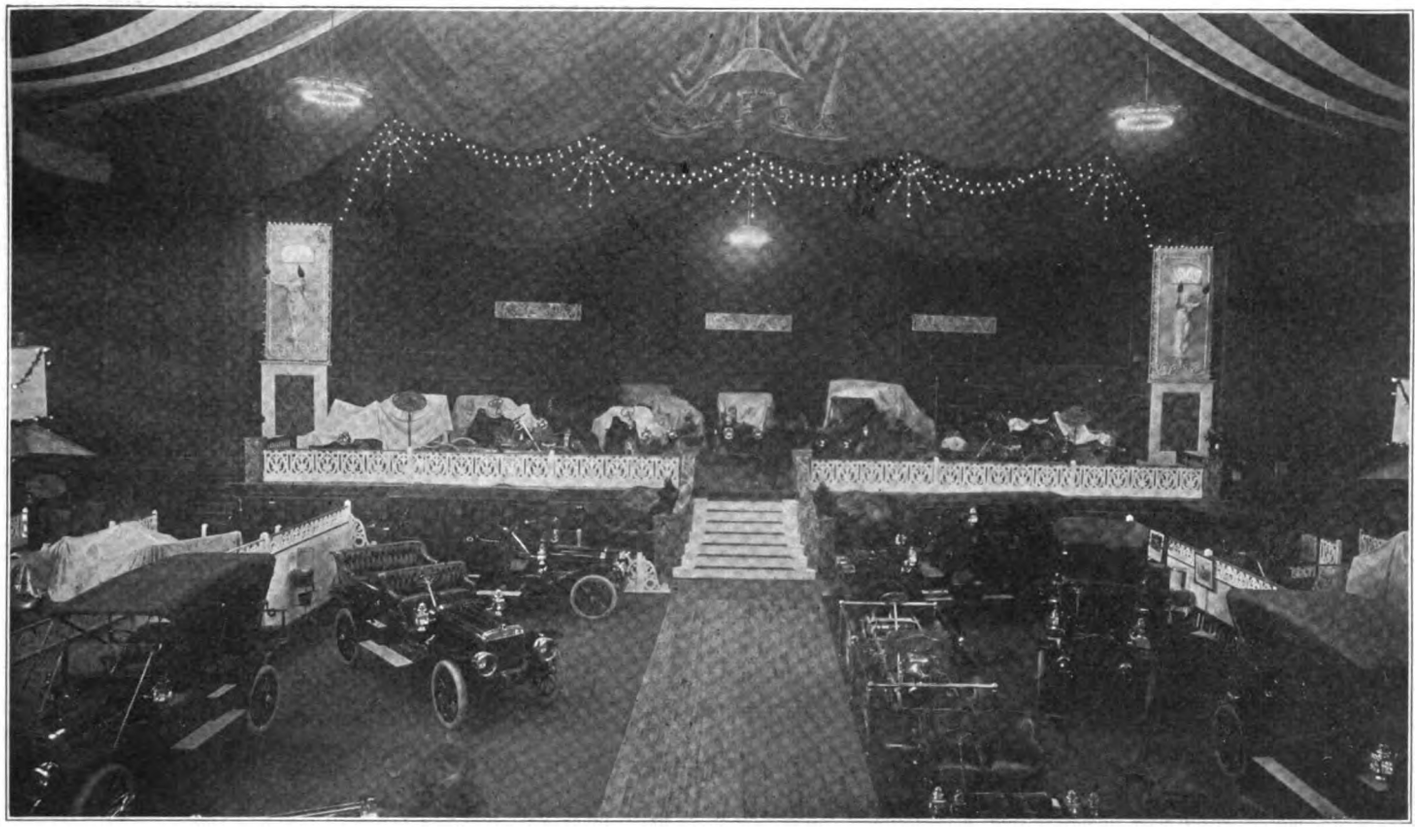
Included in the remaining specifications are the wheel base, which is 86 inches, the wheel sizes, which are 30 inches front and rear, and the tire dimensions, which are 3 inches. The weight of the complete vehicle, including full equipment, is 1,100 pounds.

Another of the newcomers which properly belongs in the same general class as the last-named machine, but which is possessed of quite different characteristics, is the Pickard, which, though appearing under a name practically unknown to the motoring public, is produced by a firm which for a number of years has been building many of the parts from which other cars have been constructed. In this way, it is by no means an untried product, though nominally a new one. In addition to the advantages of its low price, it features such characteristics which are usually found only on higher-



WHITE EXHIBIT IN GRAND HALL

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VIEW OF STAGE IN GRAND HALL, SHOWING LIGHTING EFFECTS

priced cars, as the high tension magneto ignition system, selective sliding gear, and shaft drive.

The motor, which is of the air-cooled type, and of four-cylinder, vertical construction, is a little out of the ordinary in that the valves, which are placed on opposite sides of the cylinders, are set horizontally, and worked by long rocker arms directly actuated from the cam shaft, as in another type of machine, the motors for which formerly were built by the same firm. Liberal use of extended radiating surface in the cylinder and manifold flanges afford ample cooling facilities while these are assisted by the usual fan, which is mounted on ball bearings and belt driven. The cylinder dimensions are 4 inches bore and stroke, and the rated horsepower, 25.

The change gear group is mounted immediately behind the motor, and is controlled by a single pedal—also connected with the contracting brakes on the rear hubs—and a single side lever, so contrived as to do away with the gridiron segment, despite its selective operation. A method of interlocking pedal and lever linkages serves to prevent abuse of the gears. The wheel base of the car is 100 inches, and its tire equipment 30 by 3 inches. Evidences of a desire to furnish an unusual amount of car endurance per dollar invested, in addition to the features already mentioned, are found in the use of a manganese bronze front axle, full-elliptic springs all around, ball bearing rear axle mounting and a general substantiality, which is evidenced in the general set-up of the vehicle where considered as a whole.

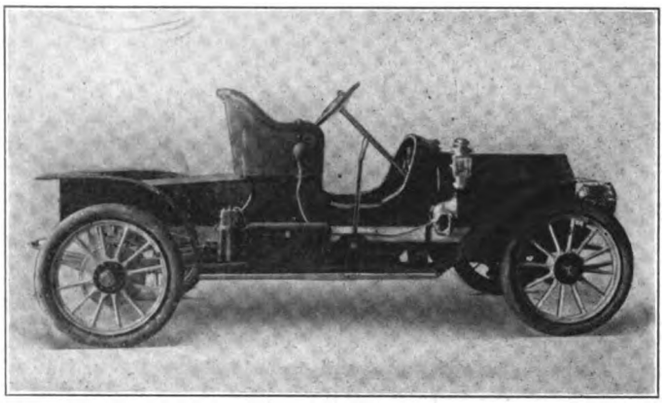
Efforts to produce cars at lower prices than heretofore, yet without sacrificing in any way the general form of the just now popular runabout, are by no means confined to the medium-priced range of machines, about which so much is heard, nor to the small number of attempts at producing a complete and thoroughly equipped car on a small scale. They have invaded the field of the toy vehicle, and in addition to the one example of that class of car, so far as gasolene propulsion is concerned, which has been seen at the shows during the present season. Boston also boasts another, which comes very close to it, though on the practical rather than the impractical side, so far as the intentions of its makers are concerned.

The machine in question, which is known as the Panther, is an entirely new product of local ingenuity, and while in price and size fulfilling the general requirements of the toy gasolene car, is really intended to serve a useful purpose as a runabout for general service. It is built in the simplest manner conceivable and may be characterized as having been "boiled" down to the absolute elimination of all superfluities. It runs on wire wheels, has the typical runabout type of body seating two persons, is equipped with a vertical motor mounted in front, and is controlled by the usual lever and pedal devices.

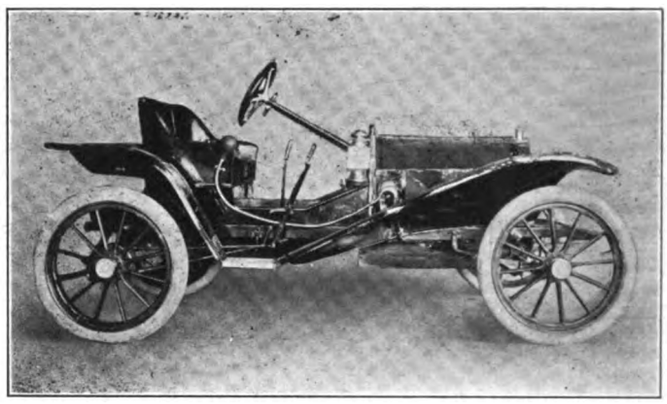
Its simplicity has been secured, first of all, by the adoption of a single cylinder motor, water cooled, but otherwise free from complications of any sort, and second, by the practical elimination of what is known to those familiar with garage technicalities as the transmission. That is to say, the motive power is transmitted through a disc clutch to a solid propeller shaft, from which the live rear axle is driven through bevel gearing. No change gear is provided, and no reverse, though one may be attached at the option of the purchaser. Speed control, therefore, is confined to whatever clutch slippage may be obtained on starting and to the regulation of the 7-8 horsepower motor. Simplicity is further obtained by the elimination of the usual differential balance gear, and the substitution for it of a simple clutch system applied to each of the rear wheels. In front, the axle is swivel mounted, and steering control is established through the use of a small chain running over a sprocket at the base of the steering column and gripping the steering knuckles. The total weight of the vehicle is 340 pounds, and it runs on 28 by 2¼ inch tires.

Considered from the viewpoint of average practice, two of the offerings of new cars presented at the show must be considered of peculiar interest, because they fall into the popular price range for cars fully equipped to carry four or five passengers, and also because they are apt to become associated more or less closely in the average mind from the fact that both represent the efforts of a single designer, though one only to the extent of utilizing a motor of his design.

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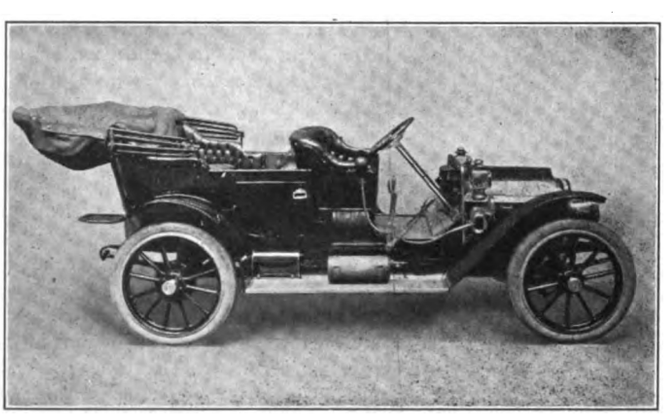
PICKARD RUNABOUT



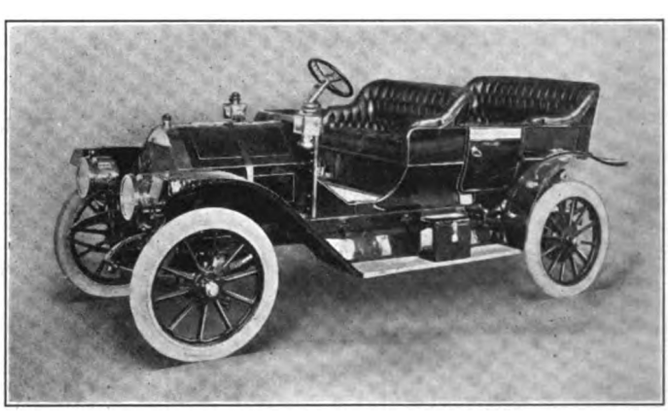
HUPMOBILE RUNABOUT

The machine in question is the new Velie, a brand new product of a brand new factory in Moline, backed by interests heavily concerned in the implement and vehicle trade of Illinois. That the Velie employs the Herreshoff motor, which is built in Connecticut, could not possibly tend to any confusion were it not for the fact that the same name just now is coming into prominence through the simultaneous introduction to the public of another and entirely distinct machine, and represents a later effort of the same drawing pencil.

The Velie is a particularly neat and attractive looking machine in which, despite its comparatively small size, an unusual amount of seating room is provided by the adoption of a particularly wide seat design for the tonneau. Happily this is done without sacrificing of consistency, so that the general appearance of the car as a whole, is made to correspond pretty closely with that of the average car of perhaps double the horsepower and size. Although uncovered within a few days at one of the local shows in the West, it comes to Boston as an entirely new thing and enjoys the conspicuous position which all novelties invariably claim.



HERRESHOFF TOURING CAR



VELIE TOURING CAR

Some idea of the general make-up of the car may be obtained from these specifications: Motor, 4 inch "square" cylinder dimensions, rated output 30 horsepower, cylinders cast in pairs; transmission by three speed, selective gearset and propeller shaft; Timken, one-piece, pressed steel rear axle, single-piece I-beam axle in front; springs, three-quarter elliptic, rear and semi-elliptic, front; wheels, 32 and 34 inches diameter, wheel base 110 inches. The Splitdorf magneto is used in connection with the double ignition system employed, and a storage battery also is furnished as a regular item in the equipment list. Two sets of plugs are used, the magneto being set on the left side of the motor and the distributor for the coil system, on the right, at the very back of the cylinders, where it is readily accessible and where its driving shaft also is useful in propelling the lubricating pump.

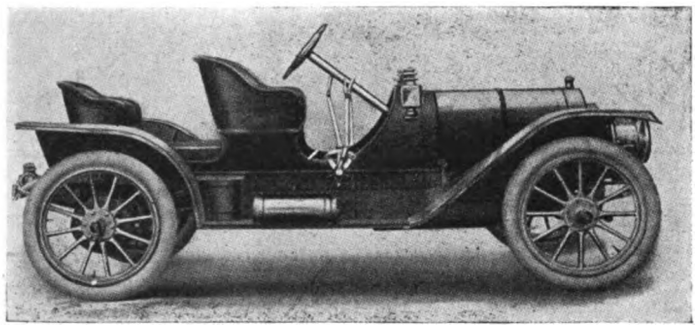
The lower part of the power plant is protected by a dust pan, which is clipped to the sub-frame, forming a neat and secure enclosure and at the same time, one which is readily demountable. In this connection also, mention should be made of the dust deflector at the rear of the body, which is worked into the body panel in practically the same manner as the small locker which in some other machines is placed under the rear seat and opened from behind. Instead of a locker in this instance, however, the apparent extension of the body back of the frame line is merely a metal plate, open below and closed at the ends, thus forming a buffer for the air currents, tending to overcome the swirling tendency of the underdraughts when the car is in motion and thus to reduce its dust-stirring proclivities. The Velie is made in no less than five different styles of body mounting—all of the unenclosed type—and carries an unusually liberal assortment of accessories which are included in the list price of the car.

Under the graphic appellation of "the smart, light cob of motor cars," the Herreshoff makes its first bow to the show-going public at Boston. In truth it is the very compact and neat appearing machine which this characterization implies. Investigation reveals evidences of close design in many points, and of the application of what is considered thoroughly approved standard practice in almost every respect. At the same time, considering the manufacturer's guarantee, of "24 horsepower delivered to the rear wheels," the motor appears surprisingly small and almost insignificant—particularly when compared with those employed by other makers of cars of the same general type and price classifications. The body lines are harmonious and modest, the interior finish comfortable and of approved arrangement and the car as a whole appears to be a worthy accession to its class.

Among its special features may be noted the cylinder dimensions, which are 3⅜ by 3¾, the use of very large valves mounted on one side and actuated by a newly designed system of cushioned lifts which are intended to reduce the clatter of the parts to a minimum, thermo-syphon cooling, double ignition—the latter, however, counting as an extra where the Bosch magneto is used

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in addition to the regular jump spark system with batteries. Another out of the ordinary feature is the use of the progressive type of change gear, which is thought to be more suitable for this type of car than the more familiar selective type. The unit type of power plant is used, which is to say that the gear box is bolted directly to the motor crank case and shares its support. The torque tube system of driving is employed, and the cross frame member to which the tube enclosing the driving shaft is anchored is placed just back of the gear box and well up toward the front of the car, thus reducing the angularity of the universal joint motion to a minimum. The tube with its enclosed universal joint is carried in a substantial ball and socket mounting permanently secured to the cross member, and notable because of its very large diameter, considering the size of the machine. The frame is offset in the rear to permit of the insertion of a rubber buffer to protect the axle from shock—this being rather an unusual adaptation of the offsetting idea. Ordinarily the plan is to offset the frame sufficiently to permit a generous increase in the clearance between it and the axle. But in this instance, the rubber buffer is set flush with the under side of the sill, so that the ungainly effect of the usual offset is eliminated and a perfectly unbroken frame line secured in addition to the advantage secured through the use of the buffer. The transmission is mounted on F. & S. annular ball bearings, and the axles on Timken roller equipment. The wheel sizes are 32 by 3½ inches, and the accessory equipment of high order throughout.

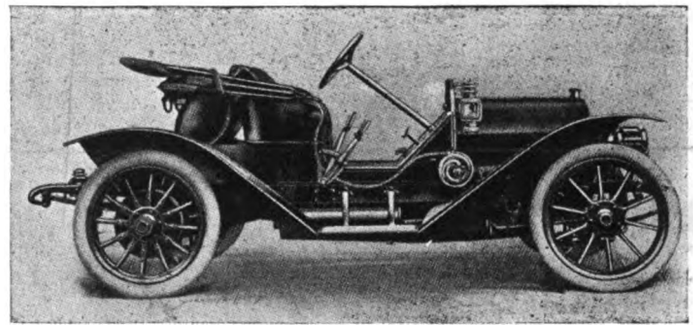


HAYNES—ON PRIVATE VIEW

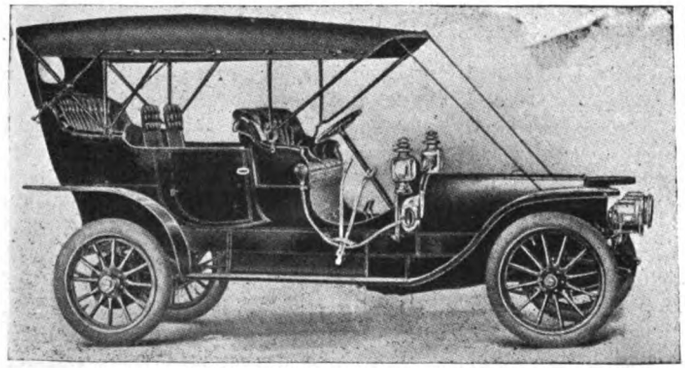
It is a peculiarity of Boston shows that they never fail of being productive of something sensational in the mechanical line. In addition to the invariable crop of later new comers there always is one or another display which is truly revolutionary, radical, puzzling, and at the same time pleasing to the mechanically inclined. One time, it was a car bearing a motor which consisted of eight little cylinders surrounding the crank shaft and with their axes parallel to it, the necessary rotary motion being obtained through the medium of a circular disc which wobbled. But that is a memory now. This year is presented the compressed air system of propulsion in which the transmission of the ordinary type of car is displaced by one two-cylinder air compressor, one four-cylinder compressed air motor, one receiver or storage tank, and a few fittings which may be considered negligable. The effect of the aggregation is to secure in addition to the smoothness of operation of the steam car and the simplicity of control which that vehicle boasts, a saving in weight, a saving in first cost, and a saving in fuel efficiency. The last economy may amount to as much as 35 per cent., according to the representatives of the Compressed Air Power Co., who are on hand to explain the workings of the system.

Although this particular system is something new—so new in fact, that the model on view was barely completed in season to be put into the show—the idea upon which it is based has been advocated before. It is simply that of displacing the inflexible and more or less unwieldy mechanical linkage of the ordinary transmission system by a system employing the advantages of absolute flexibility which the fluid medium, whether it be liquid or gaseous, enjoys. In this instance, however, it is difficult to see just where the saving is effected, in as much as the casual observer is apt to be impressed with the idea that instead of a reduction in complexity there has been something of an increase, and that as compared with the ordinary gasolene vehicle there is a superabundance of mechanism. That, however, may be a result of the hasty development of the system, which, as already explained, is yet in its infancy.

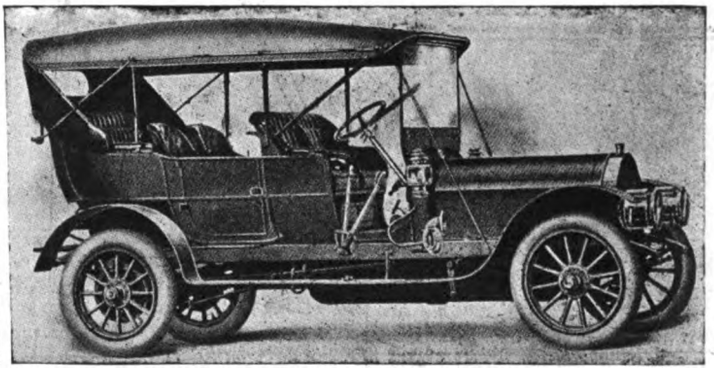
The prime mover of the system is a two-cylinder air-cooled motor with opposed cylinders placed transversely of the chassis, and with its crank vertical shaft coupled to the connecting rods of two compressor cylinders, also opposed to one another, which lie fore and aft of the machine. A turbine type of fan located on the under side of the crank case serves to force a draught over the flanged heads of the gas cylinders, while a further departure from precedent is found in the use of a "regenerator" whereby the air delivered from the compressor is passed through a heater supplied from the exhaust of the gas cylinders, wherein a considerable amount of the exhaust heat is transferred to the air and the efficiency of the system correspondingly increased. From the compressor, the air is delivered direct to a four-cylinder, V-type expansion engine, of the regular steam type, which is mounted in positive relation to the propeller shaft by which the car is driven. Extra advantages accruing from the adoption of the system, as also is explained, are the air whistle and



PALMER & SINGER SKIMABOUT



FRANKLIN TOURING CAR



PIERCE-ARROW TOURING CAR

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tire-inflating connections, which are a natural outcome of the storage of air in the machine.

The Compressed Air Power Co. is noteworthy in that it does not just now contemplate active production under the patents which it controls, but, instead, is preparing to license regularly constituted automobile manufacturers to employ the system in machines of their own construction. Negotiations already entered into are said to have resulted in the determination of one automobile maker to install the compressed air system in five of his cars, while others are reported as taking a live interest in the proposition. Indeed, so sanguine are the promoters of the scheme, that in a little booklet distributed in Mechanics Hall, those interested are urged to write to the compnay stating what kind of a car is desired and at what kind of a price, when the company will forward a list of 25 "leading manufacturers" who will be willing to take the applicant's order, though whether for compressed air cars or others, it is not specifically stated.

In addition to the entirely new presentations at the show, there are several instances of makers already more or less well known in the trade who are bringing out new models at this time, or who have not been present at either of the three great shows which have preceded Boston's supreme effort. Among these is the very latest type of American Napier, which the newly reorganized American Napier Co. is preparing with an especial view to meeting the conditions of American highway service. In addition to the small four-cylinder chassis which is practically the same as has been produced for several years, and which is shown in both roadster and "Nike" type mountings, there is on view a four-cylinder chassis of the latest type, which has just been produced.

This is a so-called "4-40" touring machine, which has a number of points of difference from the parent British car, notably in the construction of the rear axle, and in the manner in which it is coupled to the chassis. It is of the torque tube drive order, the tube itself terminating in a massive yoke which is hinged to a dropped, cross-frame member beneath the gear box, and which allows absolute freedom for the action of the universal joint. Supplementary spiral springs, and the new Bosch system of double ignition with the single, self-starting coil on the dash are other features new to the line and embodied on this particular model. The complete line for the coming year, it is announced, will comprise, in addition to this and the smaller machine mentioned, a six-cylinder, 60 horsepower model, and probably a fourth of 30 horsepower, but also mounting six cylinders, which is under way.

The Grout is another machine which makes its first show appearance for 1909 at this time. In its most recent guise, it is built both in roadster and touring types, which are practically equivalent so far as mechanical features are concerned, but which vary in the position of the control mechanism, the arrangement of the body, in clination of the steering column and in a few other minor respects. In place of the armored wood frame, which during the early days of Grout construction was so rigidly adhered to, the conventional pressed steel construction has been adopted, and in other respects the machine has been brought into line with the accepted standards of current practice. The motor now is rated at 35-40 horsepower, its cylinder dimensions being 4½ by 5 inches; the transmission is by selective change gear and propeller shaft; the wheel base is 116 inches, and the approximate weight 2,660 pounds.

CENSUS OF THE SHOW.

Pleasure Vehicles.

Gasolene:		
One cylinder	3	
Two cylinder	15	
Three cylinder	4	
Four cylinder	178	
Six cylinder	26	
Total Gasolene Pleasure		226
Water cooled	213	
Air cooled	13	
		226
Four cycle	218	
Two cycle	8	
		226
Vertical	209	
Horizontal	17	
		226
Steam		13
Electric		12
Total Pleasure Vehicles		251
Touring cars	130	
Roadster models	82	
Closed cars	34	
Motor buggies	5	
		251

Commercial Vehicles.

Gasolene		27
Electric		7
		34

Chassis.

Pleasure:		
Gasolene	40	
Steam	1	
	41	
Commercial:		
Gasolene	8	
Electric	1	
	9	
Total chassis		50
Total four wheeled vehicles		335

Cycles.

Motorcycles:		
Single cylinder	42	
Twin cylinder	16	
Four cylinder	4	
Tandem	1	
Tricars	3	
Package cars	2	
	68	
Bicycles	6	
Total all cycles		74
Total all vehicles		409

For many years—relatively speaking, of course—Boston has been rated the steam town par excellence, of the country. Consequently the annual show has presented unusual opportunities for studying the various methods in vogue by the steam adherents. This year the contingent is smaller than it has been sometimes, only three exhibits of steam vehicles being apparent. There is, of course, the impressive display of the White machines, in the central block of the Grand Hall exhibits; there is the Lane exhibit in the Exhibition Hall, and there is the Stanley exhibit. Only the latter is making its first show appearance for the year here, and its novelty may be considered a bit impaired at that, for it has already been shown in the West during the present flood-tide of show propogation.

Several improvements are to be noted in Stanley design as compared with the methods employed last year. The same general type of construction is used, to be sure, including the wire-wound copper boiler, the horizontal, twin-cylinder motor, and the general method of mounting and assemblage. At the same time several alterations have been made, as for instance, in the adoption of the new water level indicator, which shows the level in the boiler by means of a gauge mounted on the dash and variously safe-guarded against misadventure. There also is an entirely new model designated as "U," which is equipped with a new, 4 by 5 inch engine, and which, by virtue of the greater expansion facilities which it offers, is thought to be more economical than its predecessor. Model "E2" is continued in improved form, and there also is a large touring car, known as Model "M," which is of 30 horsepower.

Rather an unexpected feature of the show is the strength exhibited in the section devoted to the display of commercial vehicles. Here are found not simply the exhibits of several of the more energetic commercial car builders who visit all the shows, both great and small, but also those of several who are less well known. The section also has been productive of some little novelty, since no less than three of the makers represented have not before appeared this year except at the local shows of smaller size and less prominence. The absolute newcomer of the group, however, is the new A. L. Co. truck, which never before has been shown, despite the fact that it has been under construction for three or four years. On this account, as well as owing to the prestige of its builders, some little curiosity existed prior to the appearance of the machine itself as to what features it would present.

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The particular machine on view, is a 3-ton express wagon bearing the name of the Armstrong Transfer Co., and in chassis, revealing thoroughly standard truck construction. That is to say, the motor is mounted at the very fore part of the chassis, and under the driver's seat, while the transmission is by shaft to the gear box, located in the waist, and by double side chain to the rear wheels. Evidences of careful draughtsmanship in laying down its specifications are not wanting. One instance of particular care which is readily observable is in the independent spring mounting of the radiator whereby it is guarded against unnecessary strains. The engine, which is of the four-cylinder order, is rated very modestly at 16 horsepower when running at 800 revolutions.

Another of the new comers, so far as the present show is concerned, is the Frayer-Miller, which represents the first fruits of the renewed efforts of the Oscar Lear Automobile Co. in its recently adopted policy of concentrating upon the commercial product to the practical exclusion of pleasure cars. Three vehicles are exhibited, one a truck, one a large sight-seeing vehicle, and the third an interesting heavy delivery wagon which, despite a number of novelties in other respects still retains the original type of air-cooled motor.

Still another commercial display which is noteworthy is that of the newly organized Auto-Car Mfg. Co., which displaces the Auto-Car Equipment Co. The change in status also has brought about some little change in the attitude of the company toward the gasolene vehicle, with the result that particular stress now is being laid upon it. Visible results are apparent at the show in the shape of a half dozen machines of various powers and intended for various purposes.

Other displays which go to swell the number of commercial vehicles on view are those of the General Vehicle, Gramm-Logan, Studebaker, American and Rapid companies —the latter, as usual, appearing with the largest number of separate vehicles shown by any maker in the section, and also claiming the distinction of showing the highest powered commercial vehicle in the shape of a monster chassis which is broadly suggestive of locomotive construction in the size and obvious strength of its parts.

To the mechanically trained, Boston's show always possesses a peculiar fascination because the Mechanics Hall is equipped with a permanent source of power and because in consequence, certain enterprising exhibitors invariably are there with things that "go," and going, accomplish something. Thus there is the saw that eats its way through great masses of iron and steel as though they were hard wood, and the grinder that performs its work automatically away beyond the range of human intelligence and to the point where it would seem that having done all his work for him, it ought also to pay off the mechanic and help him on with his coat when his day's work is over. There is the model machine shop running full blast, the exhibit of flexible shafting which after being tied in hard knots continues to transmit power for practical purposes, and last but not least, the highest development of mechanical dentistry, a device which cleans—and sharpens, mind you —the teeth of files.

But when it comes to the attractions offered by way of drawing attention to the particular wares of one exhibitor or another, this year's palm leaf must be given to the oil people. It is hard, they say, for an oil manufacturer to get up a display which will prove successful as an eye-catcher. Hower that may be, they have all been pretty successful this year. In Boston there are more of them than at the other shows—or so it would seem—and this year they have been particularly successful in arranging their displays from the point of view of color. There is the Gargoyle Mobiloil booth, for instance, with its statuesque portals, its illuminated background, and its display of varicolored and instructive liquids in glasses of different sorts. The Underhay, Invader, N. Y. & N. J. and others also make a strong appeal to the passing visitor, while the White & Bagley display is novel in that besides its element of decoration, it also exhibits a portion of the company's laboratory equipment, willing attendants always being at hand to explain the workings of the viscosimeter and the flash pan, as well as the value of the tests which they yield.

Next to lubricants, perhaps the most telling effect produced by the manufacturers and purveyors of ignition supplies who, particularly if they happen to have something like a coil or a plug from which a spark can be drawn, are in a fair way to secure all the attention they covet. Several new things are to be found in this particular contingent, by the way. There is the Winestock plug, for instance, which is a plug within a plug, built of brass and so contrived that it can be removed from the shell for testing purposes by a mere twist of the wrist, and without the necessity of disconnecting the lead. Furthermore, this particular plug has an annular gap for the spark, which is adjustable, and which possesses non-sooting properties which are held to recommend it very highly. Worcester spark coils, which are also new, possess a number of useful advantages in vibrator construction, in the method of connecting the high tension leads, and in the construction of the switch, which requires no wiring whatever but is connected automatically upon being secured to the outside of the coil box. The Holtzer-Cabot Electric Co., which for years has produced small motors for industrial purposes, now has gone pretty heavily into the construction of automobile ignition apparatus in the production of magnetos, coils, and igniters, while it also displays a useful array of small portable electric driving devices for machine tools. In the Burns Boston Battery & Mfg. Co.'s product is found a primary cell of the liquid type, but perfectly sealed, so that it can neither spill nor evaporate and therefore will last much longer than the ordinary cell of either of the common types, in consequence of which it is recommended as a standby where the dry cell would not be available because of its tendency to deteriorate if allowed to stand too long. The Hermatic battery case which A. S. Morse Co. shows, is both a water-proof housing for the battery and a system of plastic packing. Its efficacy is attested by the display of one of the cases reposing in a glass jar of water and furnishing current for a snappy little dancing spark which draws the attention to the exhibit. As is the case with most other coil makers, the Federal Mfg. Co., lays considerable stress on the construction of the vibrators employed on its Bliss coils, which are claimed to be both fool-proof and durable besides having a quality of workmanship which is possible only in expensive goods.

Boston's own quota of speed indicating devices, naturally is on hand with something to show. There are the National, Casgrain Loring, Star, and others, for example, in addition to the Jones, Stewart, Warner and others, which have been "on the road" all through the present show season. Shock absorbers, too, are much in evidence, among the Gabriel, Hartford, Kilgore and other lines being found one or two, which have not been seen before. This is true of both the Boston Shock Absorber, which is shown by the Knapp-Greenwood Co., and which is of the hydraulic piston type; and the Monarch, which is a friction system depending upon the pressure of a spring-actuated plunger upon a graduated cam surface.

Shock absorbers lead to tires, and there are several new comers here, even, as the tires of the Shawmut Tire Co., which are fabricated by a special process claimed to be of especial advantage in preserving the durable qualities of the rubber as well as its full elasticity. The non-puncturable inner cases produced by the Atlas Rubber Co. possess that virtue by reason of the fact that they have a certain amount of steel armor incorporated in their make-up. Federal tires, though made in Milwaukee, are exhibited by the Standard Tire and Rubber Co., New England agents, and are shown in a variety of styles. Besides, of course, there are the regular show attendants in the tire line: Hartford, Diamond, Continental, Michelin, Ajax, Empire, Firestone, G J, and that continual source of wonder to the untoutored visitor, the Dow, into which endless quantities of nails continue to be driven to the perpetual delectation of the crowd.

Tire helps abound, like the new Standard Combination motor rim, an expansible and contractible device which by simple means is made to grip the wheel rim with

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VIEW OF SECOND FLOOR WHERE ACCESSORIES HOLD SWAY

tremendous force, or to release it absolutely according to the manipulation of a special form of key which goes with it. Of course, tire accessories are present in abundant variety, while such other tire helps as Supplementary Spiral Springs, Sager Equalizers and the various other spring devices are regarded as of due importance by the showgoer. For the motorist who is anxious to rid himself entirely of the pneumatic tire, there is the Seaton spring wheel—a brand new "wheel within a wheel."

Materials, manufactured in various degrees are well represented, among the newcomers to be observed in this class being the Lebanon Steel Casting Co., with plausible arguments as to the advantages of their own methods of carrying on the work of the steel foundry; and the Rhineland ball bearings, which are of the annular type, produced in a very wide range of styles, and as made for very light loads, distinctive in that pressed steel races are employed in the thrust type.

The complete list of the exhibitors and their wares is as follows:

AUTOMOBILES.

Algonquin Motor Car Co.—Oldsmobile and Columbia electric.
Allen Kingston Motor Car Co.—A-K and Rockwell cabs.
American Auto Co.—American.
American Simplex Co., of Boston—American Simplex.
Anderson Carriage Co.—Detroit electric.
Austin Auto Co.—Austin.
Auto Car Mfg. Co.—Commercial.
Bailey & Co., Inc., S. R.—Bailey electric.
Boston Motor Co.—Acme.
Bowman & Co., J. W.—Stevens-Duryea.
Buick Motor Co.—Buick.
Butler Motor Car Co.—Rapid, Cleveland and Pierce-Racine.
Chase Motor Truck Co.—Chase.
Compressed Air Power Co.—C. A. P.
Crown Motor Car Co.—Glide.
Curtiss-Hawkins—Speedwell and Chadwick.
Dodge Motor Vehicle Co.—Pope-Hartford and Waverley electric.
Dunham, Geo. J.—Royal Tourist.
Eaton, Chas. A.—Lambert.
Farrow, Henry F.—Grout and Hupmobile.
Fiat Auto Co.—Fiat.
Ford Motor Co.—Ford.
Franklin Automobile Co.—Franklin.
French Carriage Co.—Pullman and Herreshoff.
Fuller, Alvan T.—Packard and Cadillac.
General Auto Co.—Holsman.
General Vehicle Co.—General.
Gramm-Logan Motor Car Co.—Gramm-Logan.
Hol-Tan Co., The—Lancia.
Jackson Automobile Co.—Jackson.
Jenkins & Co., W. M.—Mitchell.
Jeffery & Co., T. B.—Rambler.
Jewell Motor Car Co.—Jewel.
Kilbourne-Corlew Co.—Velie.
Kissel Kar Co.—Kisselkar.
Lane Sales Co.—Lane steamer.
Linscott Motor Co.—Reo, National and Overland.
Locomobile Co. of America—Locomobile.
Lowe, Geo. H.—Pennsylvania and Regal.
Malden Centre Garage—Middleby.
McCue Co., The—McCue.
MacAlman, J. H.—Columbia and Stearns.
MacVichie, Donald—Car De Luxe.
Maguire Co., J. W.—Pierce-Arrow.
Matheson Auto Co.—Matheson.
Maxwell-Briscoe-Boston Co.—Maxwell.
Mora Motor Car Co.—Mora.
Morse & Co., Alfred Cutler—Renault.
Neale, A. F.—Baker electric.
Nichols & Co., D. P.—Frayer-Miller..
Oakland Motor Car Co.—Oakland.
Palmer & Singer—P. & S.
Panhard & Levassor—Panhard.
Panther Car Co.—Panther.
Park Square Auto Station—A-L-Co. and Stoddard-Dayton.
Peerless Motor Co.—Peerless.
Premier Boston Depot—Premier.
Reed-Underhill Co., The—Knox.
S. M. Supplies Co.—Inter-State.
Sampson Mfg. Co., Alden—Sampson.
Schacht Mfg. Co.—Schacht.
Smith, Fred S.—Autocar, Apperson and Oakland.
South End Motor Car Co.—Brush, Pickard, Cameron and Atlas.
Stanley Motor Carriage Co.—Stanley steamer.
Stanley Webster Co.—Pittsburg Six.
Studebaker Bros. Co., of New York—Studebaker and E-M-F.
Waugh Co., Chas. W.—American and Commercial trucks.
Welch Motor Car Co.—Welch.
White Co., The—White steamer.
Whitten-Gilmore Co., The—Thomas and Chalmers-Detroit.
Winton Motor Carriage Co., The—Winton.
Wing, F. E.—Marmon.
Zust Import Co.—Zust.

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MOTORCYCLES.

American Motor Co.—M-M motorcycles
Aurora Automatic Machinery Co.—Thor motorcycles.
Auto-Bi Co.—Greyhound motorcycles.
Consolidated Mfg. Co.—Yale-California motorcycles.
Crouch Motor Co.—Crouch motorcycles.
Curtiss Mfg. Co., G. H.—Curtiss motorcycles.
Excelsior Supply Co.—Excelsior motorcycles.
Harley-Davidson Motor Co.—Harley-Davidson motorcycles.
Hendee Mfg. Co.—Indian motorcycles.
Merkel-Light Motor Co.—Merkel and Light motorcycles.
Minneapolis Motorcycle Co.—Minneapolis motorcycles.
New Era Gas Engine Co.—New Era motorcycles.
N. S. U. Motor Co.—N. S. U. motorcycles.
Ovington Motor Co.—F. N. motorcycles.
Pierce Cycle Co.—Pierce motorcycles.
Reading Standard Co.—R-S motorcycles.
Reliance Motorcycle Co.—Reliance motorcycles.
Walton Motor Co.—Midget Bi-Car.

ACCESSORIES.

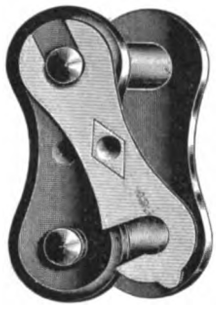
Aetna Life Insurance Co.—Liability insurance.
Ajax-Grieb Rubber Co.—Ajax tires.
Allen Auto Specialty Co.—Tire jackets and specialties.
Allen Fire Department Supply Co.—Two-port carburetters.
American Storage Battery Co.—Accumulators.
Angier Co., The—Supplies.
Atlas Rubber Co.—Non-puncturable inner cases.
Atwater-Kent Mfg. Co.—Ignition systems.
Atwood-Castle Co.—Lamps.
Auto Improvement Co.—Ever Ready Speed Indicators.
Badger & Sons Co., E. B.—Hoods, tanks, fenders and piping.
Batavia Rubber Co.—Tires.
Bi-Motor Equipment Co.—Supplies.
Boston Auto Gage Co.—Triumph tank gauges.
Boston Tire & Rubber Co.—Dayton Airless Tires.
Boyd, F. Shirley—Supplementary Spiral Springs.
Bowser & Co., S. F.—Fuel and oil storage systems.
Burns Boston Battery Mfg. Co.—Sealed liquid batteries.
Champion Ignition Co.—Ignition supplies.
Chandler & Farquhar Co.—Machine tools and supplies.
Chase & Co., L. C.—Top and cover materials.
Clayton, F. T.—Clayton non-blowout tire valves.
Coates Clipper Co.—Flexible shafting.
Coes Wrench Co.—Wrenches.
Colgan Co., J. W.—Monograms.
Columbia Lubricants Co., of New Jersey—Lubricants.
Columbia Vehicle Tire & Top Co.—Tops, tire cases and covers.
Commonwealth Rubber Co.—Mitchell puncture-proof tires.
Connecticut Oil Co.—Lubricants.
Connell, W. J.—Supplies.
Continental Caoutchouc Co.—Continental tires.
Coward, J. D.—Star Speedometer, E. & M. wind shields.
Cramp & Sons Ship & Engine Building Co., Wm.—Bronze castings.
Couch & Seeley—Casgrain speed indicators.
Diamond Rubber Co.—Diamond tires.
Dixon Crucible Co., Joseph—Graphite lubricants.
Dover Stamping & Mfg. Co.—Drip pans, funnels and measures.
Dow Tire Co.—Dow non-deflatable tires.
Downing, C. J.—Horns, tire fittings and holders.
Duren & Kendall—Vacuum cleaner.
Eagle Oil & Supply Co.—Lubricants.
Eastern Carbon Works—Dry batteries.
Edwards, O. M.—Wind shields.
Electric Storage Battery Co.—Accumulators.
Empire Auto Tire Co.—Empire tires.
Empire Sales Co.—Strang spark plugs.
Federal Mfg. Co.—Rex ignitors and Bliss coils.
Firestone Tire & Rubber Co.—Firestone tires.
Fisk Rubber Co.—Fisk tires.
Flentje, Earnst—Shock preventers.
Ford Co., Percy—Specialties.
G & J Tire Co.—G & J tires.
Gabriel Horn Mfg. Co.—Exhaust horns and cutouts.
Gilbert & Barker Mfg. Co.—Storage tanks.
Goodrich Co., B. F.—Goodrich tires.
Goodyear Tire & Rubber Co.—Goodyear tires.
Gordon Auto Supply Co.—Supplies.
Gray & Davis—Lamps.
Hall Sectional Tire Co.—Tires.
Harriman Bros.—Rotary engine.
Harris Oil Co., A. W.—Lubricants.
Hartford Rubber Works Co.—Hartford tires.
Hartford Suspension Co.—Truffault-Hartford shock absorbers.
Harvey Co., Arthur C.—Metals.
Hasselkus, W. M.—Rhineland ball bearings.
Havoline Oil Co.—Lubricants.
Haws, Geo. A.—Lubricants.
Heinze Electric Co.—Ignition systems.
Hillman Auto Supply Co.—Supplies.
Hisey-Wolf Machine Co.—Hisey portable electric drills.
Hoffecker Co.—Speed indicators.
Holtzer-Cabot Electric Co.—Ignition systems and portable electric tools.
Hopewell Bros.—Tire casings.
Hoyt Electrical Instrument Works—Current indicators.
Hume Carriage Co.—Bodies, tops and robe racks.
Huse & Co., W. D.—Burleigh 2-cycle motors.
Jones Speedometer—Jones speed indicators and speedometers.
Jones W. Herbert—National speed indicaters.
K-W Ignition Co.—Ignition systems.
Kellom & Co., Chas. F.—Lubricants.
Keystone Lubricants Co.—Lubricants.
Kidder, Chas. W.—Monarch shock absorber.
Kilgore Mfg. Co.—Shock absorbers.
Klaxon Warning Signal—Electric horns.
Knapp-Greenwood Co.—Boston shock absorbers.
Lavalette & Co.—Eisemann magnetos.
Leather Tire Goods Co.—Woodworth tire treads.
Lebanon Steel Casting Co.—Parts.
Leland & Co., W. H.—Worcester spark coils and grinders.
Loring Auto Appliance Co., The—Speed indicators.
Lovell-McConnell Mfg. Co.—Ignition supplies.
Marine Motor Mfg. Co.—Motors.
Maryland Casualty Co.—Insurance.
Massachusetts Auto Co.—Tire filling.
Michelin Tire Co.—Michelin tires.
Miller, Chas. E.—Supplies.
Monitor Mfg. Co.—Monitor speed recorders and Bemus timers.
Morgan & Wright—Morgan & Wright tires.
Moran, S. J.—Brass fittings and supplies.
Moore-Smith Co.—Fur coats.
Morse Co., A. S.—Battery cases.
Murray & Co., P. A.—Tops.
N. Y. & N. J. Lubricants Co.—Lubricants.
National Battery Co.—Dry batteries.
National Carbon Co.—Dry batteries.
National Tube Co.—Cold drawn steel tubing.
New England Cement Stone Co.—Garage construction.
Nightingale Whistle Co.—Exhaust whistles.
Norton Grinding Co.—Machine tools and abrasives.
Oliver Mfg. Co.—Jacks.
Pantasote Co., The—Imitation leathers.
Parker Mfg. Co.—Standard speedometers.
Pennsylvania Rubber Co.—Pennsylvania tires.
Perfection Wrench Co.—Wrenches.
Pettengill-Andrews Co.—Ignition systems.
Pittsfield Spark Coil Co.—Ignition systems.
Polson, W. F.—Wind shields.
Post & Lester Co.—Supplies.
Proctor Supply Co., G. H.—Republic tires.
Randall-Faichney Co.—B-line grease guns.
Republic Rubber Co.—Republic tires.
Robinson & Son Co., W. C.—Lubricants.
Rubly Mfg. Co.—Tuckahoe grease and oil guns.
Russell Co., T. F.—Accessories.
Rutherford Rubber Co.—Sterling tires.
Sager & Co., J. H.—Supplementary spiral springs, demountable rims.
Salmon & Co., John A.—Monograms.
Sexton Can Co.—Containers and storage tanks.
Shawmut Tire Co.—Tires.
Smith, William J.—Tools.
Splitdorf, C. F.—Ignition systems.
Springfield Portable Construction Co.—Portable garages.
Stackpole Battery Co.—Dry batteries.
Standard Combination Motor Rim Co.—Demountable rims.
Standard Tire & Rubber Co.—Federal tires.
Standard Welding Co.—Parts.
Stromberg Motor Devices Co.—Goldberg carburetter.
Swinehart Clincher Tire Co.—Swinehart tires.
Teel Mfg. Co.—Tire cases, covers and top materials and marine motors.
Travelers Insurance Co.—Insurance.
Underhay Oil Co.—Lubricants.
Vacuum Oil Co.—Lubricants.
Veeder Mfg. Co.—Odometers and tachometers.
Vesta Accumulator Co.—Accumulators.
Voorhees Rubber Mfg. Co.—Tire repair outfits.
Ward & Sons, Edgar T.—Manufactured metals.
Ward and Associates, H. H.—Seaton spring wheel.
Walker Lithographing Co.—Road maps.
Warner Instrument Co.—Autometers.
Winestock Mfg. Co.—Winestock detachable plugs.
White & Bagley Mfg. Co., The—Lubricants.
Whitney Mfg. Co.—Chains.
Witherbee Igniter Co.—Accumulators and ignition specialties.
Wilkinson & Co., A. J.—Machinery and tools.
Worcester Pressed Steel Co.—Pressed steel parts.
Zeglan Bullet Proof Cloth Co.—Non-puncturable fabrics and tire casings.

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NEW DETACHABLE LINK CHAIN

Diamond Design Adapted to Easy Removal and Security in Running—Interchangeable with Riveted Chain.

Detachable features for automobile chains have been the subject of much improvement since the first requirements in this direction were observed, the latest development of the kind being a new detachable link chain produced by the Diamond Chain & Mfg. Co., of Indianapolis, Ind., embodying an arrangement of the parts and a design which is calculated to provide both the quality of easy removal of the links when the user desires it and security in running. As shown in the accompanying illustration, a thin strip steel lock over each outside link slips into a groove around the rivet surface, and turning on one rivet as a center, goes



into place in a similar groove on the other rivet, thus preventing the side bar proper from coming off. The strip itself is locked into position by being slightly warped inward and having at its center an inward projection which snaps into a depression in the side bar. Once snapped into place the strip cannot change its position unless the intentional upward pressure is exerted on the clip at the end. The chain is made of the same materials and with the same accuracy as the well known Diamond riveted chains, with no increase in the price over the latter. The links and parts of both will be interchangeable with each other.

Handbook of Shipping Instructions.

Many matters relating to the shipping of automobiles to foreign countries are made clear in a special automobile edition of "Aids to Shippers," a substantially bound book of about 60 pages, issued with the compliments of the forwarding department of Oelrichs & Co., of New York City, general agents for the North German Lloyd. Five pages are devoted especially to motor cars, giving pertinent information concerning packing, customs, ocean freight, insurance, frontier passes, licenses, consular invoices, and the details of proper shipping instructions. Conversion tables of money, weights and measures are contained in the book, together with considerable text matter setting forth facts and explanations which are calculated to be of great value to either the private owner or the trade exporter.

Catalog that Tells a Story.

Pictures showing views associated with some of the car's more conspicuous victories, such as winning the Vanderbilt cup and the Philadelphia Founders Week trophy, together with photographic scenes depicting the company's product in touring service at home and abroad and in more commercial uses, form an excellent accompaniment to the description of the 1909 models in the handsome 48-page catalog just issued by the Locomobile Co. of America, Bridgeport, Conn. The book, which bears a cover in gold and colors, is the company's eleventh annual edition. The new, shaft drive Locomobile "30," and the other models marketed by the company are carefully described, as well as being illustrated in detail by means of line drawings and half tone illustrations.

Aids to Judging an Automobile.

As a specimen of informative rather than merely laudatory literature, "How to Judge an Automobile," a 24-page series of treatises by Ernest Coler, is an excellent example because of the clear and simple way in which some of the more important technical phases of motor car construction are presented. The document shows why three-point suspension, thermo-syphon cooling, unit construction, multiple disc clutches and other important features are incorporated in Maxwell cars, as made by the Maxwell-Briscoe Motor Co., of Tarrytown, N. Y., numerous striking illustrations and diagrams supplementing the text.

Perpetual Guarantee for Spark Plugs.

Perpetual guarantees on spark plugs represent an innovation in the field which both indicates the increased reliability of this important accessory and foreshadow a necessary readjustment of the business to a certain extent. The first manufacturer to promulgate the perpetual guarantee is the R. E. Hardy Co., of New York and Chicago, concerning whose Sta-Rite plugs the announcement is made that whenever returned to the factory at New York they will be made as good as new, no matter how long they have been in use.

Tires That Big Officials Use.

Use of automobiles by official Washington does not give car makers alone the opportunity of "crowing" over the endorsement of their products which purchase implies. Occasion is taken by the Diamond Rubber Co., of Akron, O., to "point with pride" to the fact that Diamond tires are the equipment of the machines used by President Taft, Vice-President Sherman and Speaker Cannon, all of whom employ the automobile as their usual conveyance in journeys in and about the capital.

FOR FIRST AID IN TIRE TROUBLE

The Wiles Tire Sleeve Designed for Quickness of Application—Goes on Without Lacing and Holds Fast.

Jealous always of the reputation of their products, the big tire makers are generally loath to associate their names with minor tire accessories except in instances where the merits of the latter are established, which perhaps explains why it was for a long time left to outside inventors and small factories to produce the tire "sleeves" or emergency protectors, sometimes called manchions. Recently, however, the Diamond Rubber Co., of Akron, O., brought out a "first aid" of this kind, known as the Wiles tire sleeve, which its manufacturers are not averse to standing back of in every way. As shown in the accompanying illus-



tration, the device covers every portion of the tire section above the rim. In spite of the fact that it is put on without lacing and can therefore be applied in an instant, it is claimed that it absolutely will not creep in service. It is intended for tread punctures, but is equally good for a rim or a blowout. The quality of the rubber and the Sea Island fabric used in its construction is calculated to give it the highest degree of wear resistance.

Suit Brought for Inadequate Performance.

Suggestive of the caution that should accompany representations and guarantees as to the capabilities of machines, suit has been brought against the Fritchle Automobile & Battery Co., of Denver, Colo., makers of electric vehicles, for the recovery of $4,000 damages, on the allegation that two of the company's cars did not come up to the requirements of the contract sale. In the complaint it is set forth that the plaintiffs purchased two machines, at $2,000 each, on the guarantee that the cars would run 80 miles on one charge and that the batteries would last at least 5,000 miles. It is charged that the cars are defective in workmanship and material; that they would not run more than 40 miles on one charge, and that the batteries were not capable of propelling the cars for 5,000 miles of service. The complainants ask for the return of the full purchase price of the vehicles.

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PRESIDENT TAFT GETS A GARAGE

White House Transformed for New Executive's Convenience—And His Vehicles are the White Type.

Busy as Mrs. Taft has been in rearranging the White House furniture and in altering the details of management in the presidential household, none of the changes that have taken place in the executive mansion itself begins to approach the radical upsetting of former practice that has occurred in the "White House stable," which is really no longer a "stable" in the usual sense, but a garage. The change was made with such quickness and completeness as almost to take away the breath of those who were familiar with the one story brick structure on Seventeenth street as the shelter for the horses and carriages of the presidents.



PRESIDENT TAFT'S WHITE STEAMER LEAVING THE GARAGE

In contrast to the enthusiasm over horses and equestrianism entertained by his predecessor, President Taft much prefers the motor car, a preference which he plainly indicated before his election, but which he has since confirmed with even more force than was expected. As a consequence the accommodations provided for the chief executive's vehicles have undergone a prompt conversion to suitability for automobile housing and maintenance. Without doubt the establishment eventually will be made a model one in its features of convenience for keeping the presidential vehicles in constant readiness.

To direct whatever changes might be required to adapt the structure to garage purposes, President Taft selected W. C. Sterling, the Washington representative of the White Co., who found that all the necessary alterations could be made at an expense of a few hundred dollars, the principal item being the installation of a gasolene tank. The establishment will be in charge of George Robinson, who has been detailed from his duties in the war department to drive the presidential White steamer which Mr. Taft purchased for his personal use and which in the accompanying picture is shown starting from the garage to the White House. This, together with two other machines, constitutes a vehicular equipment unlike that enjoyed by any previous president, providing a combination of speed, comfort and safety that will contribute to executive efficiency and benefit.

FARMER'S MOTOR MARKET TRUCK

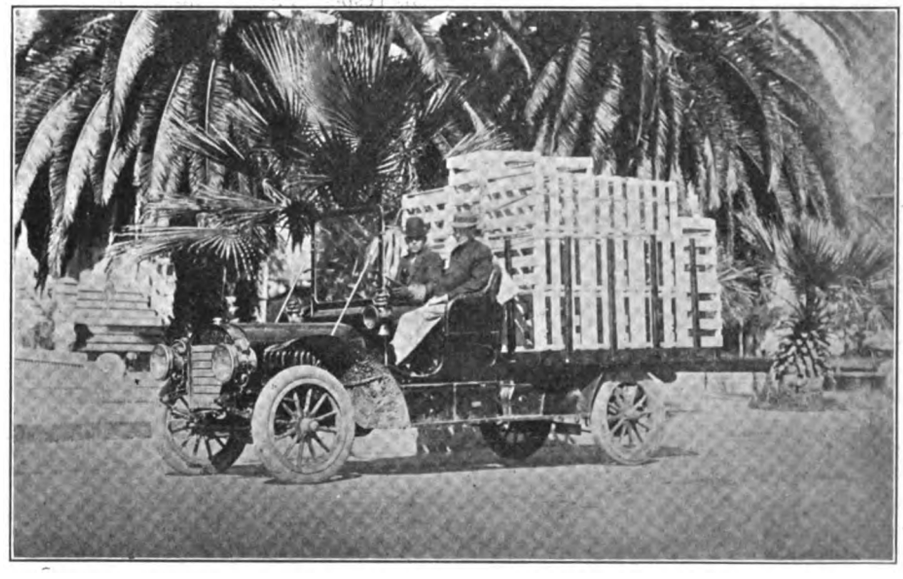
Californian Adopts a Rambler to the Transportation of Produce—Features of a Big Burden Bearer.

Among the many interesting possibilities of the commercial motor vehicle, perhaps none has been given greater prominence during the past year or so than that which will follow its widespread adoption by the agriculturalist. The farmer's car, in fact, that is to say, the machine built especially to satisfy his varied requirements, already has appeared.

Along the San Fernando road, near Los Angeles, Cal., for example, people who get up at daylight frequently see a large commercial vehicle rolling smoothly along with a ton of boxes and crates piled high on the body.

The truck is a Rambler chassis with a special interchangeable body built in Los Angeles. Its owner, J. Q. Adams, of Eagle Rock, has adopted this method of making his morning deliveries of garden produce in that section in preference to the more familiar method. He had been using three wagons to transport his merchandise, but found that in muddy weather there was a great loss of time on the road. The car is "making good."

The machine is a rebuilt touring car with tonneau removed, and frame lengthened 15 inches, thus affording room for a good sized loading platform which is well supported by the 127 inches of wheel base, which the lengthening out process has provided. The power plant comprises a 40 horsepower motor and double chain transmission. The tire equipment includes solid tires on the rear wheels.



CALIFORNIA FARMER'S CONVERTED RAMBLER TRUCK

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LAWS THAT MAY PROMOTE GRAFT

Objectionable Features in Bills Before the Pennsylvania Legislature—Will be Opposed by Motorists.

Two bills now pending in the Pennsylvania legislature are identical in the matter of certain provisions that are regarded as extremely objectionable by the Pennsylvania Motor Federation, which will endeavor to prevent their enactment into law. They are embodied in a clause empowering the commissioners of any county to adopt and prescribe reasonable rules regulating and restricting the use of roads within such county by any means of locomotion and to prescribe pecuniary penalties for violation. These provisions practically empower the commissioners to fix as low a rate of speed for motor vehicles as they may desire, and makes possible the imposition of a fine as high as $100 on conviction of overspeeding. But the especially obnoxious feature of the clause is the provision that "any resident of any county within which the violation of any rule so adopted shall occur may institute and prosecute to judgment and execution an action of assumpsit in any court having jurisdiction in such actions and the amount involved for the recovery of any penalty for the violation of any rule prescribed by the Commissioners, of which penalty the plaintiff shall be entitled to one-half and the county shall be entitled to the other half payable to the county treasurer, who shall add the same to the fund for the improvement of the said country roads."

Basing Taxation upon Bore of Cylinders.

The French government has evolved a new basis for the taxation of motor cars according to horsepower in concurrence with the amendment of the law regarding their assessment. Under the proposed new schedule only the bore of the cylinders is taken into consideration in determining the rating for purposes of taxation, all other dimensions being disregarded. In four cylinder motors a bore of 85 mm. will be considered equivalent to 14 horsepower; 90 mm. 16 horsepower; 95 mm., 19 horsepower; 100 mm., 21 horsepower; 110 mm., 28 horsepower; 120 mm., 36 horsepower, and 130 mm., 45 horsepower. For two cylinder engines with a corresponding cylinder diameter the rating will be halved while a single cylinder motor will be credited with one-fourth the above power. With sixes whose bore is the same as a four, the rating is advanced 50 per cent.

Police Automobile Dream Vanishes.

To save and save and save for an automobile, and then have to turn the money back just as the fund had reached the point where a good car was possible—such is the setback to thrift that has been given the police department of Cleveland, O. By not filling vacancies in the force, over $2,500 was saved in the funds for the fiscal year, and this sum the department planned to use for the purchase of a machine, but the city's law department has ruled that the money must be returned to the general fund, and that if the police department is to get an automobile, it must be by special action of the city council.

New York-Philadelphia Motor Stage.

Automobile service between New York City and Philadelphia has been instituted on a regular schedule, the terminals of the route being the Waldorf-Astoria in Manhattan and the Bellevue-Stratford in the Quaker City. The machine used is a six cylinder Acme limousine, seating five passengers in addition to the driver and having accommodations for considerable baggage. The fare is $15 per passenger, and the time consumed for the trip is from five to six hours, starting at 10 o'clock. A stop of one hour for luncheon is made at New Brunswick, N. J. At present only one car is employed, making the journeys back and forth on alternate days. As the season advances and the expected patronage increases, daily service will be provided in both directions. A further extension of the project contemplates the placing of cars on the route between Philadelphia and Atlantic City.

Parisian Suburb Wars Against Smoke.

In France the emission of smoke from a car means a police summons for the driver. For some time the police of Suresnes, the suburb of Paris, where several motor car factories are located, have been extremely zealous in the performance of their duty in this respect and a highly profitable business has resulted for the courts. As most of the offending cars were stripped chassis taking their "exams" before graduation, the makers regard the many summonses as a persecution. They have appointed a committee to visit the prefect of police and voice their opinions in the matter and request a little more leeway in their cases.

Rochester Club to Have a Banquet.

Business and pleasure will be combined by the Automobile Club of Rochester, N. Y., on the 29th inst.; the annual election and banquet being scheduled to occur on that date. The club has issued a statement to the effect that it has no connection with either of the local automobile shows which are billed to take place this month.

Johnstown Club Holds Annual Election.

The Johnstown (Pa.) Automobile Club at its recent annual meeting elected the following officers for the coming year: C. S. Price, president; John M. Rose, vice-president; W. F. Muddock, secretary; R. G. Rose, treasurer; board of directors, North West, F. B. Cook, J. L. Replogle, T. M. Price, and Dr. F. Schill, Jr.

GRADUATED TAXATION IN VERMONT

Registration Fees Under New Law Determined by Horsepower of Machine—Heavy Tax on Non-Residents.

Vermont has placed upon the statute books of the State a law which may yield an income of $40,000 per year, but is fully as likely to keep out of the State more than that amount of profit for summer business. Before adjourning the legislature enacted the measure, hitherto noted in the Motor World, taxing motor vehicles according to their horsepower. The new law fixes the operator's fee at $2, and the registration fee for a new machine at $1 for each horsepower the first year, 75 per cent. of that amount the second year and 50 per cent, the third year and thereafter, it being necessary to register annually. Non-residents will be permitted to operate machines in the State during a period of not exceeding 60 days upon the payment of $3 for machines of less than 20 horsepower, $6 for machines of less than 40 horsepower, and $10 for those of 40 horsepower and over. There is only one liberal feature about the law, and that is the provision that motorists of other States extending a like privilege to Vermont motorists shall be exempt from the visitors' registration regulation for a period of 10 days. The law was passed through the House early in the session, with little opposition. It met with considerable opposition in the Senate, but was carried through by the agricultural interests.

Cambridge University Restricts Motoring.

Because of the lively automobile exploits of the students, Cambridge university has forbidden the latter from using their motor cars within its precincts except by special license obtained from the tutors and the senior proctor. Cars can only be hired after filling out a special form of registration, subject to approval, and Sunday motoring at the English university is prohibited entirely. Suspension, rustication or expulsion will be applied to students offending, and the automobile dealers of the vicinity have been warned that if they lend aid to evasions of the rules, they will be "discommuned" from university patronage.

Woman's Motoring Too Exhilarating.

On her promise to use street cars instead of automobiles in the future, Mrs. Mary Gessler, of Cleveland, O., has been put on probation by the court, and will not have to go to jail. Her husband complained that she had a mania for automobile rides, to the neglect of her home and children, and that so stimulating and exciting was the speed effect on her nerves that she took recourse to more than liberal quantities of champagne, resulting in his having her arrested on a charge of special intoxication.

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REVISING LAW IN CONNECTICUT

Legislative Committee Gives Extended Hearings on Proposed Amendments—Features of Some Important Bills.

In a series of hearings which occupied three days, March 3 to 5 inclusive, the committee on roads, bridges and rivers, of the Connecticut legislature, had an opportunity to consider automobile legislation from nearly every point of view. The hearings were held at Hartford and were very largely attended by representatives of motoring organizations, unattached motorists, farmers, business men and the general public. The views expressed were widely divergent, but there was much sentiment in favor of the existing law, the main criticism of the present situation being that there is laxity in the enforcement of the law as it stands. Of several bills that were considered, perhaps the most important was one introduced by Senator Heineman, of Meriden, which provides for the appointment of a commissioner of motor vehicles by the governor for a term of two years at an annual salary of $2,000. This bill provides that public examinations shall be held in the various cities and towns in the state once a year. At such times applicants for license shall appear in person and be examined as to their moral character, etc., and if they are 21 years of age, have a good practical knowledge of motor vehicles and possess sufficient skill and ability to properly operate a car, a license to operate shall be issued to them for a period of one year. The commissioner is to have an office at the Capitol, make annual reports to the governor, etc. The commissioner, under the bill, will have the authority to revoke licenses for gross negligence or repeated violations of the law. Such revocations may be nullified at the expiration of 30 days. The original fee for such examination is placed at $5, and $3 for renewal. To the commissioner is also given the enforcement of the speed law, and other particulars.

A second bill, fathered by Senator Peck of Stamford, changes the present law in several particulars. It would prohibit any person under 18 years of age driving a car, even though accompanied by a licensed chauffeur. It also provides for the revocation of licenses upon conviction of violation of the law, and puts teeth into the present law covering this feature. It reduces the speed at which automobiles may be driven within city or borough limits to 12 miles an hour, and expunges the present one-eighth of a mile provision. It provides that an operator upon approaching a trolley car discharging or taking on passengers shall reduce the speed of his machine, but does not provide that it shall be stopped.

A third bill amends Section 14 of the present law by authorizing local officials to set apart certain sections of highway for a specified time for speed contests. The fourth bill deals wholly with registration fees, and provides for these increases: Less than 20 horsepower, from $3 to $6; from 20 to 30 horsepower, from $5 to $10; over 30 horsepower, from $10 to $20.

Declares the Automobile a Weapon.

Automobiles are weapons, according to a decision rendered by the Superior Court of Georgia during the last week in February. Sanford Moreland was tried at Jonesboro on a charge of assault with intent to murder with an automobile, which the indictment declared was a "weapon or machine likely to produce death." The facts in the case were that on December 20th last, the defendant was driving a car, belonging to the late Ben L. Jones, from Atlanta to Macon when A. D. Smith's horse took fright at the machine. Mrs. Smith, who was with her husband, alighted from the buggy and attempted to run across the road, but was knocked down and severely hurt. In the trial the prosecution failed to show intent to kill or injure and Judge Roan submitted to the jury only the question of negligence. Moreland was found guilty and sentenced to twelve months on the chain gang.

Fighting Double Taxation in Ohio.

There is strife between the city of Columbus, O., and its automobiling residents, the bone of contention being the question of the city's right to exact a license fee of $7.50, as provided for in a section of the vehicle license ordinance. The Columbus Automobile club, through one of its members, William M. Frisbie, brought a test suit recently on the ground that the city ordinance conflicted with the State law. The club sought to enjoin the city from collecting the fee, and a temporary restraining order was allowed. This order was dissolved by Judge Dillon, of the Common Pleas Court, on the 1st inst., and as a result Frisbie applied the next day to the Circuit Court for a temporary injunction restraining the city from collecting the fee. It was granted and the fight now is transferred to the last named court. It will be carried up to the Supreme Court if necessary.

Fined for Carrying Too Many Tags.

Another of the many issues possible under the Massachusetts automobile laws was raised in the municipal court at Boston on the 4th inst., when Reginald B. O'Callaghan pleaded not guilty to operating a car having numbers not prescribed by the highway commission. It was alleged that the defendant's machine bore, in addition to this year's number plates, one of last year. Counsel for O'Callaghan contended that there was no regulation which compelled the removal of the plates of a preceding year, but Judge Parmenter decided that such an interpretation could not be properly placed on the law and fined O'Callaghan $10, from which the latter appealed.

BARRING THE DOUBLE DECKERS

New York Park Board Excludes Motor Omnibuses from Riverside Drive—Operating Company Opens Legal Fight.

By an order adopted by the Park Board of New York City, vehicles more than ten feet high are barred from Riverside Drive. This order is a solar plexus blow at the Fifth Avenue Coach Co., which is operating 35 double deck motor omnibuses on Fifth avenue and also on Riverside Drive as far as 135th street. These vehicles are 12 feet high and Park Commissioner Henry Smith asserts that they are so high that they injure the low hanging limbs of some of the trees along the drive.

For violation of the rule Eugene Schellenberg, driver of one of the motor omnibuses was arrested on February 15th, and was up for examination in the Morrisania Court on Tuesday, 2d inst. After listening to the arguments of the Corporation Counsel, representing the Park Department, and William H. Page, Jr., who appeared on behalf of the Fifth Avenue Coach Co., Magistrate O'Connor declined to dismiss the complaint and the case will be thrashed out in the Supreme Court.

As against the claim that the vehicles injure the trees, an official of the coach company says: "There is no real danger to the trees (or to the passengers either), as our 'buses are lower than similar vehicles in use on the avenues and boulevards of London, Paris and other European cities, where conditions exist exactly similar to those on Riverside Drive. In one or two sections along our route there are a few trees whose branches extend over the roadway in such a manner that they might brush against the passengers on the upper seats; but all that is necessary would be to prune the trees, which would in no way mar their appearance.

"Instead of doing this, the Park Department want to stop the operation of our 'buses, and prevent thousands of New Yorkers and out-of-town visitors from enjoying, at a moderate cost, a trip over the finest drive in the city. With our new service we expect to carry from 7,000 to 10,000 passengers daily, and it would work not only a hardship on us, but on the public as well to deprive them of the privilege of using the Drive. Not only this, but the sight-seeing 'buses, many of which are quite as high as our 'buses, have used Central Park and Riverside Drive for years without interference, and have never caused any damage to the trees."

To Improve Qualifications of Chauffeurs.

The San Antonio (Tex.) Automobile Club is favoring the passage of an ordinance to require chauffeurs to pass a mental and physical examination.

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RACE ON FOR CAMPBELL TROPHY

Twenty-one Entrants in New York to Boston Endurance Run—Schedule and Rules for the Contest.

The contest for the trophy offered by Chester I. Campbell, manager of the Boston Automobile Show to the winner of the annual New York-Boston endurance run, which is held during the week of the Boston show, will start from Columbus Circle to-day (Thursday), at 6.30 a. m., instead of 8 o'clock, as at first proposed. While fears have been expressed that the contest would result in a race, reports which have come in from entrants who have been over the course indicate that the mid-winter conditions which prevail will preclude the possibility of a scorch resulting. A schedule of 20 miles an hour has been laid down and calls for the completion of the 243 miles in 12 hours and 9 minutes. The rules provide for immediate disqualification of any contestant who is arrested for exceeding the legal limit. Cars which arrive ahead of their schedule will not be allowed to check in before the expiration of their time allowance. For each minute or fraction thereof of tardiness a penalization of one point will be inflicted and 50 points will be charged against contestants who arrive 30 minutes or more late. Cutting out a control will mean disqualification.

In the event of a tie it is provided that the clean score cars may be sent over the course again until a winner is evolved or lots drawn to decide the tie, at the discretion of the referee. An international aspect is given to the contest by the participation of several foreign contenders. The checking stations and times of arrival at each are as follows: New Haven, New Haven House, 10.30 a. m.; Hartford, Heublein Hotel, 12.36 p. m.; Worcester, Worcester Automobile Club, 4.33 p. m., and the finish at Huntington avenue and West Newton street, Boston, 6.39 p. m. Twenty-one cars had been nominated when the entries closed Tuesday, but more are expected to come in at the last moment.

Premier's Disqualification Stands.

Showing a supreme disregard for the authority of the contest committee of the American Automobile Association which restored the Premier car to its former status after it had been disqualified by the Quaker City Motor Club the latter by its recent action has again put the Premier out of the running for first place. This time the sidetrack is beyond all hope of intervention and completely undermines all claims of the Premier to its eligibility to first place. Although the car passed the technical committee's examination at the conclusion of the New Year's Day endurance run with a clean score, no notice was taken of its road record owing to its disqualification, as now is explained. In view of its reinstatement its road record was looked up with the result that the car was found to have passed several checking stations on the return trip away in advance of its schedule. With a penalty of two points inflicted for each minute the car was ahead of time at controls and at the finish the total penalization amounts to 270 points, which is an insurmountable barrier. This action on the part of the club seems to be the last word in this controversy.

Tardy Disqualification of Sharp Arrow.

At this late day, long after all but those who were vitally concerned had forgotten it, the protest filed by another competitor against the Sharp Arrow car which won the Garden City Sweepstakes in the Motor Parkway races last fall, has been sustained by Referee W. K. Vanderbilt, Jr. The protest was filed on the ground that the Sharp Arrow was a specially built car and the wide margin by which it won its event, which was open to stock cars selling between $2,001 and $3,000, directed attention to the size of its power plant. The rules specified that at least ten cars of the competing model must have been previously built and as the Sharp Arrow was a newcomer it was asserted that these conditions had not been complied with, thereby in a technical sense classing the Sharp Arrow as a specially built car. The findings of the referee sustains the contention of the protest and disqualifies the Sharp Arrow, thereby advancing the Knox, which finished second, to first place, and giving the Stoddard-Dayton, which came in third, second position.

Norristown Fixes Dates for Its Run.

At its regular meeting last week the Norristown (Pa.) Automobile Club, which has an endurance run on the tapis for next May, after a spirited discussion between the advocates of both routes, rejected the recommendation of its contest committee to make Wilkes-Barre the turning point of the contest and selected Hagerstown, Md., instead. The event will take place on May 18 and 19, and the night control will be at Hagerstown. The following committee will have charge of the event: William Magee, George Altemus, Sidney Ballard, Oliver F. Lenhardt and Fred Jaquith. The election of officers resulted as follows: John H. Rex, president; Fred Jaquith, vice-president; William Hart, secretary; Earl Wentz, assistant secretary; Lewis E. Taubel, treasurer.

Atlanta Schedules a Hill Climb.

Atlanta's (Ga.) third annual hill climb will be held on the 27th inst. As in the previous cases the course will be laid on the Stewart avenue hill.

"The A B C of Electricity." Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

FAMOUS DRIVER'S CAREER CLOSES

Leon Thery's Death Announced from Paris—Winner of Many Trophies Who Forsook Sport for Trade.

Leon Thery, at one time the most famous automobile race driver in the world, and later a manufacturer of motor cars, died in Paris on the 8th inst. His fame reached its climax in 1905 when he repeated his 1904 performance, of winning both the French elimination trial and the Gordon-Bennett cup race itself. His first race was in 1898, from Paris to Amsterdam, driving a voiturette. In 1899 he competed in the Tour de France, and was classed second to Gabriel in the voiturette class. In the criterium for voiturettes, which was won by Cottereau in the same year, he was also second. In 1900 Thery won the cup for voiturettes on the road from Bordeaux to Periguez, and in 1901 he was fifth in the light car class in the Paris-Bordeaux race. Just before the Paris-Berlin contest he was taken ill, and could not compete. In 1902 he took part in the Paris-Vienna race, had a bad accident in coming down the Arlberg, and repaired his car in a remarkable manner in a single day and finished the race. Toward the end of the same season he won the hill climbing contest at Gaillon and broke the kilometer record for light cars, being the first to make a speed of 120 kilometers per hour. In the Paris-Madrid of 1903 he was fourth in the light car class. Following his two brilliant winnings of the Gordon-Bennett event, he retired to become a maker of cars, in which field he met with modest success. He was 30 years of age.

Death of a Pioneer Inventor.

William A. Austin, who is credited with having invented one of the earliest steam automobiles to be shown in the United States, died suddenly at his home in Winthrop, Mass., on the 7th inst., at the age of 85 years. At the time of the civil war he perfected a steam carriage which was exhibited at various places, bringing him considerable money. Later he devised a steam bicycle, on which he did a mile in 53 seconds in a race against a horse on Long Island.

Another Tangle in the Briarcliff.

Further complications were added to the already well tangled Briarcliff race situation this week by the filing of an application by L. C. Austin for the American Automobile Association with the board of supervisors of Suffolk county for permission to run the 1909 race for the trophy over a course in that county. Representations were made to the solons that the granting of the sanction would result in stimulating business in the vicinity and they appeared to be favorably inclined.

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Studebaker MOTOR CARS

If You Can't Get Good Roads Get a Studebaker-Garford Car

GOOD ROADS CARS AND FAIR WEATHER FRIENDS belong to the same category. Both are plentiful. But friends that can be depended upon in times of adversity or cars that can be trusted to take you through regardless of road or weather conditions are, sorry to tell, as scarce as hen's teeth.

STUDEBAKER-GARFORD CARS ARE FAMOUS for rough road performances. Don't hold many boulevard records. What few track records they do hold were made in twenty-four hour grinds—where stamina counts and where dependability wins.

IF YOU WANT A RACING CAR there are many from which to choose. If you are satisfied with a car that will skim along at a mile-a-minute clip over a smooth macadam road—why, their name is legion.

FUNNY, ISN'T IT, what a lot of sales are made on that kind of demonstration. Not one customer in a hundred would be willing to go on a five hundred mile trip such as would really test a car—and show the superiority of Studebaker-Garfords—and yet everyone knows that many times, during the life of a car, it will be called upon to make such a trip and to encounter the worst possible road and weather conditions.

MOST MEN ARE SATISFIED with a little five mile spin or possibly a fifty mile jaunt over picked roads with an occasional refreshing stop at a roadhouse. What does such a demonstration prove as to the stamina of a car or of its riding qualities? Why, the hardest springs ever made won't tire you in a short ride. But on a full day's trip over rough roads—that's where 55 years of experience in carriage-spring making counts. That's where Studebaker-Garford cars excel.

IF WE COULD ONLY INDUCE every prospective customer to take such a ride as we should suggest is necessary to prove the value of any car, we would save a world of money on demonstrations. Each demonstration would be costly—but every one would result in a sale. There would be no waste. But how many prospective buyers would consent to ride all day on such a trip as the Studebaker-Garford "30" is making this week from Denver to Chicago?

BY THE WAY, WHY IS IT that when a newspaper like the Denver Post wants a car for a strenuous five hundred or thousand mile drive; having dozens to choose from—for it's great advertising—why is the Studebaker-Garford always selected? It's easy. Other cars may—may, mind you—accomplish the task. There's one that will with absolute certainty. And, to avoid the chance of a fizzle that car is always chosen. And it's a Studebaker-Garford.

MANY SALES ARE MADE ON THESE TRIPS. It's the practice of our drivers to take along from point to point any persons interested and who are in the market for a car. It's about the only way we can get prospective customers to take what we call a real demonstration. And no one who has ridden a day or more on one of these strenuous trips ever will consider any other car.

A MAN WHO HAD RIDDEN TWO DAYS through Iowa Gumbo on a Studebaker-Garford car gave expression to the phrase with which this ad begins: "If You Can't Get Good Roads, Get a Studebaker-Garford Car." The millennium of good roads is yet a long way off. When it has arrived there won't be such a difference between Studebaker-Garford cars and a lot of others. But while present conditions obtain there's a wonderful difference.

IF YOU ARE IN THE MARKET for an automobile and you want a car that will prove a dependable friend in foul weather as well as in fair; that will afford you comfort on rough roads as well as on city boulevards; and if, before buying, you are willing to take a ride such as we like to lay out to prove the comparative qualities of Studebaker-Garford Cars and others—just say the word.

STUDEBAKER AUTOMOBILE COMPANY FACTORY—South Bend, Indiana. GENERAL OFFICES—Cleveland, Ohio.

BRANCH OFFICES—New York, Philadelphia, Boston, Chicago, San Francisco, Stockton, Cal.; Sacramento, Cal.; Kansas City, Mo.; Portland, Ore.; Seattle, Wash.; Salt Lake City, Utah; Dallas, Texas; Denver, Colo.

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The Week's Patents.

903,891. Pneumatic Tire. Charles Scheuner, Chicago, Ill. Filed June 12, 1907. Serial No. 378,471.

1. An armored pneumatic tire including a body having a thickened outer portion, provided with an annular recess the side wall of said annular recess having inward extended projections, and an annular armor strip of metal fitting in said recess and having lateral notches engaging said lateral projections, and an annular elastic tread strip fitting upon said armor strip in said recess and having lateral notches engaging said lateral projections.

903,897. Lubricator. Harry A. Sedgwick, Madison, Wis., assignor to Madison-Kipp Lubricator Company, a Corporation. Filed Nov. 23, 1907. Serial No. 403,557.

1. In a pump, a cylinder, a piston working therein free to reciprocate longitudinally and to oscillate about its axis, and provided with a rigid extension, a drive-shaft directly engaging said rigid extension, the engaging surfaces of said extension and shaft being adapted to both reciprocate and oscillate said piston, substantially as set forth.

903,942. Automobile Draft Attachment. Charles J. Zillgitt, Fairmount, N. D. Filed March 10, 1908. Serial No. 420,231.

1. In combination, a ring secured to the drive wheel of an automobile or like machine, a drum provided with hooks to engage with said ring, a clamp acting in conjunction with said hooks to secure the drum to the ring, and a rope or cable co-operating with the drum and adapted to wind thereon to positively move the machine when stalled.

Simplicity

in a typewriter secures durability, ease and efficiency of operation, and increases the speed and accuracy of the work: the

UNDERWOOD

STANDARD
Typewriter



is a Marvel of Simplicify

Yet every part is carefully chosen as the best possible means to the perfect finished product.

There is nothing hidden about the Underwood. The type-bars lying when at rest in a compact segment; the patented guide—all the parts which permit the visible writing—which help, not bother, the operator will be shown you, explained also if you like; but really you'll see for yourself why the Underwood **DOES** endure and why its operation is so easy, quick and accurate.

UNDERWOOD TYPEWRITER COMPANY, Inc.
ANYWHERE

KEMPSHALL NON-SKID TIRES

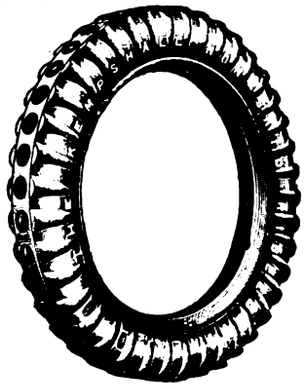
BEST BY EVERY TEST, BECAUSE

1.—They last longest even on heaviest cars; the cheapest tire per non-skid mile on the market, 5,000 to 11,000 miles per tread.
2.—They give perfect immunity from skidding even on the greasiest roads; patented moulded all rubber tread without steel or leather.
3.—They are low pressure tires, minimizing vibration and increasing comfort.
4.—They are freest from punctures and trouble; made from best rubber and fabric, and plenty of them.

The Tire you have been looking for

—

Write for Prices Booklet and Opinions



AGENTS WANTED

WHERE NOT REPRESENTED

CRYDER & CO., 585 Park Ave., New York
Sole U. S. A. Agents

The Kempshall Tire Company, of Europe, Ltd.

THESE TIRES ARE MADE BY
CHAS. MACINTOSH & CO., Ltd., Manchester, ENGLAND

Mailed anywhere for **60 cents** in coin

INTRODUCTORY OFFER

Hemmeter Spark Plugs

Result of two years experimenting with every known plug on the market.

Guaranteed as good as any in the world regardless of cost.

Agents Wanted.

HEMMETER SPARK PLUG CO. 267 Calhoun Street CINCINNATI, OHIO

IF YOU ARE INTERESTED IN **MOTORCYCLES**

The Bicycling World and Motorcycle Review

WILL INTEREST YOU

PUBLISHED EVERY SATURDAY AT
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$2.00 Per Year — Specimen Copies Gratis

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Firestone SIDE WIRE TIRES

WHY IS IT?

—every representative auto show this season, from the Atlantic to the Pacific has gone on record with an overwhelming majority of Firestone Side-Wire tires as its favorite commercial vehicle equipment,

—most of the vehicles now in service have the same tires,

—truck owners who know the vast difference between tire-service and mere tire-talking-points, will have no other.

The answer is found in the unfailing superiority of Firestone tires in the supreme test of actual service.

Firestone Tire & Rubber Co., Akron, Ohio
Branches and Agencies Almost Everywhere.
"The Largest Exclusive Rubber Tire Makers in America."

"THE WORLD'S STANDARD"



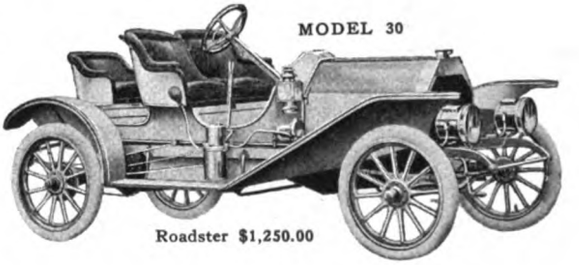
"DOES NOT BELIE ITS NAME"

Perhaps the strongest claim that can be advanced on behalf of the Overland is its extraordinary simplicity. This feature does not apply to any one particular part, but to the whole assembly.

The simplicity of our 4-cylinder motor,
The simplicity of our transmission,
The simplicity of our control,
The simplicity of all adjustments,
are not even approached by any other car to-day.

For the new driver the car is ideal. The experienced driver finds that it fulfils his every requirement and that every defect he has hitherto encountered has been taken care of and corrected.

Write for catalog to



Roadster $1,250.00

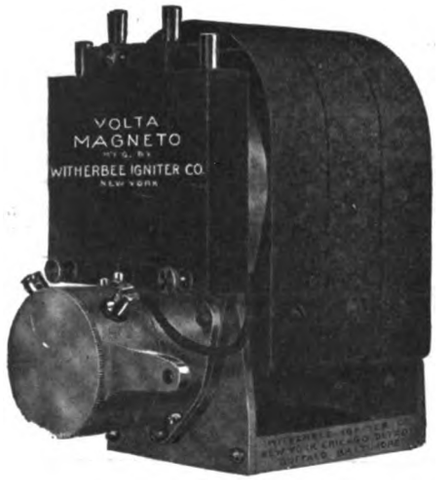
OVERLAND AUTOMOBILE COMPANY, Indianapolis, Ind.

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"Go As Far As You Like!"

with the

VOLTA MAGNETO



High Tension

The purchase of a Volta is a wise economy. It is absolutely dependable because—it is very simple in construction. Only the best imported magnets are used—magnets that retain their magnetism—and imported annular ball bearings. It is impossible to "shoot down" an armature. Every Volta is water-proof and almost wear-proof. We guarantee it unconditionally for one year to be a "Perfect Ignition System in Itself." Why pay 45% duty on foreign magnetos, when you can secure the best for

$100—4 Cylinder Volta
$120—6 Cylinder Volta

"Witherbee Everything for Ignition"

Wico Charging Device, Wico Ignition Wire, Wico Spark Plugs, Witherbee Batteries, Wico Inspection Lamp.

WITHERBEE IGNITER COMPANY

Makers of the Famous Witherbee Battery. **1876 Broadway, New York.**

CHICAGO, ILL.: 1429 Michigan Ave. DETROIT, MICH.: 220 Jefferson Ave. BUFFALO, N. Y.: 720 Main St.
BALTIMORE OFFICE 354 Charles St.

The Most Powerful Lens Mirror Made

is found in

SOLAR HEADLIGHTS

It has been proven so by actual photometric tests. The Lens Mirror is the famous Special Bausch & Lomb, used exclusively by us. You will find it in no other lamp—therefore specify Solars and be assured of getting—the most powerful automobile headlight on the market—makes the darkest night as light as day!



Badger Brass Manufacturing Co.

Two Factories:

437 Eleventh Ave. NEW YORK
KENOSHA, WIS.

The Warner Auto-Meter

1909 Style



Guaranteed Absolutely Accurate

is the only speed indicator made on the Magnetic Induction principle. Because of the principle it accurately indicates every range of speed from zero to the maximum.

All other instruments are made on the centrifugal principle. They fail to indicate any speed whatever under 5 to 10 miles per hour.

The Auto-Meter is so durably made that practical tests have shown that it will endure a **MILLION MILES** of riding without perceptible wear, or departing from absolute accuracy more than 10 feet to the mile.

We invite comparative tests. Before you decide on any Speed Indicator, put the Auto-Meter on one side of your dash and any other indicator at any price on the other. Then use your watch over a measured course. Keep the instrument which tells the truth. We know which it will be.

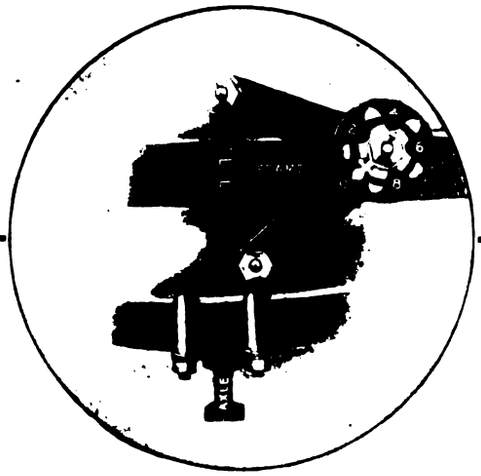
The Warner Instrnment Company

Factory and Main Offices—393 Wheeler Ave., BELOIT, WISCONSIN

BRANCH HOUSES—New York, 1902 Broadway; Boston, 925 Boylston St.; Philadelphia, Cor. Broad and Race; Pittsburg, 3432 Forbes St.; Cleveland, 2062 Euclid Ave.; Buffalo, 722 Main St.; Detroit, 239 Jefferson Ave.; Chicago, 1305 Michigan Ave.; Indianapolis, 330½ N. Illinois St.; St. Louis, 3923 Olive St.; San Francisco, 550 Golden Gate Ave.; Los Angeles, 1212 S. Main St.

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They are the Standard of the World



Should be on your Car

The Truffault-Hartford Shock Absorber is not an Accessory

—that's the point we want to emphasize. Say accessory to any well-posted automobilist and he will tell you that if he put every new-fangled idea on HIS car there would not be room for either the motor or the transmission, to say nothing of the passengers. Then say

TRUFFAULT-HARTFORD SHOCK ABSORBER

to this same man, and nine times out of ten he will point to them as a **part** of his car. That's just the difference—that's why we say they are **not** an accessory—but a necessity.

If any proof were needed that these Standard Shock Absorbers should be on your car, just consider that all racing cars—where every additional pound counts—where the car is stripped of everything that is not an essential—where even the frame and other parts of the chassis are bored out to reduce weight—on such cars you will find the Truffault-Hartford Shock Absorber is just as much a part as its axles or springs. Isn't that proof that they are an absolute necessity—an essential?

Then consider that twenty prominent manufacturers make these same Shock Absorbers a part of their Standard Equipment.

Why not write us now, today, telling the make, model and year of your car, and let us arrange to attach a set, or we will send them complete with attachments—you can have the work done yourself in a few hours.

Our little magazine, "Auto-Comfort," is issued monthly. It is full of practical hints and suggestions. Your name on a postal will bring it.

HARTFORD SUSPENSION COMPANY

142 BAY STREET, JERSEY CITY, N. J.

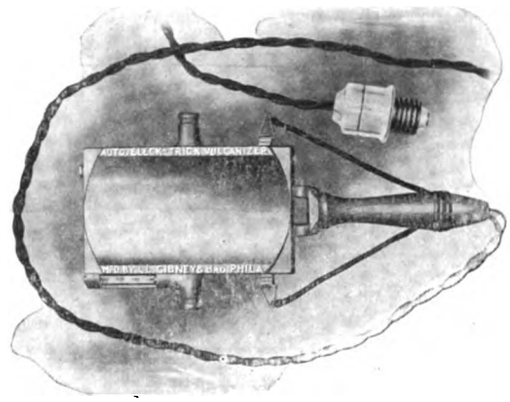
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THE IMPROVED

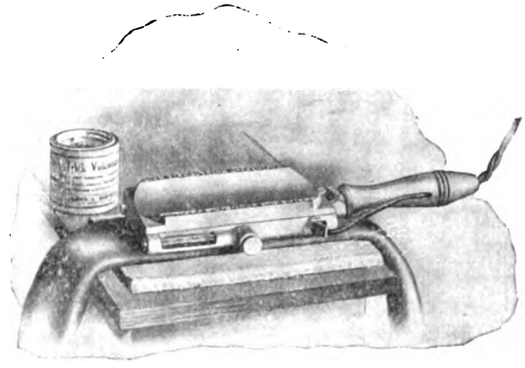
Auto Eleck-Trick Vulcanizer

IS A

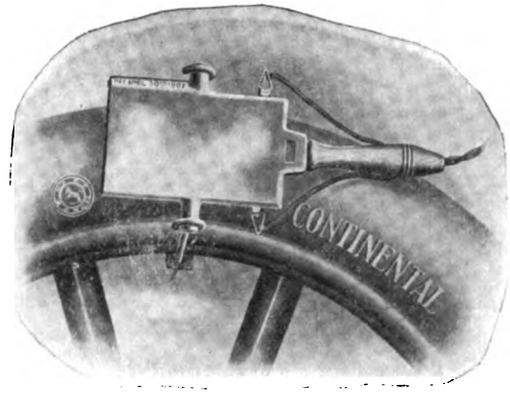
TIME AND MONEY SAVER



How much does it cost you a year for tube and casing repairs? Why not save all this expense by investing in one of these vulcanizers?



You don't have to be an expert to operate it. Simply follow the directions and you'll be surprised how easy it is to make repairs that have been costing you from 50c. to $5.00 each at the repairman's.



Hundreds of these instruments are now in use in garages and among owners all over the country. Start now to cut down your repair bills for the new year.

Price complete with repair material $12.00 Special discounts to dealers

JAMES L. GIBNEY & BRO., Manufacturers
PHILADELPHIA, U. S. A.

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STEPNEY
SPARE WHEEL

Every motorist should carry a "Stepney" and avoid all troublesome delays caused by punctures and blowouts. Write for Catalogue D.

The Only Cure for Tire Troubles

SPARE MOTOR WHEEL OF AMERICA, LTD. 236 Michigan Ave. **CHICAGO, ILL.**

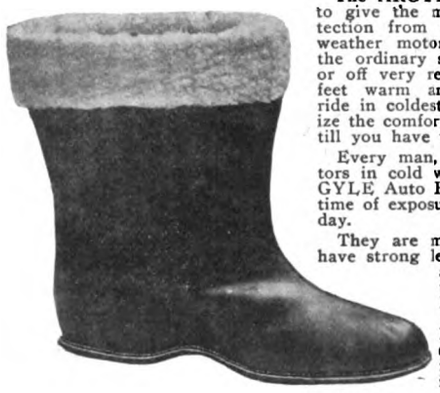
The Largest Automobile Supply House in America

WINTER SUGGESTIONS

We have a large line of Leather Clothing, Caps, Gloves, Wool Vests, Wool Boots, Ways Mufflers, Storm Coats, Lap Robes, Etc.

ARGYLE AUTO BOOTS

Worn over Shoes for Comfort in Cold Weather Motoring.



The ARGYLE Auto boots are designed to give the motorist's feet complete protection from the elements during winter weather motoring. They are worn over the ordinary shoes and can be pulled on or off very readily. They will keep your feet warm and dry during the longest ride in coldest weather. You cannot realize the comfort they give in frigid weather, till you have worn a pair.

Every man, woman and child who motors in cold weather needs a pair of ARGYLE Auto Boots, no matter whether the time of exposure is a half hour or a whole day.

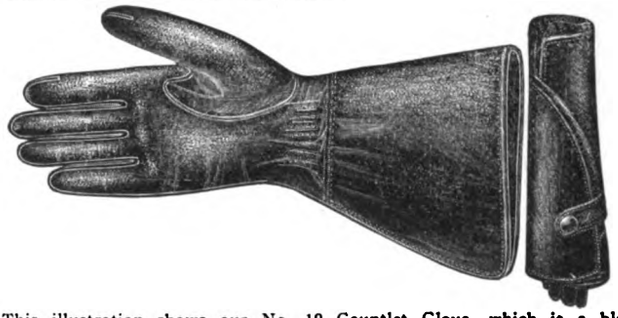
They are made of fine flexible leather, have strong leather Goodyear welted soles and are warmly lined throughout with genuine lambs-wool.

Made in all sizes, with long or short leg. Length of the long leg is 13½ inches,, and the short 10½ inches.

PRICES:

Long, per pair $9.00
Short, per pair 8.00

NO. 19 AUTOMOBILE GAUNTLET GLOVE



This illustration shows our No. 19 Gauntlet Glove, which is a black, seamless knit lined Automobile Gauntlet with extra large flexible cuff with 2 fastenings. This Gauntlet is made from the best selected imported black cape leather. It has a 7-inch Gauntlet with extra large cuff, 20 inches in circumference, which may be adjusted to smaller sizes. The cuff is lined and is guaranteed not to crack, and is stitched with genuine silk.

It will also be noted from the illustration, that the wrist is fitted with an elastic band, which will keep the Gauntlet tight, and comfortable on the wrist, and prevent it slipping down over the fingers.

The cuff is also flexible, and can be rolled into a small space, as shown in the small illustration, for carrying in the pocket. This is the finest Gauntlet Glove on the market.

Price, seamless knit lined, per pair $3.50

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CHAS. E. MILLER, Manufacturer, Jobber, Exporter and Importer, **MAIN OFFICE: 97-99-101 READE STREET, NEW YORK**

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Model B—Brush Runabout

A CAR OF SIMPLE DESIGN MADE WELL
NOT A COMPLICATED DESIGN MADE CHEAPLY

Its records and the opinions of its users speak more loudly than self praise. Agencies for 1909 are being closed rapidly. Much good territory still open.

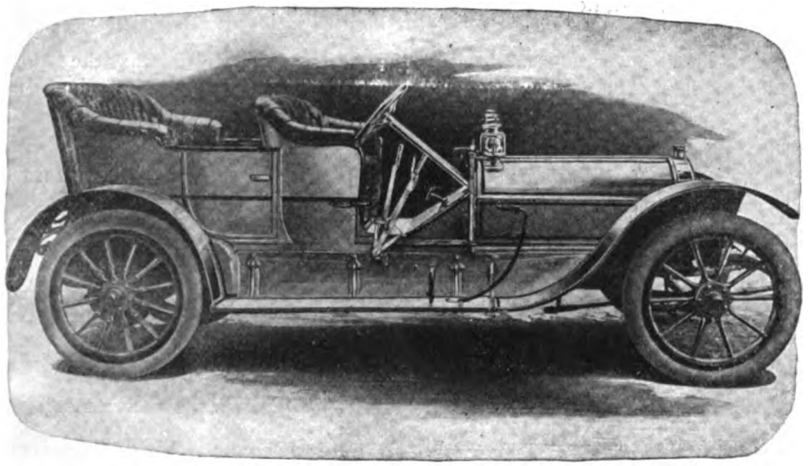
BRUSH RUNABOUT COMPANY, Detroit, Mich.

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Matheson

Cup Winner in 300 Miles Endurance Contest, Philadelphia to Wilkes-Barre and return, January 1-2, 1909.

Only THREE out of THIRTY-TWO CONTESTANTS finished with perfect time scores; THOSE THREE WERE four-cylinder MATHESONS.



50 H. P.—Six-cylinder Shaft Drive, - - - $3,000
Equipped with choice of Touring, Tourabout, Toy Tonneau, Close-coupled or Runabout bodies.

50 H. P. Four-cylinder Chain Drive, - - - $4,500
Equipped with Touring body, Limousine or Landaulet, $5,500
Roadster or Tourabout, $4,350.

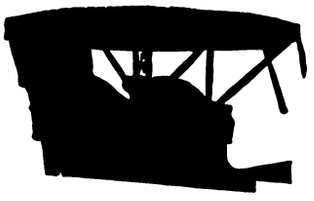
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Main Sales Office, Garage and Repair Dept.
1886-1888 Broadway, Cor. 62d St. NEW YORK CITY

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Aluminum Bodies
SPRINGFIELD METAL BODY CO.,
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Lambert Car
is made possible by the low cost of the simple Lambert friction transmission, which is more efficient than any type of complicated, expensive gear transmission.
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(Trade STA-RITE Mark)



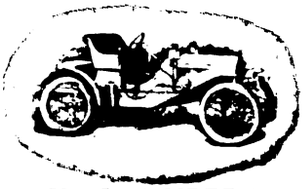
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Includes genuine $150 Splitdorf Magneto (free) and ½ inch larger tires than you get with any other car at this price. To have other cars equipped with these tires you must pay $50 extra. Write for full information to-day.
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Franklin Car makes perfect score on Timken Roller Bearing and Axle in Bretton Woods Endurance Run.

The 24-hour Bretton Woods Endurance Run of the Bay State Automobile Association, was planned with a view to being so severe as to break the perfect score with which each of the 21 contestants started, in a tour of 369 miles.

Instead of being a 24-hour run of 369 miles, it was a 1,627-mile contest consuming 95 hours, running without adjustment.

Never in the history of automobiling was there a more severe or ability-proving test. The route was the most difficult that could be selected, up steep grades, over roads so rough they required much low gear work, and so dusty as to interfere with the operation of some of the cars.

The Franklin car completed this remarkable run with a perfect score.

The fact that this car was equipped with TIMKEN ROLLER BEARINGS is additional proof that manufacturers realize TIMKEN PRODUCTS are indispensable for getting maximum power and endurance out of their cars.

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MORGAN & WRIGHT TIRES
ARE GOOD TIRES

MORGAN & WRIGHT, Detroit

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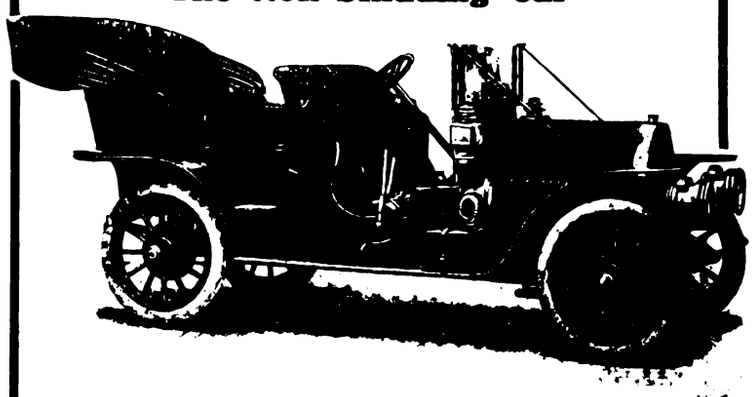
STEVENS-DURYEA COMPANY

Members Association Licensed Automobile Manufacturers.

CHICOPEE FALLS, MASS.

THE "JEWEL 40"

The Non-Skidding Car



SPECIFICATIONS

ENGINE—Rutenbur.
BORE AND STROKE—4¼x5".
IGNITION—Double—Bosch Magneto, Connecticut Coil and Exide Storage Battery.
LUBRICATION—Self contained system with oil level pump in crank case.
TRANSMISSION—Selective type, 3 speeds forward and reverse.
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FRONT AXLE—One piece drop forging.
REAR AXLE—Full floating type.
WHEEL BASE—120".
WHEELS—36".
TIRES—Goodyear, Diamond, Firestone or Hartford, 36x4" front, 36x4½" rear.
BODY—Seven passenger.
WEIGHT—3,000 lbs.
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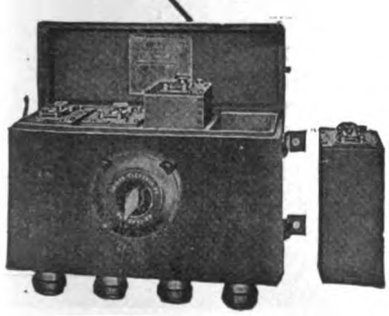
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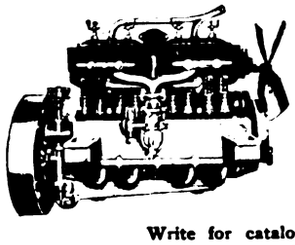
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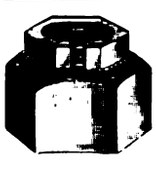
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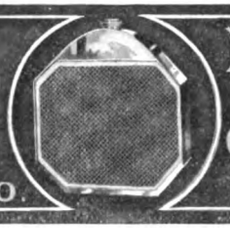
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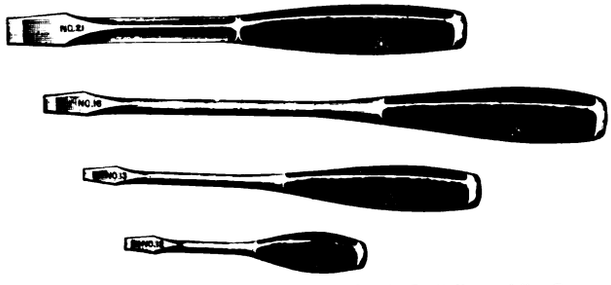
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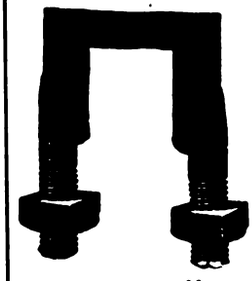
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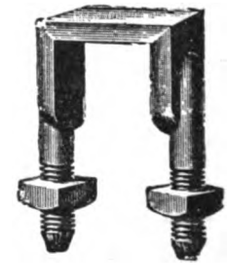
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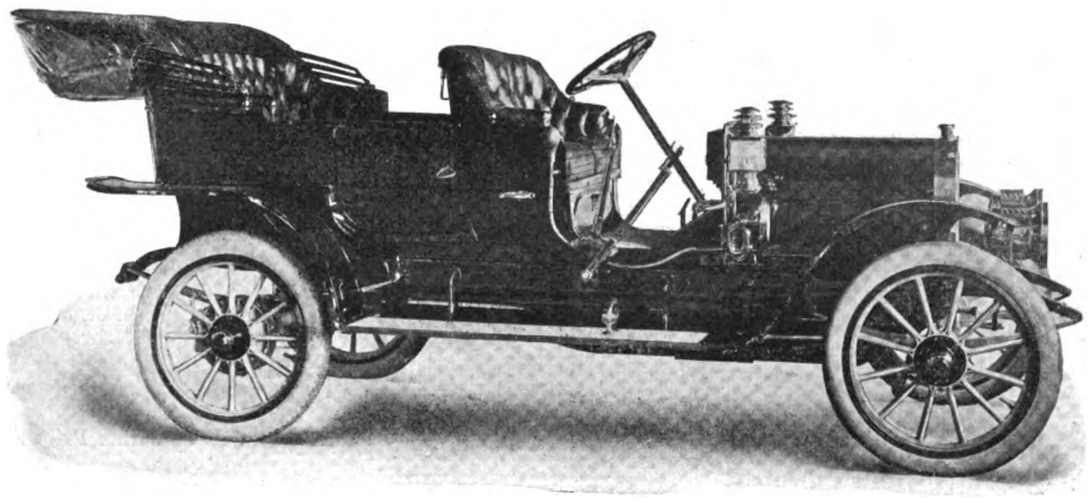
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$2,000 F. O. B. ROCHESTER, N. Y.

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Not only has our promise to produce a high grade car of best materials and workmanship for $2000 been strictly fulfilled, but we have demonstrated the Selden genius in a silent, strong, comfortable, durable and handsome car. It does all that the owner wants to do and all that the chauffeur ought to do. Agents and owners are enthusiastic over it. Not a cheap car at all but one of the how-can-you-do-it-for-the-money kind.

Our 1909 wheel base is lengthened 5 inches from 109 to 114; the magneto and pump moved to left side of motor, the remaining equipment on the right; the brakes enlarged and now rigged inside the frame; the wheels now 34 inches were 32 inches; the radiator and hood made to conform in style to longer wheel base—little touches for style and convenience. No radical mechanical changes, simply because we couldn't find any necessary—no use fooling with what has proved so unusually good.

We can assure those who buy the 1909 Seldens all the efficiency of the 1908 Seldens with a little more style and a little more convenience, a little more refinement. The actual records of use and travel this year have so proven their merit, power and economic stability that it would be hard to promise anything better in practical construction.

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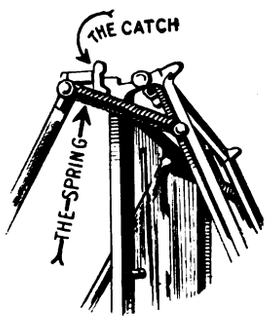
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Up and ready when you want it.

Out of the way next minute.

No screws or nuts to bother with. You put it up and down without taking your hand off the steering-wheel or even slackening the speed of your car.



In cold weather you keep it up all the time.

In middling weather you keep it up when the wind troubles you, and put it down the minute you want to.

In summer you put it up to rest your eyes from the wind, or whenever you pass through a cloud of dust, or marshy country where there are small flies in the air.

No goggles needed; does away with the only discomforts of automobiling.

Besides it is the handsomest and best made of all wind shields.

40-inch size, $35. 44-inch size, $37.50 — complete.

At all dealers. If your dealer can't supply you, send to us and we will ship it direct. Send for book anyway.

Soot-proof Spark Plug



The only spark plug that keeps itself absolutely free from soot. Prevents short-circuiting; does away with most of the ignition troubles.

C. A. MEZGER, Inc., 1629 Broadway, New York

I Want You to Know the Mechanical Principles

upon which are based the success of this car.

When 12,000 satisfied owners are all enthusiastic, there must be something worth your attention in the

"Maxwell"

"The Aristocrat of Moderate Priced Cars."

WHAT ARE THESE MAXWELL PRINCIPLES?

ENGINE AND TRANSMISSION—are built together—cast in one piece. This makes the strongest possible construction with a minimum of weight.

THREE-POINT SUSPENSION—Because the engine and transmission case of the Maxwell are combined in a single casting we are enabled to support the Unit Power Plant from three points—Motor Age (a technical paper) says "nothing could be nearer the truth."

MULTIPLE DISC CLUTCH—Used first by the Maxwell as far back as 1904, this clutch is now universally copied. Automatically lubricated by running in oil—it requires no attention.

STRAIGHT LINE SHAFT DRIVE—A basic Maxwell principle. No chains to break, stretch and wear. Two self-oiling universal joints make this the one perfect method of transmitting power.

THERMO-SYPHON COOLING—The Renault, the acknowledged leading car of France, and the Maxwell are exponents of this idea. A perfect system of water-cooling—minus all complications, namely—the pump and connections.

INDESTRUCTIBLE METAL BODIES that cannot crack, warp, or blister. No wooden body can possibly be as good.

The above are but a few of the Maxwell principles. Our catalogue goes further into details. Every claim made here we prove. That's why I want to send you a copy—now—today.

Benj Briscoe
President.

MAXWELL-BRISCOE MOTOR COMPANY

P. O. Box 106—TARRYTOWN, N. Y.
Main Office and Factory.

Pawtucket, R. I. **New Castle, Ind.**

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GROWING

¶We have outgrown our present quarters.

¶To accommodate our steadily increasing business and to give our stocks sufficient show space, we needs must spread out.

¶Accordingly, we have leased, for a long term, the building at 215-217 North Broad Street (the property immediately adjoining our present Philadelphia store), which, after extensive alterations, we will occupy on April 1st.

¶This new building will give us 12,000 feet of floor space for the display of our wares.

¶We invite every reader of the Motor World to call on us in our new quarters and personally inspect our stock. We'll show you lots of new and interesting things.

¶If this is impracticable, let us send you our new 1909 Catalogue. It's a store in itself.

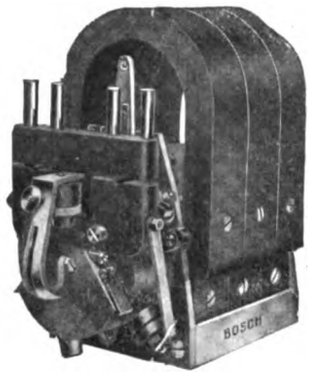
¶Don't forget we are distributing agents for Continental Ready-Flated Tires and Demountable Rims. They are the standard tire equipment.

James L. Gibney & Bro. PHILADELPHIA PA., U. S. A.

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BOSCH

The Preferred



MAGNETO

Preferred by manufacturers! It is part equipment on the greater majority of cars sold with magneto ignition.

Preferred by Race Drivers! It won 14 of the world's foremost racing events during 1908.

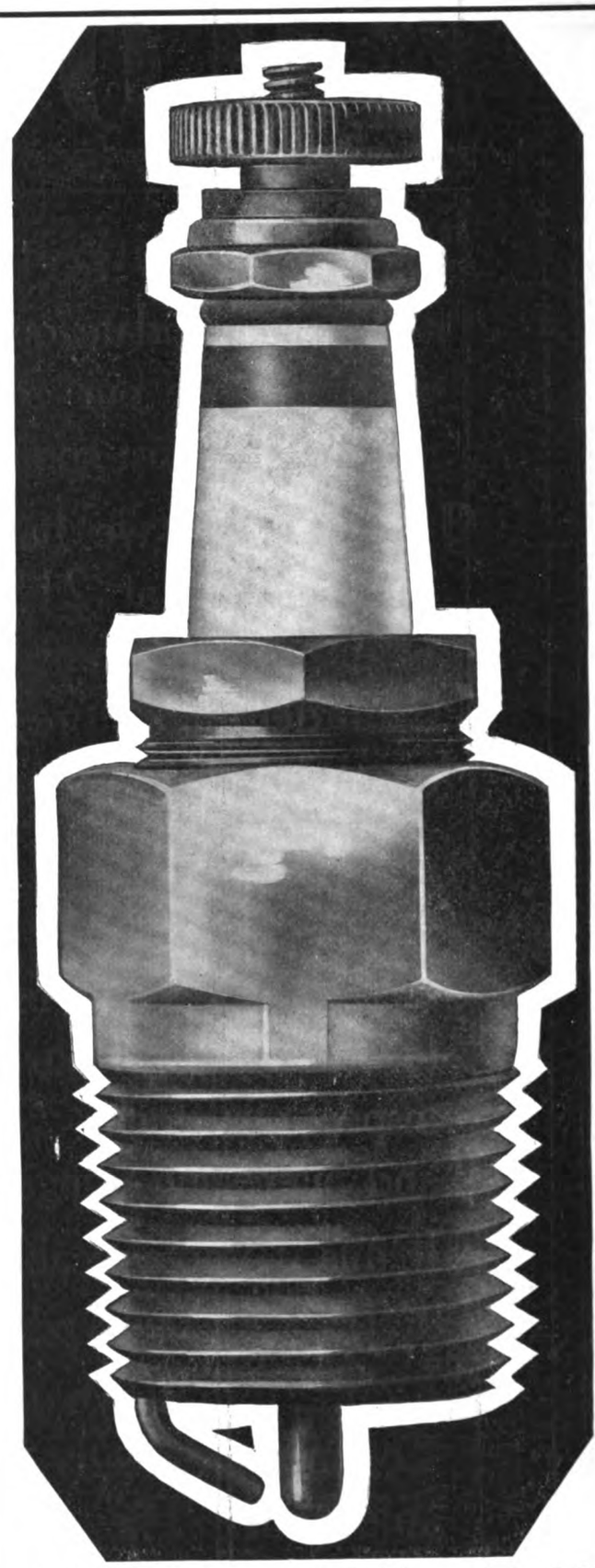
Preferred by the Motoring Public! There are over 275,000 Bosch Magnetos in daily use.

The Bosch is preferred to all others because it has consistently proven its value by past performances, by actual accomplishments. It is *THE* magneto you want for your car. Order now.

BOSCH MAGNETO COMPANY

223-225 West 46th Street, New York

Chicago Branch: 1253 Michigan Ave.

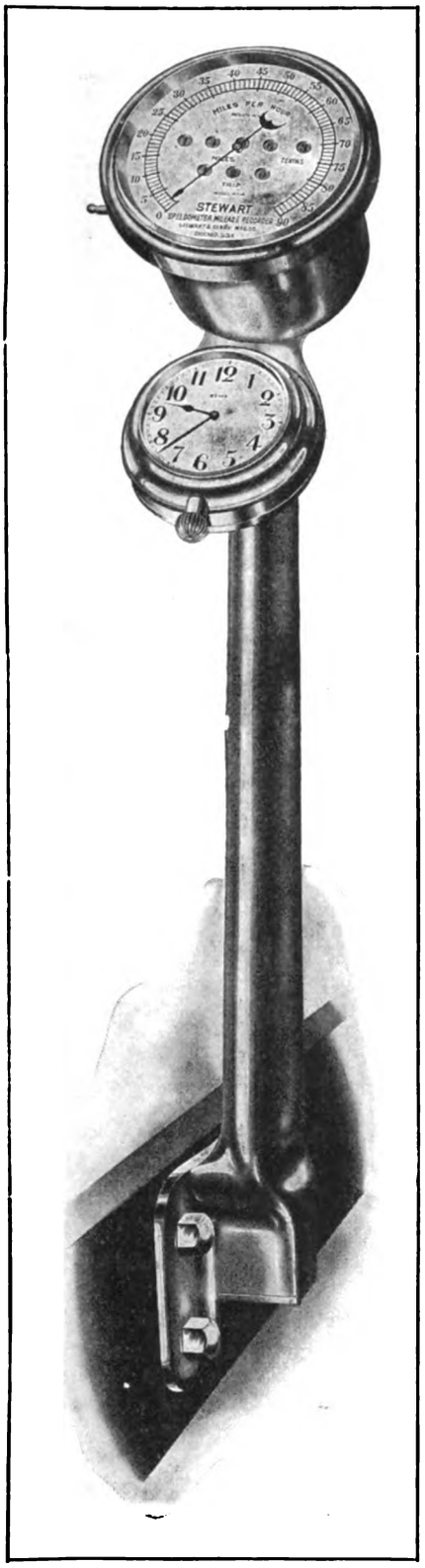


ALL SIZES STYLES MICA OR PORCELAIN $1.00

EMIL GROSSMAN COMPANY

296 Broadway MANUFACTURERS NEW YORK

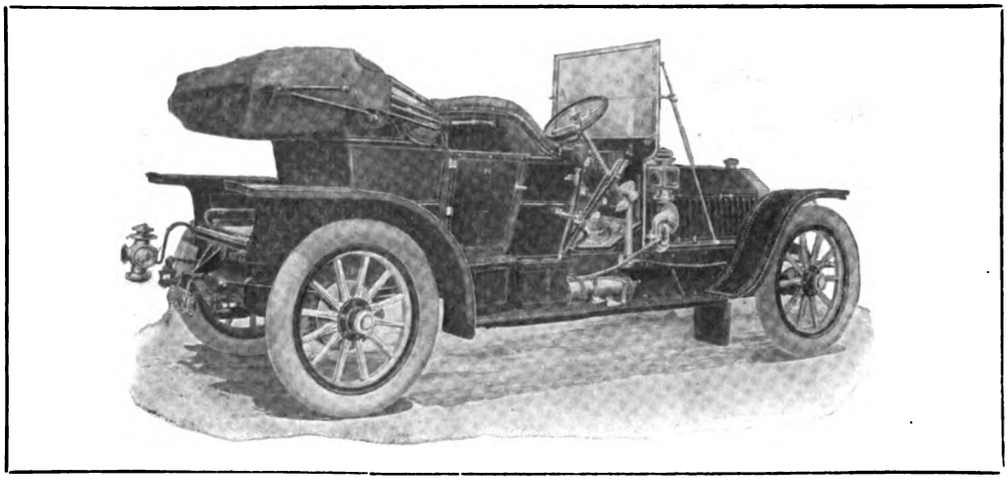
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THE NEW STEWART SPEEDOMETER

The Multipolar

(Model 14)



90-mile scale. This instrument is of extreme accuracy. It is built without regard to expense, and is intended for the highest powered, highest priced cars. Indicating element is mounted on an unbreakable diamond bearing. Upper guides are sapphire. Write for particulars



Stewart & Clark Mfg. Co.

509 Diversey Boulevard, Chicago, U. S. A.

Branches: { 1878 Broadway, New York
{ 697 Woodward Avenue, Detroit, Mich.

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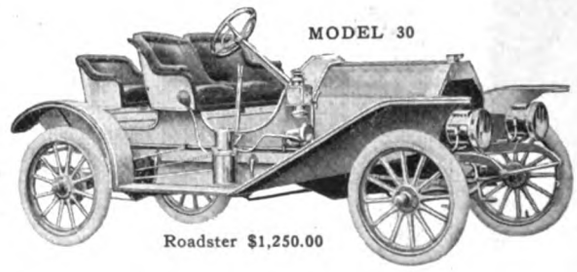
"DOES NOT BELIE ITS NAME"

Perhaps the strongest claim that can be advanced on behalf of the Overland is its extraordinary simplicity. This feature does not apply to any one particular part, but to the whole assembly.

The simplicity of our 4-cylinder motor,
The simplicity of our transmission,
The simplicity of our control,
The simplicity of all adjustments,
are not even approached by any other car to-day.

For the new driver the car is ideal. The experienced driver finds that it fulfils his every requirement and that every defect he has hitherto encountered has been taken care of and corrected.

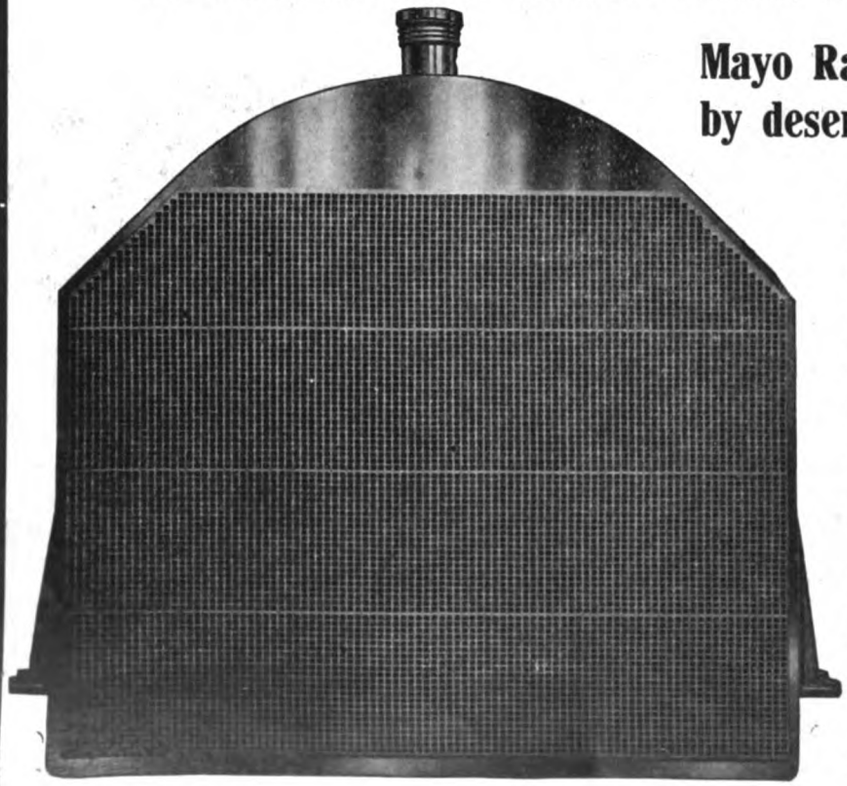
Write for catalog to



Roadster $1,250.00

OVERLAND AUTOMOBILE COMPANY, Indianapolis, Ind.

'Tis not in mortals to command success, but we'll do more—deserve it.



Mayo Radiators have achieved success by deserving it, and in no other way.

¶ Therefore that success is presumably of the permanent and abiding kind.

¶ Price is the cause of the absence of MAYO RADIATORS from cheap cars.

¶ Quality is the reason for the presence of MAYO RADIATORS on most of the good cars.

¶ The only argument against MAYO RADIATORS is their price.

¶ Every other consideration dictates their use.

¶ MAYO RADIATORS combine sound mechanical principles, exact design, construction and workmanship, together with graceful appearance and perfect finish; in short, all the good qualities that go to make the ideal radiator.

¶ MAYO RADIATORS are stamped with the hallmark of class.

¶ MAYO RADIATORS are really the thoroughbreds of the radiator world.

¶ MAYO RADIATORS are made in the kind of a factory that befits them and by the MAYO RADIATOR COMPANY, at New Haven, Connecticut.

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THE BOSTON SHOW

like the New York, Chicago and other representative automobile shows of the year, exhibited more

"Firestone"

Non-Skid tires on American cars than any two other non-skids combined.

Firestone tires totaled third in equipment—more evidence of the changing sentiment among motorists against mere popular price in favor of the best possible tire service.



In the commercial vehicle section, the usual preference for tire equipment stood:

27 sets Firestone Side-Wire Tires—the World's Standard.
6 sets next highest make.
3 sets second highest make.
7 sets six other competitors combined.
43 total commercial vehicles exhibited.

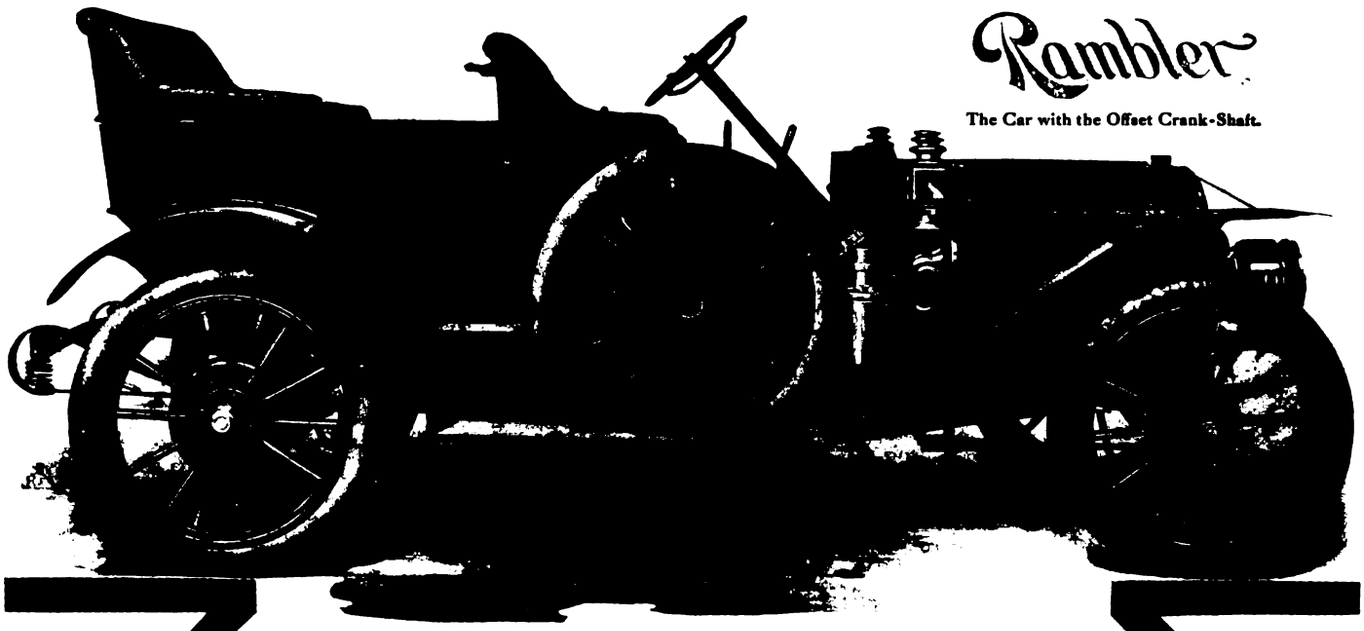
The prestige of Firestone tires grows, as the demand for better tire service increases.

FIRESTONE TIRE & RUBBER COMPANY, Akron, Ohio

Branches and Agencies Almost Everywhere.

"The Largest Exclusive Rubber Tire Makers in America."

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Rambler

The Car with the Offset Crank-Shaft.

Model Forty-four, 34 H. P., $2,250.
Spare Wheel, with Inflated Tire, Brackets, and Tools, $74. Magneto, $150.

TRY IT ON THE HILLS

Test this car at half-speed on a hill or sand road where power—and every ounce of it—is needed. Notice how steadily and powerfully it pulls when running slowly under load.

The capacity of the Rambler engine for doing this extra work is most noticeable at low engine speeds. This is because of the Offset Crank-Shaft.

All that power which in other engines is lost through friction on the bearings and cylinder walls is added to the driving force by the Rambler Offset Crank-Shaft. It reduces friction, eliminates hammer on bearings, gives more power. The Straight-Line Drive delivers the power direct and with least frictional loss to the rear axle.

Seven-passenger model, 45 horsepower, with Offset Crank-Shaft, $2,500. Other models, $1,150 to $2,500. A new Rambler catalog has just been issued. It describes and illustrates all distinctive features of new Ramblers—the Offset Crank-Shaft, Spare Wheel, Straight-Line Drive, etc. A copy on request.

THE CAR OF STEADY SERVICE

Thomas B. Jeffery & Company, Main Office and Factory, Kenosha, Wis.
Branches and Distributing Agencies: Chicago, Milwaukee, Boston, New York, Cleveland, San Francisco

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, March 18, 1909. No. 25

WHEREIN THE INJUNCTION FAILS

Unexpected Refusal of Contempt Order in Rushmore's Suit—Manhattan's "Unfair" Lamps Disposed of Abroad.

How to dispose of goods that infringe the rights of other Americans and that have been rendered unsalable in America by reason of having been "tied up" by an injunction of a United States Court has been pointed out by one of those same tribunals. In brief, the solution of the apparently vexing problem is to ship such goods abroad.

This solution was evolved in the case of Samuel W. Rushmore, of Plainfield, N. J., against the Manhattan Screw & Stamping Co., which just has been decided by Judge Noyes in the United States Circuit Court for the Southern District of New York. It will be recalled that several months ago Rushmore won an action for unfair competition against the New York concern, the unfairness consisting of imitation of the Rushmore "flared front" type of searchlight lamp, the court imposing a fine and issuing a permanent injunction restraining the production and sale of the "unfair" lamps. Despite the injunction, the Manhattan company shipped some of its lamps abroad, learning which Rushmore applied for an order holding the defendants to be in contempt of court, the alleged contempt consisting of violation of the injunction in sending the enjoined goods to Europe. When the case was heard the Manhattan Screw and Stamping Co. proved to the satisfaction of the court that the lamps exported had been manufactured previous to the issuance of the injunction, which Judge Noyes held to be not illegal and he therefore found that no contempt had been committed.

In his decision, Judge Noyes takes account of the fact that the defendant had filed an affidavit showing that none of the lamps covered by the injunction has been manufactured since it was issued; that none of the lamps manufactured before the injunction has been sold in this country since that time; and that some of the lamps manufactured before the injunction was issued have been sold in Europe since that time. These statements the plaintiff, Rushmore, was not in a position to dispute.

"Upon these facts," the court ruled, "the case is brought, in my opinion, within the principles of the decisions in Gould vs. Sessions, 67 Fed. 163, and Bullock vs. Westinghouse, 129 Fed. 105, holding, as I construe them, that an injunction against the infringement of a patent is not violated by the sale of the patented article in countries to which the monopoly does not extend. It is true that in the former case the court referred to the fact that 'no preliminary arrangement for the sale were made in the United States,' but I cannot regard that statement as imposing a limitation upon the doctrine respecting sales in foreign countries. The application to adjudge the defendant in contempt is denied."

Canadian Company to Make Buggies.

The long established Tudhope Carriage Co., Orillia, Ont., Canada, has taken up the motor buggy, a separate company, the Tudhope-McIntyre Co., having been formed for its manufacture. The McIntyre (formerly Kiblinger) engine and other McIntyre parts are being used in its production.

New York Firm will Operate Cabs.

In addition to selling the Stearns car in New York, Wyckoff, Church & Partridge are making ready to operate a taximeter cab service. They have placed an order with the Bristol Engineering Co. for 100 Rockwell cabs which are to be fitted with Hartford tires.

York to Produce Motor Vehicles.

The York Carriage Co., of York, Pa., has decided to engage in motor car manufacture, and has awarded a contract for a brick addition to its plant for the purpose. The product will be chiefly commercial vehicles, which are expected to be on the market in May.

PUNCTURES STORY OF CAB TRUST

President Meade, of New York's Biggest Company, Says Contemplated Merger is Fiction—The Question of Rates.

Because apparently the wish is father to the thought on the part of some men interested in taxicab ventures in New York, reports of an impending or a prospective taxicab trust have been given wide and generous publicity during the past few days. But when President Meade, of the New York Transportation Co., which controls some 800 of the cabs and practically dominates the situation in New York City, was asked by the Motor World how much truth or how much fiction reposed in the reports, he made prompt and unevasive reply:

"The reports are all fiction so far as we are concerned," he said.

The New York Transportation Co. was one of six concerns which were said to be involved in the prospective "trust" and was reported to have been represented at a meeting inspired by H. W. Whipple, at which an agreement to raise the taxicab rates was agreed on as the first move toward the merger.

Mr. Meade stated, however, that the New York Transportation Co. had not raised its rates, nor agreed to raise them, though he added that they ought to be raised. He remarked that there is no uniform rate in effect and that Mr. Whipple's company, a recent entry in the field, which is credited with having raised its rates in conformity with the alleged agreement, had charged the present and higher figure since its beginning.

Fire Destroys Rands's Top Factory.

The factory of the Rands Mfg. Co., Detroit, Mich., makers of automobile tops, etc., was almost totally destroyed by fire on Tuesday last, 15th inst. It was insured for $19,000.

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In the Retail World.

The Southern Vehicle Co., of New Orleans, La., has added automobiles to its lines. The concern has taken the agency for the Mitchell and the Waverley.

The Leighton Auto Co., of Brockton, Mass., has moved into its large new home at Warren avenue and Bartlett street. The structure is of concrete and brick.

The Adams Electric Co., of Trenton, N. J., has opened a garage on East State street. A repair shop and a department for the sale of supplies have also been installed.

The Benton Automobile Co., of Canon, Colo., has leased the building formerly occupied by the Canon City Automobile Co. A garage business is being conducted.

The Peerless Motor Specialty Co. is the style of a new accessory supply house which has "opened up" at 342 Yonge street, Toronto, Canada. H. B. Sills is the manager of it.

The Smalley Auto Co., Brockton, Mass., of which F. E. Smalley is manager, has leased a garage at 38 Maple avenue. The firm will handle the Pullman, Regal and Glide.

The Erdman Auto Garage Co., 12-20 East Eighth avenue, Denver, Colo., has opened a new brick garage. The establishment includes a repair department and an electric charging station.

The Royal Sales Co. has been formed in Seattle, Wash., to take the agency for Royal Tourist cars. George E. Dickinson is the president, and a location has been taken at 1401-3 Broadway.

William Seufert's new garage in Port Clinton, O., has been completed. It was opened up this month, and boasts a well equipped repair department in addition to the garage feature.

The Queen City Automobile Co., of Cincinnati, O., has taken a new name and will hereafter be known as the Cadillac Motor and Garage Co. The headquarters will be on West Court street.

Chanslor & Lyon, of Los Angeles, one of the first automobile supply firms on the Pacific coast, have removed to 945-947 South Main street. The new location will afford some much needed "elbow room."

P. K. Morcom has entered the automobile business in Denver, Colo., by taking the agency for Firestone motor buggies and light delivery wagons. His salesroom and garage is at 2420 Humboldt street.

The Chicago Motor Car Co. has leased for 99 years the northeast corner of Michigan avenue and Twenty-fourth street, Chicago, and will erect thereon a three-story building that will cost not less than $25,000. The dimensions of the plot are 134 by 60 feet.

Charles P. Root, one-time editor of the Motor Age, who has been handling motor boats and cars at 1806 Michigan avenue, Chicago, is preparing to dip more largely into cars. To that end he has obtained the agency for the National.

A branch in Newark, N. J., for the Stevens-Duryea Automobile Co. has been opened in Halsey street. George F. Eveland, formerly with A. G. Spalding & Co., the New York and Philadelphia representatives for the Stevens-Duryea, has been appointed manager.

The Peoples Automobile Co., Dayton, O., which has been incorporated with $25,000 capital, has taken over the business of the Blank & Lukens Auto Co., and J. Paul Bishop at 19-21 West Second street. Howard K. Wiley will be the manager of the concern which will handle the E-M-F., Thomas and Locomobile cars.

Application for a receiver for the Dayton Auto Exchange, 600 South Wayne avenue, Dayton, O., has been made by Lloyd S. Johnson, in a suit to dissolve the partnership between himself and C. E. Dunn, under which the concern was operated. No estimate is made of the assets or liabilities of the firm.

Alvan T. Fuller, the well known Boston agent, has purchased a large plot of ground on Commonwealth avenue and Gardner street, on which he will construct a large concrete garage and machine shop in which automobile bodies and other things will be built to order. The plot, which comprises 87,000 square feet, is considerably removed from the business center of Boston in which Fuller's salesrooms are located and which latter will not be discontinued when the new place is completed.

Internal dissension in the Missouri Valley Automobile Co., of Kansas City, has led the president, Harvey E. Rooklidge, to apply for the appointment of a receiver and the winding up of the business. Rooklidge, who holds one-third of the capital stock of $15,000, alleges that on February 26th last, the other stockholders took forcible possession of the company's property and have since refused to recognize him as president. He states that the company's liabilities amount to $30,000 and that though he was informed that the capital stock was fully paid up when he bought his one-third interest, he since has discovered that such was not the case.

Due to the report published in the Motor World that the Springfield Automobile Co., Springfield, Mass., was removing to Springfield, Ill., the Springfield Automobile Co., of which F. G. Jager is president, and which handles the Stevens-Duryea, Locomobile and Babcock, write that an erroneous impression has been crreated. Mr. Jager claims that his company is entitled to the use of the name and adds that previously it has been so much annoyed by its employment by the concern that manufactured the Springfield car, to which the removal notice referred, that their (the Jager) attorney has notified the makers of the car to discontinue the use of the name as their company title.

The Week's Incorporations.

Cleveland, O.—Cleveland Taxicab Co., under Ohio laws. Increase of capital from $25,000 to $150,000.

Austin, Tex.—Austin Motor Car Co., under Texas laws, with $5,000 capital. Corporators—W. W. Pitts, John R. Blocker and P. R. Schwinge.

Hartford, Conn.—Universal Auto Repair Co., The, under Connecticut laws, with $3,000 capital. Corporators—Herbert R. Seymour, James P. Grady and John F. Daly.

Syracuse, N. Y.—Wonder Mfg. Co., The under New York laws, with $40,000 capital; to manufacture automobiles, etc. Corporators—W. D. Boyle, G. T. Hurd and B. C. Cornwell.

Boston, Mass.—South End Motor Car Co., under Massachusetts laws, with $30,000 capital; general automobile business. Corporators—R. G. Irwin, president; F. M. Durkee, treasurer.

Cheyenne, Wyo.—Cheyenne Automobile and Supply Co., under Wyoming laws, with $5,000 capital; general automobile business. Corporators—L. E. Smith, T. C. Armstrong, and M. H. Hartung.

New York City, N. Y.—Connecticut Motor Vehicle Co., under New York laws, with $50,000 capital; to manufacture motors and vehicles. Corporators—C. M. Gilpin, H. A. Stuart and H. C. Murray.

Los Angeles, Cal.—Pioneer Automobile Exchange, under California laws, with $25,000 capital. Corporators—Edwin W. Walker, John W. Mitchell, Frank E. Edwards, Henry F. Duck, and Robert E. Moir.

New York City, N. Y.—Rainier Motor Co., under New York laws, with $350,000 capital; to manufacture vehicles propelled by power. Corporators—P. N. Lineberger, G. C. Comstock and F. H. Van Houton.

New York City, N. Y.—Monarch Motor Co., under New York laws, with $25,000 capital; to operate cars for hire. Corporators—A. C. Rader, E. H. Fritchman, Montclair, N. J.; F. J. Griffin, New York City.

Nashville, Tenn.—Tennessee Automobile Co., of Hamilton County, under Tennessee laws, with $10,000 capital. Corporators—H. Blacklock, R. A. Brantley, E. G. Huffacker, Jeptha Bright and G. H. Blacklock.

Providence, R. I.—Driving Club Stable, The, under Rhode Island laws, with $100,000 capital; to do a garage and general automobile business. Corporators—John W. Page, Milton W. Mason and Stephen L. Tingley.

Louisville, Ky.—Weber Auto-Truck Mfg. Co., The, under Kentucky laws, with $10,000 capital; to manufacture gasolene and electric trucks. Corporators—Frank Weber, Edward J. Weber and J. L. McBurnie, Jr.

Chicago, Ill.—Adams Automobile Co., under Illinois laws, with $5,000 capital; publishing and manufacturing business and to conduct automobile school. Corporators—M. P. Morissey, J. H. Dunn and J. M. Tyrrell.

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UNIT COIL BUYS MORE PATENTS

Four Added to the Two Already Owned—Rights That Are Secured by the New Acquisitions.

Being already possessed of the Varley and Williams patents, Nos. 878,435 and 884,116, both of which were applied for in 1904 and issued in 1908 and which are claimed to cover the now universal unit coil construction, the Unit Coil Co., 34 Jersey City, has further strengthened its position by the purchase of four other patents bearing on the situation.

The latter rights are those covered by the Brigham and Lawton patents on coils and the Miller and Dow patents which are claimed to control the basic rights to master vibrators.

The Lawton patent, No. 911,414, applied for in 1907 and issued last month, and the Brigham patent apply to multiple cylinder ignition with an ignition device for each cylinder and a coil for each device, and means for bringing the ignition devices into successive operation for preventing interference between the coils to prevent cross firing. The Miller patent, No. 754,666, granted March 15, 1904, substantially covers the combination of two or more coils, a circuit breaker and a multiple-switch controlling the primaries of the coils and an interrupter and its controlling magnet in series with the primaries of the coils. The Dow patent, No. 752,384, issued February 16, 1904, describes apparatus including a plurality of coils, a sparking device for each coil, a source of energy, a single vibrator and condenser, a separate circuit for each coil, an interrupter for each circuit, means for operating the interrupter dissimultaneously and means for impressing on each circuit a condenser discharge.

Imperial Wheel Denies Absorption.

Although it had been understood that the Imperial Wheel Co., of Flint, Mich., was so closely allied with the Dort-Durant and Buick interests as to be connected with or influenced by the $12,500,000 General Motors Co., of which Buick is the mainspring, J. D. Dort, president of the Imperial Wheel Co., wires that the report to that effect published in last week's Motor World is untrue. He asks politely that the denial be published and, of course, this is cheerfully done, the Dort denial adding but one more to the long list of denials that have been brought out since the more or less mysterious General Motors merger first was conceived. The prospectus of the merger exploiting its stock which was printed exclusively in the Motor World last week was the first really authentic information regarding it that has been obtainable. But now that the "secret" is out and invited guests have been admitted to the ground floor, it is stated that the beauties of the merger and its wares are shortly to be exploited by some spreadeagle advertising, the campaign having been entrusted to a corps of experts.

New York Car and Truck Schedule.

Schedules in bankruptcy of the New York Car & Truck Co., of Kingston, N. Y., were filed last week. The company, of which Orlando F. Thomas, of New York, was president, was at one time engaged in the manufacture of the Allen-Kingston car under contract, and became involved in litigation because of alleged failure to make deliveries in accordance with its agreement, following which receivership proceedings were brought. The schedules show liabilities $496,580, of which $309,603 are secured, $7,171 for taxes and $2,829 wages, and nominal assets $2,821,742, consisting of factory property and plant, $2,500,000, actual value unknown, mortgaged for $308,000; stock, $86,558, accounts $11,885, notes $2,450, cash in bank $724, office furniture $125, and shares of stock in other corporations $220,000.

Bankrupt Charged with Concealing Assets.

Charles L. Cohn has been appointed receiver for the Pneu L'Electric Co., New York, who imported some tires and sold some wind shields and against whom a petition in bankruptcy was filed on February 24th last. At that time a receiver was not asked for, but it now is alleged that prior to the bankruptcy proceedings the greater part of the assets were secreted. The schedules of the company show liabilities of $31,338 and nominal assets of $12,856, consisting of stock, $3,000; accounts, $9,082, and cash, $774. Among the creditors are William H. Cowan and D. B. Mitchell $14,423; David B. Mitchell, $2,496; George Leveene, $6,500; John Quinlan, $2,023 and the Class Journal Co., $1,940.

Rainier Once More in Motion.

Having completed reorganization and having reincorporated as the Rainier Motor Co., John T. Rainier and his associates have acquired from the receiver all rights, titles, etc., to the assets of the Rainier Motor Car Co., and have resumed operations. Mr. Rainier is president and Paul N. Lineberger, vice-president of the new company, which has started moving the wheels in the factory at Saginaw, Mich., and also leased the building on the northeast corner of Broadway and Sixty-fourth street for New York headquarters. It is expected that the new Rainier model will reach New York next week.

Seward Joins Michelin Sales Staff.

William Seward, Jr., formerly with the Hartford Rubber Works and latterly of the Seward Rubber Co., has joined the staff of the Michelin Tire Co. He will be attached to the general sales department.

The Gabriel Horn Mfg. Co. has opened a New York branch at 1796 Broadway.

NO CHANGE IN IMPORT DUTIES

Revised Tariff Lists Both Cars and Tires at Existing Rates—Patent Situation Given New Turn.

Despite the more or less—about 99 per cent. less—remarkable philanthrophy of the Flint (Mich.) manufacturer engaged in floating a $12,000,000 holding company—which has stock for sale—who hired a lawyer and who himself later appeared before the Ways and Means Committee to second the efforts of the importers to obtain a reduction in the import duty on automobiles, the Congressional committee has done nothing of the sort.

The revised tariff, which was introduced yesterday into Congress keeps automobiles and parts thereof exactly where they were before—at a duty of 45 per cent. ad valorem. Heretofore they were classed as "manufactured steel not otherwise specified," but in the new tariff they are specifically listed. Tires also remain at 30 per cent.

It is thought possible that the dejection of the Flint manufacturer at the plight of his co-laborers, the importers, is of the sort that will require him to stuff a handkerchief in his mouth to conceal his feelings.

It cannot be said that the action of the Ways and Means Committee causes any surprise. It had come to be reasonably well understood that the practically unanimous plea of the American trade that the duty be left unchanged would be heeded.

The most surprising feature of the new tariff is the unexpected notice which it serves on England, France and Germany that two can play at the game of nullifying patents granted to non-residents unless the articles so patented actually are manufactured in the country issuing the supposed protective grant. The section in the new tariff covering this point applies the same rules to patents obtained in the United States by aliens that are adopted by the country of which these aliens are citizens in respect to patents issued there to citizens of the United States. This will compel foreigners obtaining patents in the United States to manufacture here or forfeit the rights to their patents.

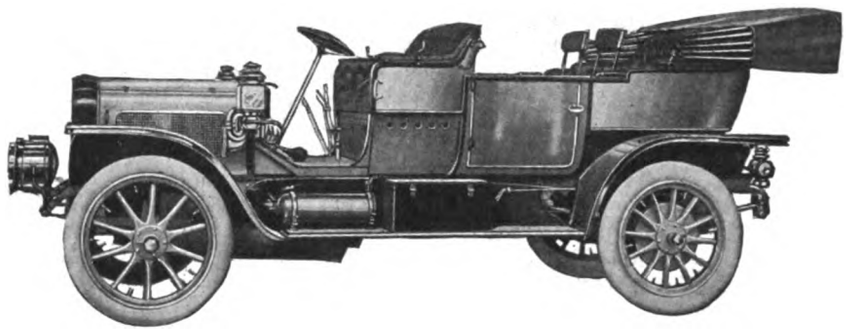
Alleges Infringement of Goodyear Rim.

Suit alleging patent infringement has been brought against the Standard Universal Rim Co., of Columbus, O., by F. A. Seiberling, president of the Goodyear Tire & Rubber Co., of Akron, O. In the complaint, which has been filed in the United States Circuit Court, for the Eastern Division of the Southern District of Ohio, it is claimed that the Standard company is producing a rim which incorporates some important features of the Goodyear quick detachable rim that are covered by the patent rights of the plaintiff.

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THE WHITE STEAMER

Is the Most Desirable Car



The White Steamer has many desirable qualities not possessed by any other automobile. It is the only car which is noiseless, odorless, smokeless and free from vibration. It is the only car which can be driven at any speed without the shifting of gears. For these reasons the passengers in a White enjoy a degree of comfort not obtainable in any other type of car.

The superiority of the White in these respects was well summed up in the following official report by the Quartermaster-General of the United States Army:

> "The White is simple in operation. The means of propulsion being steam, it is better suited for the transportation of the sick and wounded than gasolene cars on account of its free and smooth running, freedom from violent vibration and ease of controlling the speed between maximum and minimum without jerks or jolts."

These considerations, which influenced the War Department (and later the Navy Department) to adopt the White exclusively for motor ambulance work, should incline the private purchaser, who values simplicity and comfort, toward the White.

The White has an unequaled record for supreme reliability and for low cost of up-keep, and anyone who purchases a car without at least investigating the White is acting with only a partial understanding of present-day attainments in the construction of automobiles.

We make two models—a 20 horse-power car at $2000 and a 40 horse-power car at $4000 (shown above).

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CLEVELAND, 407 Rockwell Ave.

CHICAGO, 240 Michigan Ave.
SAN FRANCISCO, Market St. at Van Ness Ave.
ATLANTA, 120-122 Marietta St.

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NEW YORK, MARCH 18, 1909.

"Up to about a year ago I subscribed for five or six different automobile trade publications, including the Motor World, but now I take only one—the Motor World—as I find that it covers not only everything all the trade journals print, but especially on the first three pages presents such news as none of the other papers even seem able to get. There is no doubt that the Motor World is by far the most up-to-date purely automobile trade paper printed."—H. J. Koehler, S. G. Co., New York, by H. J. Koehler, president.

Adaptation of Methods to Markets.

It must be something of a cross to some manufacturers who are branching out into foreign fields to learn that they must change their methods to suit the territory. Branching out into foreign business is like branching out into a new territory at home, in this one respect, that in order to succeed, both the product and the manner in which it is displayed must be such as to appeal to the local inhabitants. Only, in branching out into a new state in the Union, the differences in local conditions are so slight as to appear almost negligible. All the same the work of handling a new domestic territory commonly is placed in the hands of a local man whose methods of approach where successful are so in a measure proportionate to his understanding of local necessities as well as his ability as a salesman. So in the foreign field, the buying class must be approached on an even footing of language and business custom.

Perhaps this necessity assumes no graver character than in the matter of trade literature. To the average manufacturer cataloging appears somewhat in the light of a burden at all times. But the idea that foreign catalogs must be presented not merely in the form of translations, but rewritten completely, in order to appeal to the readers' minds is not easy to assimilate. No matter in what light it is regarded the cataloging outlay always is a heavy one, from which it is difficult to trace direct results. Yet as the average catalog is quite as much a reason-why argument as a mere listing of qualities and specifications, it is important that the reasons and the reasoning be such as to appeal to the reader. In this respect it is important that no foreign selling campaign be undertaken under the mistaken impression that the introduction of foreign products against local competition can be handled simultaneously with a conversion of local methods to those obtaining in the locality from which the product originates. Competitions are based on the rivalry of equivalents or apparent equivalents, and no business competition can be waged successfully in the face of an attempted reform which seeks to overthrow one of the pillars of the social fabric of any land as strong as that of business tradition.

Breaking Down of Trade Prejudices.

Indications continue to point to a condition of extreme anxiety on the part of those who are engaged in the carriage trade to cultivate the automobile field in some of its many branches. From the numbers of old-line carriage makers who are at present engaged in the production either of automobile bodies or else the assemblage in one guise or another of the high-wheeled type of motor vehicle, down through the line to the small retailers who are eagerly grasping the opportunity of getting into the business of motor vehicle selling by establishing agencies merely as side lines, a continual and growing movement is manifest which marks an equally persistent dissolution of the lines of demarcation between the two industries which used to be so ruggedly maintained. Further than that, it is observable that the accepted organs of the carriage trade, the vehicle and implement journals, are equally astute in cultivating the business.

Back of this general acknowledgment of the importance of the motor vehicle movement is found more than a slow breaking down of the barrier of prejudice which formerly was so strong. It is no longer possible to conceal the fact that the carriage trade is in a very bad way and that it is welcoming the possibilities of income derivable from the automobile not simply as a result of a growing breadth of appreciation, but also because it helps to divert to fast emptying coffers a welcome dollar now and then. Incidents are not wanting of expensive and beautifully made carriages being sold at ridiculously incommensurate prices merely to clear them off the floors where they have stood until their sales value is threatened because of their shopworn appearance; of speculators buying vehicles at bargain prices in large lots and shipping them to distant points on the chance of anticipating the spread of the automobile movement, only to find that they are too late; of stocks which have been on hand so long that their owners are beginning to despair of ever being able to move them.

Incidentally the enrollment of the carriage trade in the marketing end of the automobile business involves an important bit of education for a large number of the class. Accustomed to a relatively small but constant flow of business practically throughout the year, and to long credits, they come into the automobile field with an idea that they can buy at any time from the manufacturers, renew their purchases when they please, and generally throw the burden of stock carrying on the maker himself. Instead, they are faced with the, to them, astonishing proposition that they must be content with a relatively small allotment for the first year because the maker's stock already is low, although active trading at retail has not even begun to a noticeable amount; and further, that if they really want to share in the profits of the automobile business, they must come around early in the fall with definite plans for the assumption of a liberal allotment, for the following year, which they must accept on the maker's own terms and under conditions of the most rigorous nature.

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As a class the carriage trade embodies a clean, wholesome, business-like group of men, well schooled in the lore of their line and in many cases, born and bred to it. Once learning the novel conditions to be encompassed in the handling of motor vehicles, they are likely to prove a useful and independent contingent and therefore a welcome addition to the forces at work in the industry. At the same time, such are their methods in some instances and so poor their grasp of the swift-moving progress of the industry that it is inevitable that some of them should fall victims to the very novelty of the conditions under which they are called upon to work. Others are likely to develop into a strong and useful addition to the automobile dealers' ranks and to those of the makers, as indeed some already have done.

Wierd Effect of the Boston Show.

Until The Automobile of last week made its appearance, it is reasonably certain that none of the exhibitors and not even the management of the Boston show thoroughly realized how terribly profound and how marvellously mouthfilling is that function, or what a peculiar niche it occupies. But thanks to the intensified vibrations of a three cycle brain possessed by the Automobile, the status of the Boston show now is fixed for all time and in words so exquisitely opaque that not even a Fiji Islander or a babe in arms can fail of quick understanding and rounded appreciation. List to this charming flow of lumpid description:

Pyramided superiority is the summation of the increments for quality, eked out of all the cars, but the height of the pyramid, and its nice proportions, gained immensely at the Boston show, due to the presence of cars of splendid promise, exhibited for the first time, braving the metropolis of the sagaciously conservative, at small risk of adverse criticism, due to the enlightened state of automobile designing on the one hand, and the profusion of superior materials to be had for the asking. . . . . It was regarded as distinctly elevating to go into the Boston show for no other purpose than to critically examine the newcomers, basking in the sunlight of conservative features, strong with good materials and bristling with that formidable array of armament, beaten into form sublime in the smithy of simplicity, launched in a sea of art.

If The Automobile now will but set that stuff to music and require its other half, the Motor Age, to sing or to whistle it. the summation of the increments will not have been performed in vain.

BROOKLYN DEALERS OPPOSE SHOW

Hockey Promoters Scent a Good Thing and Secure Local Club's "Sanction"—But the Trade Says Nay.

As the skating and hockey seasons have about spent themselves, C. H. Green and E. J. Rowe, who are said to be the lessees of the Clermont Rink in Brooklyn, N. Y., have hit upon an automobile show as being a good magnet with which to attract 50 cents pieces from the purses of Brooklyn folk. Accordingly they have programmed a show for the week April 10-17, inclusive, which according to a neat prospectus, they have issued, has been "sanctioned by the Long Island Automobile Club," and will be "the most beautiful automobile show ever held in America." Fifty-six spaces have been laid out in the rink, the prices ranging from $110 to $300, which would net a tidy income to say nothing of the gate receipts. Green and Rowe figure as managers of the show and as the "honorary committee of the Long Island Automobile Club," a goodly part of the membership roll is employed.

Because of its "sanction," the Long Island club is supposed to be due to obtain a "rake-off," but despite the fact the Brooklyn trade is not likely to stand for the plucking. Eighteen of the local dealers have jointly expressed their disapproval and will have nothing to do with the affair.

Thomas and Houpt Fix Date for Parting.

The E. R. Thomas Motor Co.'s New York branch, which as the Motor World stated in December last would be established with W. B. Hurlburt as manager, will be established April 1 in the store at Broadway and Sixty-third street, now occupied by the Harry S. Houpt Co., the Thomas agents. On that date the Houpt company will take over Mr. Houpt's interest in the Herreshoff and Houpt cars and will remove to Broadway and Sixty-eighth street.

Fellwock Buys a Larger Factory.

The Fellwock Automobile & Manufacturing Co., Detroit, Mich., has purchased the factory at Harriett and Virginia streets, in that city, which now is occupied by the Schelosky Table Mfg. Co. and will take possession about August 1st next. The purchase will permit of a large increase of production of Fellwock wind shields and other accessories.

Organized to Improve Electric Service.

The Electric Vehicle and Central Station Association is the style of an organization which grew out of a dinner during the Boston show given, it is said, by the promoter of a new publication to be devoted to those interests which is due shortly to make its appearance. The officers chosen are as follows: President, Frank J. Stone; secretary, H. F. Sands; treasurer, L. R. Wallis; executive committee, Day Baker, Col. E. W. M. Bailey, S. G. Thompson, A. C. Gray, A. F. Neale, J. H. Neal, E. C. Manson, C. B. Davis and N. T. Wilcox. The idea, it is said, is to bring more sharply to the attention of the central charging stations the advantages and profits which may accrue not merely from the charging of electric automobiles, but from their sales and care and repair.

COMING EVENTS

March 13-20, Minneapolis, Minn.—Minneapolis Automobile Show Association's show, National Guard Armory.

March 15-20, Rochester, N. Y.—Rochester Automobile Dealers Association's show, Convention Hall.

March 16, 17, 18, Chattanooga, Tenn.—Three days race meet and hill climb on Lookout Mountain.

March 17, 18, 19, Pittsburg, Pa.—Three days' endurance run.

March 22-27, Toledo, O.—Toledo Automobile Dealers Association's automobile show.

March 23-26, Daytona, Fla.—The Motor Contest Association's (Inc.) seventh annual international races, Daytona Beach.

March 24-27, Syracuse, N. Y.—Syracuse Automobile Dealers Association's first annual show, New York State armory.

March 25, 26, 27, Logansport, Ind.—Automobile show, old rink.

March 27, Atlanta, Ga.—Fulton County Automobile Club's third annual hill-climb, Stewart's hill.

March 27-April 3, Pittsburg, Pa.—Automobile Dealers Association's show, Duquesne Garden.

April 10, New York City—New York Automobile Trade Association's second semi-annual hill climb on Fort George hill.

April 15-17, Louisville, Ky.—Louisville Automobile Association's show, Coliseum.

May 18, 19, Norristown, Pa.—Norristown Automobile Club's endurance run, to Hagerstown, Md., and return.

May 19-22, Philadelphia, Pa.—Quaker City Motor Club's endurance contest, Philadelphia-Pittsburg and return.

Ajax-Grieb Men in New Positions.

H. M. De Silva, who for several years has represented the Ajax-Grieb Rubber Co. "on the road," has been appointed manager of the Ajax branch in Chicago, and L. B. Smith, who formerly had charge of the New York branch, has been succeeded by Joseph S. Gibbs. Smith, however, still remains in the Ajax-Grieb service; hereafter he will travel New York and Connecticut.

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ENDURANCE RUN A SCORCHING RACE

Fourteen Perfect Scores in New York-Boston Contest—Speed Laws Violated and One Fatality Results.

By the graciousness of policemen, constables, and others concerned in the enforcement of the speed laws of New York, Connecticut and Massachusetts, the misnamed "endurance run" between New York City and Boston on Thursday last, 11th inst., was allowed to finish. Had the guardians of the public safety done their duty as laid down by State legislation every contestant that finished the scorch would have been disqualified. The rules would not have permitted otherwise.

Of the twenty starters that left Columbus Circle, New York City, at one minute intervals, beginning at 6.30 a. m., 17 finished in front of the Mechanics Building in Boston the same night, and of that number 14 received perfect scores, as follows: W. W. Burke, Mora; A. D. Cordner, Acme; A. D. Hall, Matheson; C. S. Carris, Franklin; Guy Vaughn, Stearns; Arthur Dennison, Knox; V. P. Pisani, Zust; Ray McNamara, Premier; M. W. Batts, Stearns; C. S. Rothfuss, Matheson; L. R. Burns, Cadillac; J. I. Miller, Cleveland; H. A. Street, Cadillac, and C. W. Kelsey, Maxwell.

The "endurance run," or more properly the unholy scorch for the Chester I. Campbell trophy was arranged so that it was absolutely impossible for a contestant to follow the rules and at the same time not break any State laws. The schedule called for a minimum of 20 miles an hour and a driver was penalized one point for each minute late in checking into a station. No penalization was given for arriving ahead of time except that a contestant could not check in until the proper time, but late arrivals were penalized in proportion to their tardiness. The result was that every contestant had to maintain a speed of 30, 40 or even 50 miles at times to keep up with the schedule. The rule was that the arrest of any contestant for exceeding the speed limits would result in disqualification. Through the generousness of the police, therefore, 14 cars were enabled to finish with "clean scores."

Few figures as to the times made by the contestants between the various controls are obtainable, but it is stated that one driver reached New Haven 1 hour 14 minutes ahead of schedule, Hartford 39 minutes, Worcester 58 minutes, and Boston 35 minutes ahead. The minimum time allowed by law, was as follows: New Haven 80 miles, 4 hours; Hartford, 42 miles, 2 hours 6 minutes; Worcester, 79 miles, 3 hours 57 minutes; Boston, 44 miles, 2 hours 6 minutes.

All of the drivers were on time at New Haven with the exception of C. H. Beecher, whose car carried the unlucky number "13." Considerable mud, of the deep, sticky yellow variety, was encountered between New Haven and Hartford, but despite the heavy going 18 of the contestants reached that city without mishap, the absentees being Fred Dickinson and W. S. Cox. From Hartford to Worcester was comparatively easy riding, but the bad roads between the latter city and Boston were responsible for the dropping of several perfect scores. More than 100 points were dropped in the stretch of 40 miles.

Those drivers who failed to receive "perfect scores" apparently had good reason for it. W. E. Shuttleworth, who lost 6 points in the Haynes, explained that he had lost the road between New Haven and Hartford. Dickinson in the Kisselkar incurred his penalty through skidding into a curb and putting his car temporarily out of the running; he was assessed 165 points. W. E. Force, Lozier, lost two points for being late in checking at Worcester, but he protested, claiming that he was unable to reach the checker in time because of the congestion of cars at that point. Lacroix lost 16 points because of being detained at New Haven, and W. S. Cox, Coates-Goshen lost 50 points for being late after running into a stone wall outside of Worcester. C. H. Beecher, in the Atlas, was taxed 200 points, for being late at controls.

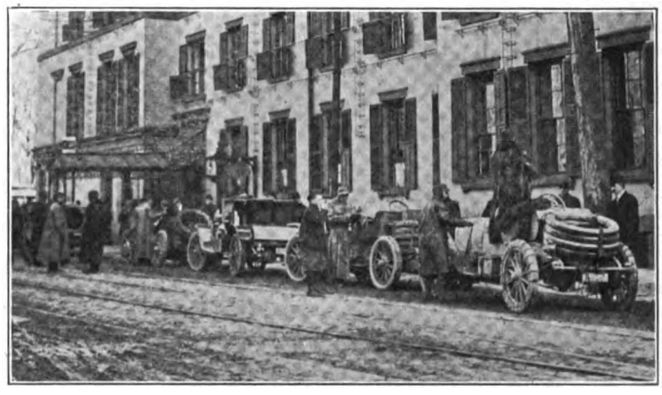
The scorch was attended by one fatality, and that occurred before the cars reached New Haven, the first checking station. The reports of the accident are varied, but a condensation of them shows that A. W. Wallace, a business man of Bridgeport, was killed while driving between Bridgeport and Fairfield. Wallace was in a closed coupe, the team being in charge of a coachman, and Wallace is supposed to have fallen out of the carriage when the horses, it is alleged, became frightened at the automobiles. The coachman did not know his employer was not in the coupe. The local authorities got busy and by some unknown astuteness they decided that Paul Lacroix had been responsible for the accident. Lacroix was apprehended at New Haven, and although he denied all knowledge of the affair, he was held in bail on four counts for his appearance in Fairchild, New Haven, Bridgeport and Stratford. Then he was allowed to proceed on his journey, but he lost his perfect score because of the delay.

The last leg of the course brought another mishap, but not to any of the contestants. E. P. Blake, together with two companions, started from Boston to meet the contestants. They met the scorching cavalcade at Worcester and turned around to accompany them into the Hub. Near Marlboro the car was overturned and Blake and his companions were thrown out, the former injuring his back to such an extent that C. W. Kelsey in the contesting Maxwell, took him to the Marlboro hospital. The others escaped with slight bruises. It was fortunate that there were not several more mishaps.

Lacroix was charged with refusing to stop when signaled at Stratford, of reckless driving in New Haven, of causing the accident at Fairfield, and of mutilating an American flag at Bridgeport. Lacroix was promptly cleared of the Stratford and New Haven charges and, on Monday was freed from all blame by the courts of both Bridgeport and Fairfield. In the morning he was given a hearing in the former city, on the charge relative to the flag mutilation and in the examination it was brought

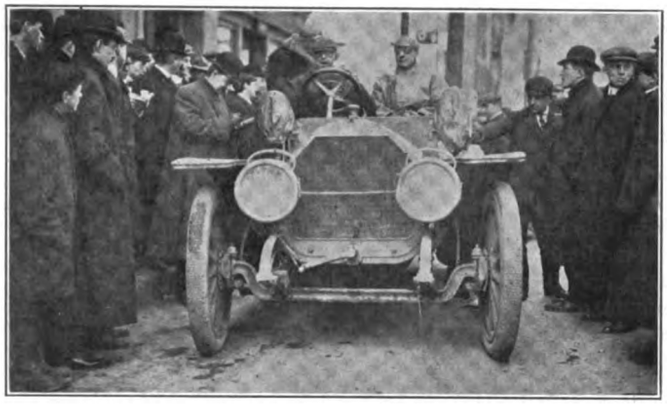


IN A TRAFFIC JAM AT NEW HAVEN



CHECKING IN AT NEW HAVEN CONTROL

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A. D. HALL, MATHESON, AT NEW HAVEN



C. S. CARRIS, FRANKLIN, AT NEW HAVEN

out that none of the police was in uniform; that the flag was not unfurled, and consequently there was no way in which Lacroix could distinguish it from a piece of red bunting. After hearing the testimony Judge Carl Foster immediately found the defendant not guilty.

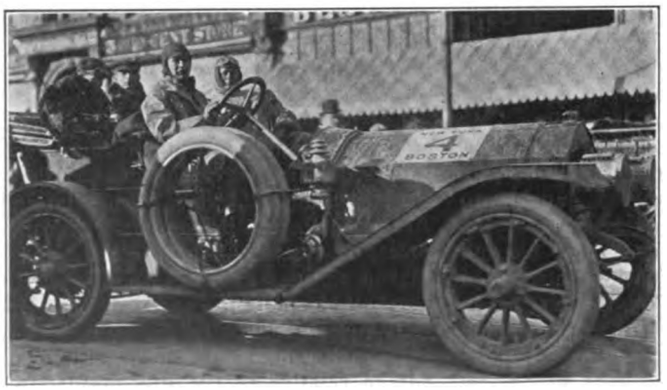
In the afternoon Lacroix was given a trial before Justice Bacon Wakeman in Fairfield. He was not represented by counsel. As soon as the court opened Grand Juror Clintus H. King, who acted as prosecutor, said that he had examined the witnesses privately and was satisfied that no blame could be attached to him, and therefore in the absence of counsel for the defendant would move that he be adjudged not guilty. The judge allowed the motion and Lacroix was completely exonerated.

Following the legal difficulties in Connecticut and the penalization consequent to the delay which was incident thereto, Paul Lacroix, who was held as responsible for the death of a local resident along the route of the New York to Boston scorch, filed a protest with L. M. Bradley, referee of the affair in an effort to have the 16 points which were charged against him quashed. After duly considering the protest, however, Bradley decided that the penalization must stand, arguing very justly that as the entry blank specifically provided penalties for tardiness at controls, and as the applicant admitted in his protest that he was tardy, he has no recourse but to accept the penalty. Bradley further indicates that the fact that the applicant, Lacroix, was discharged by the various courts has no bearing on the matter, save, that had he been convicted, he would have been disqualified outright by that provision of the rules which made violation of the speed law punishable in that way. That other contestants who, by their very records are shown to have merited disqualification on the same ground are permitted to escape disqualification only because they were not arrested and taken into court is not stated, though the inference is plain.

That any violation of Massachusetts law occurring during the race will not be suffered to go unpunished is made plain by a letter sent to Manager Campbell by the highway commission on the 13th inst. It states that the commission is investigating the matter and adds that "it will consider it sufficient cause for the suspension or revocation of any operator's license, and the suspension or revocation of any owner's or dealer's registration certificate whenever it ascertains that such operator, owner or dealer or their automobile or automobiles were involved in reckless operation or gross violation of the speed laws."



RAY McNAMARA, PREMIER, NEARING BRIDGEPORT



A. D. CORDNER, ACME, AT WORCESTER



C. H. ROTHFUSS, MATHESON, AT WORCESTER

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NEW ATTACK ON NEW JERSEY LAW

Issue Raised on Constitutionality of License Fees—Points Involving Freedom of Inter-State Traffic.

In a fresh attack on the constitutionality of the New Jersey automobile law, directed in concert by Charles Thaddeus Terry, John W. Griggs and John W. Harding, there has been raised the point which it seems should long ago have been raised, i. e., that the law does not constitute equal and exact justice and conflicts with the Constitution of the United States in that it abridges the right and privileges of citizenship guaranteed by that instrument.

The nominal complaint in the case upon which the trio of learned counsellors are engaged is Frank J. Kane, of New York, who was arrested in Paterson because, while his automobile carried a properly registered New York license, it did not carry a New Jersey registry. He has appealed the decision and fine which was imposed on him.

These points are made in the brief, which has been filed in the New Jersey Supreme Court:

1. The license fees exacted from owners of automobiles by the act of 1908 are not limited to the cost of registration and inspection, but exceed that cost to an extent so large as to require the court to determine judicially that they are intended as revenue measures.

2. These fees are a tax upon property, and as such are not laid in accordance with the requirements of the Constitution of New Jersey upon the true value of vehicles, but are arbitrarily fixed upon the basis of horse power capacity; hence they are illegal against all persons, whether residents or non-residents.

3. This tax cannot be supported as a privilege tax.

4. If the court shall be of the opinion that these license fees as revenue measures are valid as against residents of New Jersey, they are invalid with respect to citizens of other States because they conflict with the provisions of the Constitution of the United States; (a) They are a burden upon inter-State commerce; (b) they abridge the privileges of citizens of the United States; (c) they require as a condition of granting a license that citizens of other States shall authorize an agent in New Jersey to accept service of process in suits brought against such licensees, thereby further abridging their privileges as citizens of the United States, and denying to them the equal protection of the laws by discriminating against them in respect to such suits, in favor of residents of New Jersey.

5 Considerations of inter-State comity should induce the court so to construe this law, if it is reasonably possible to do so, as not to place the stamp of judicial approval upon an act which works unjustly and not inequitably upon citizens of sister States.

In support of the point covering the privilege tax, the brief discriminates between the natural rights of persons and the rights of corporations, which latter rights exist by virtue only of franchises. "The right of a citizen of another State to enter the territory of New Jersey," it contends, "and travel upon the public highways is not a privilege which can be either granted or withheld by New Jersey. The right subsists irrespective of the will or pleasure of the legislature of New Jersey. It is founded on the guarantee of free intercourse between the States. It is one of the privileges of citizens of the United States which the States are forbidden to impair."

To support the fifth point there is quoted at length a decision of the Appellate Division of the Supreme Court of New York in the case of a Hoboken hackman who was temporarily transporting passengers to the temporary piers of the North German Lloyd Company in Brooklyn following the destruction by fire of the Hoboken piers. The hackman was arrested for failure to take out a license in New York, as required by ordinance, and the Supreme Court of New York held that the upholding of a decision against the hackman would justify retaliatory measures on the part of New Jersey and would be inhospitable. A decision is not expected before April.

Cobe Cup for Stock Cars Accepted.

Following immediately after the official acceptance of the proffered Cobe trophy for a stock car race near Chicago, which took place at the Boston meeting of the board of directors of the American Automobile Association last week, a delegation of the Chicago Automobile Club which is promoting the event, made a thorough survey of the proposed Lake County, Indiana, course, with the result that it was pronounced as being not only satisfactory, but in many respects superior to the Briarcliffe circuit in Westchester county, N. Y., if not equal to the Vanderbilt course itself. While one short section still remains indeterminate, the measurement of the course as gone over by the official delegation on Sunday last, was 23.6 miles. It is proposed to make the race 400 and possibly 450 miles long, though this point has not been definitely decided as yet. There are two straightaways, one of 6 miles and the other of nearly 10 miles, while in other portions the course presents a serpentine contour sufficiently trying to tax the skill of the most experienced driver to the utmost. Practically throughout its entire length it is wide enough for two cars to pass.

Chairman Charles P. Root of the contest board of the club has increased the membership in his committee from three to five, in order the better to handle the work of the two days meet which is fast assuming large proportions. The membership as it now stands is composed of F. H. Trego, O. G. Temme, H. P. Branstetter, C. A. Tilt, B. Edwards, J. B. Diebler and F. N. Martin.

Dates Fixed for Detroit's Run.

This year the annual reliability run of the Detroit (Mich.) Automobile Dealers Association will be a four days affair, starting on May 10th and finishing on the 13th.

FRELINGHUYSEN BLOCKS REVISION

New York New Jersey Senator Holds up Colgate Bill for Amendment—Senate Extends the Speed Limit.

Although it was expected that the Colgate bill, which is several degrees more American-like than the existing Frelinghuysen laws, would come up for passage in the New Jersey Senate on Tuesday last, that more or less eminent New York New Jerseyman, Senator Joe Frelinghuysen, let it be known that he was still "on guard" and would strenuously oppose any effort to draw the teeth of his pet measure, and no action was taken. The Colgate bill proposed to increase the speed limit to 30 miles per hour and to permit non-residents to use the roads of New Jersey for 30 days for $1, instead of levying on them the same stiff fees which are exacted of residents of the State.

Frelinghuysen, however, thought that was giving too much for the money and in a subsequent conference decided that eight days for $1 is sufficient and the Colgate bill probably will be amended. On Tuesday, however, the Senate passed the Bradley amendments, extending the speed limit to 25 miles per hour and reduces the fees of justices of the peace to $2.85. Previously, the House had considered the Colgate bill and reduced the 30 miles an hour clause to 20 miles, and also defeated an amendment proposed by Representative Meyer to increase the fees. The House, however, unanimously passed another Colgate bill aimed at "joy riders." It provides that any one driving a car without the positive consent of the owner or while intoxicated, shall have license revoked and be adjudged guilty of a misdemeanor.

North Carolina Law Exempts a County.

North Carolina has placed a new automobile law on its books which will become effective July 1st next, but which remarkable to relate exempts from its operation the little seacoast county of New Hanover in which Wilmington, the chief city, is located. The law imposes a registration tax of $5, annual renewal fee of $1. The county in which the owner lives is to receive $3 of the initial $5 payment for the benefit of the road fund. Speed is limited to 25 miles an hour on rural roads and 12 miles in incorporated towns, except in business portions, where eight miles is the limit. There are regulations as to precaution in passing frightened horses and a lot of machinery in detail for the application of the law. Violations are punishable by fine or imprisonment, and the third offense, in addition to any other punishment, entails the revocation of the registration certificate and the rights of the offender to operate a motor car in the state.

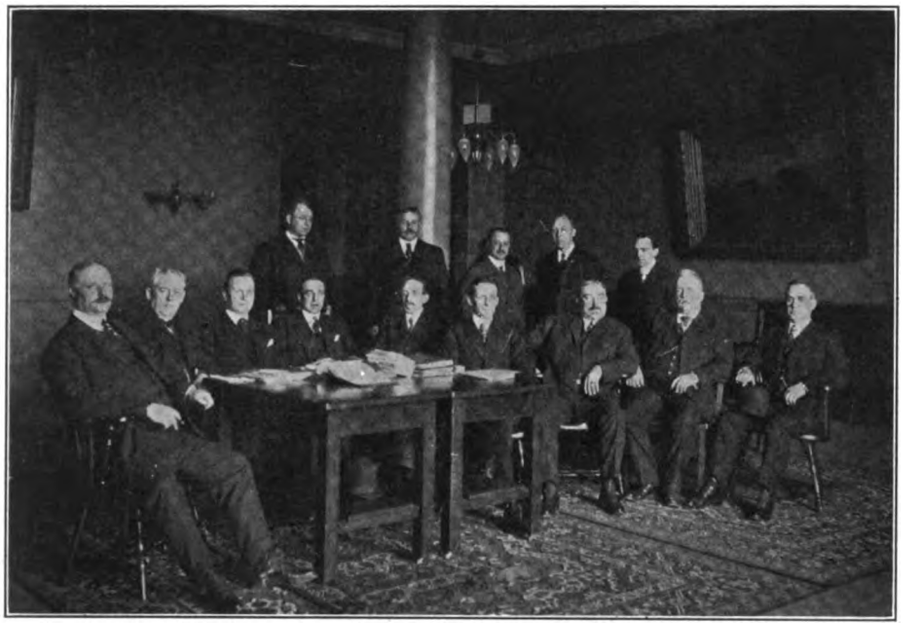
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SPEARE SUCCEEDS HOTCHKISS

Bay State Man Chosen to Fill Unexpired Term of A. A. A. President, Who Retires—New Director Chosen.

The retirement of William H. Hotchkiss, of the American Automobile Association, who has served ably in the presidency for two and a half years, and the election of Lewis R. Speare, president of the Bay State Automobile Association to succeed him, formed the most important feature of the quarterly meeting of the board of directors which was held in Boston on Thursday of last week, 11th inst. Judge Hotchkiss, whose retirement had been predicted prior to his re-election last fall, was compelled to resign owing to the assumption of his new duties as State Superintendent of Insurance of New York, a position to which he has only recently been appointed, and which would have left him no leisure for his duties as executive head of the A. A. A. His newly elected successor is thoroughly familiar with the work of the association, having served in the capacity of vice-president for several years, in addition to retaining a prominent connection with various other automobile organizations which is of long standing. He was elected to fill out the unexpired period of the former president's term of office, which will expire on December 1st.

EXECUTIVE COMMITTEE OF THE A. A. A.



The top row from left to right—1, E. P. Chalfant; 2, A. E. Lerch; 3, F. B. Hower; 4, S. A. Miles; 5, A. D. Converse. Bottom row, left to right—1, Louis R. Speare (the new president); 2, F. P. Coughlin; 3, F. H. Elliot; 4, C. H. Gillette; 5, T. H. Powers, Jr.; 6, Francis Hurtubis; 7, W. H. Chase; 8, H. R. Burbeck; 9, E. T. Whitmore.

At this meeting also the Colorado State Automobile Association, comprising six automobile clubs with a membership upwards of 650; and the South Dakota Motor & Vehicle Association, comprising six county motor clubs with a membership of 300, were admitted to State association membership, thereby making in all twenty-seven State associations affiliated with the National body, and adding nearly 1,000 names to the membership of 20,000. The Lookout Mountain Automobile Club of Chattanooga, Tenn., was elected to membership as an unfederated club in the A. A. A.

George C. Diehl, of Buffalo, was appointed by President Speare as chairman of the A. A. A. Good Roads Board; also chairman of the National Convention Committee, succeeding C. Ogden Neff, of Cincinnati, whose resignation was accepted with regret. Mr. Diehl is a member of the Board of Governors of the Automobile Club of Buffalo, county engineer of Erie county, and was chairman of the committee on practical demonstration at the first annual good roads and legislative convention of the A. A. A., held in Buffalo last July, and is therefore well qualified to take up the important duties assigned him.

The deed of gift of a trophy for a stock chassis race donated by Ira M. Cobe, president of the Chicago Automobile Club, was accepted, with the approval of the contest board, and was referred to this board with power to conduct the race, which is to be run annually until the same person wins it twice. Only members of Clubs in the A. A. A. can compete for the trophy, and during the next two years the race must be run within 50 miles of Chicago. The distance must not be less than 250 miles, and it cannot be held on any horse or bicycle track.

P. M. Milner, president of the Motor League of Louisiana, was elected a member of the board of directors to fill the vacancy created by Judge Hotchkiss's resignation and the election of President Spear. Those present at the meeting were: First Vice-President Lewis R. Speare, president Bay State A. A., presiding; Frank B. Hower, of Buffalo, chairman A. A. A. contest board; E. P. Chalfant, general manager A. L. A. M.; S. A. Miles, general manager N. A. A. M.; A. D. Converse, vice-president Massachusetts State A. A.; J. P. Coghlin, president Worcester A. C.; A. E. Bliss, president Massachusetts State A. A.; W. H. Chase, Wachusett A. C.; C. H. Gillette, secretary Connecticut A. A.; W. B. Lasher, A. C. of Bridgeport, Conn.; L. J. Powers, Jr., Springfield, Mass.; A. E. Lerche, president A. C. of Springfield; W. W. Brown, president A. C. of Vermont; Francis Hurtubis, of Boston; E. F. Whitmore, Willimantic, Conn.; F. H. Elliott, secretary A. A. A.; H. R. Burbeck, North Abington, Mass.

A. A. A. Sanction for Daytona Meet.

Clouds which for a time threatened to overshadow the forthcoming Daytona race meet with a storm of difficulty over the question of sanction, at length have been cleared away by the issuance of the official certificate of the contest board of the American Automobile Association. Entries for the meet, which is to take place March 23-26, were to have closed on Thursday of last week, but have been extended one week. In sanctioning the affair the contest board named S. A. Miles general manager of the National Association of Automobile Manufacturers, as referee, while Alfred Reeves, general manager of the American Motor Car Manufacturers Association, was nominated to serve as official representative of the board. It was agreed that entrants shall use A. A. A. entry blanks in conjunction with the original blanks, and further, to strike out any reference in the original blanks to the Automobile Club of America and to international races. The applicant also agreed to issue an order on the Merchants Bank of Daytona to hold the prize money for payment to the various winners on order of the referee, Samuel A. Miles, of Chicago.

Protests Against Women as Contestants.

Influence from the manufacturer's side is being brought to bear on the contest board of the American Automobile Association to eliminate the feature of women drivers from the forthcoming Glidden touring contest. The movement took the form of a request transmitted to the board by a number of representative manufacturers, who met in New York recently, that the board adopt a rule to the effect that "only males of 18 years or over be eligible to take part as contestants or drivers in the annual tour of the American Automobile Association." Although no action has yet been taken in the matter, the attitude with regard to it may be described as such as to make its adoption seem likely.

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Two New Cars Appear at Kansas City Show

To the average easterner it is not readily appreciated that Kansas City is the third largest distributing point in the country, but whether or not, such is the claim made for it by the local dealers, which held the boards in Convention Hall during all of last week. Hence the "K. C." show was an event of no mean importance, even though coming at a time when practically all the exhibits are representative of products which already have been uncovered at earlier exhibitions. Something like 170 vehicles were displayed, thus placing the exhibition well above the ordnary level of purely local shows; and these represented the products of some half a hundred makers.

Unusual success was achieved in so masking the bare ironwork of the hall as to temper its appearance of great size and prevent the show from seeming scattered and lost. The ceiling and walls were closed in with bunting in white and green tints, the same hues appearing in the surrounding arcade and in the balconies where the exhibits also were placed. For divisional boundaries vertical columns entwined with greenery and topped with electric globes aided materially in producing the desired effect, as did the occasional use of potted palms. But the piece de resistance of the decorative scheme was the frieze which surrounded the wall panel just below the ceiling and which was laid off in separate oil paintings representing picturesque spots along the old caravan route leading out into the great West in the days when that trail was the main thoroughfare between Kansas City and Mexico. The pictures were painted from photographs taken at points depicted.

Among the cars presented were two of local origin which were absolutely new. One of these, the Gleason, is made by the Kansas City Vehicle Co. The machine is of the low-priced order, made in a variety of body equipments to suit the demands of pleasure or utility uses, and equipped with medium sized wheels and solid tires. The motor is a 16 horsepower, twin-cylinder, opposed affair, with mechanically actuated valves, mounted in front and driving through to the live rear axle where is mounted the selective sliding change gear. Another form which is cataloged has the motor and change gear mounted in front on a sub frame, while the differential and axle casing contains the rather unusual formation of a bevel reduction driving the differential through a pair of spur gears. The wheels of this machine are 38 inches in diameter, shod with 2-inch oval tires. The road clearance is 14½ inches, and the wheel base is 90 inches.

The other newcomer was the Wonder, made by the Wonder Motor Car Co., which is of the buggy type, and also is intended to serve distinctly utilitarian purposes. To this end, it is equipped with a long box body of the so-called democrat or beach-wagon type, with a removable rear seat which may be demounted in order to provide adequate space for light loads.

As has been the case with all local shows this year, the matter of attendance proved no disappointment to the management, despite the fact that the show opened in a rainstorm and that the second day was marked with the advent of a small sized blizzard. The show was held under the direct management of the Kansas City Automobile Dealers Association (Inc.), W. S. Hathaway acting as chairman of the show committee. The list of automobile exhibitors was as follows:

Automobile Sales Co., Pope-Hartford; Buick Auto Co., Buick; Fletcher Cowherd, Jr., Auto Co., Corbin, Royal Tourist, Rauch and Lang electric; Central Auto Co., Thomas, Cadillac; Demster Machine Co., Locomobile; John Deere Plow Co., Velie; Ettwein Motor Car Co., Mora, Crawford, Stoddard-Dayton, Welch, Fritchle electric; Ford Motor Car Co., Ford; Franklin Motor Car Co., Franklin; Kaw Valley Auto Co., Mitchell; E. P. Moriarty & Co., Packard, Stevens-Duryea, Chalmers-Detroit, Woods electric; W. H. McIntyre & Co., McIntyre high wheel buggy; Tebeau Motor Car Co., Stearns; Western Motor Car Sales Co., Overland, Brush, American; Dey Motor Car Co., Pierce Arrow; Jackson Motor Car Co., Jackson; Maxwell-Briscoe Auto Co., Maxwell; Midland Motor Car Co., Peerless, Oldsmobile, Matheson, Detroit and Waverley electrics; Missouri Valley Auto Co., White steamer, Dorris, Premier, Reo; Rambler Auto Co., Rambler; Studebaker Bros., E-M-F., Studebaker and electrics; Woodward Auto Co., Knox; Bruenning Bros. Auto Co., Apperson; Columbus Buggy Co., Electric; Great Western Auto Co., Great Western; Moon Motor Car Co., Moon; C. L. Taylor Motor Car Co., Regal, Marmon; Wonder Auto Co., K. C. Wonder; Auburn Motor Car Co., Auburn; Babcock & Co., Babcock electric; Bradley, Alderson & Co., Fuller; Hollister Auto Co., Great Smith; L. W. Scott, Stanley steamer; Selden Motor Car Co., Selden; Winton Co., Winton Six.

The following displayed accessories: Fidelity Oil Co., Vanguard Mfg. Co., Columbus Buggy Co., Keystone Oil Co., Holcker & Elberg, E. P. Moriarty & Co., Pioneer Auto Top Co.

Minneapolis Show Uncovers Two New Cars

While Chicago and Boston, of the greater shows, have in times past laid stress upon the soul of music as a means of charming the show goer, it remained for Minneapolis to introduce real vaudeville for this same laudable purpose.

In common with the other and more familiar forms of show announcement, the preliminary introduction of the second annual show event, which opened in the new Armory on Saturday last, 13th inst., and will run through to the end of the present week; it was advertised that vaudeville entertainment would be provided in a suitably appointed place, and that the show, with various changes in the bill, would be given twice daily, afternoon and evening. Of course, moving pictures of automobiles whisking around hairpin turns, turning upside down and otherwise misbehaving themselves, form an important part of the program.

But apart from this feature, the Armory decorated in primrose and purple, encloses a very wide-awake and representative lot of exhibitors—some 50 of them—who are exhibiting a good line of standard cars, together with one or two newcomers of local production. One of these is the Kato, which is built by the Kato Auto Co., of Mankato, and is a commercial vehicle. Another is the Wolfe, which is produced by the H. E. Wilcox Motor Car Co., in Minneapolis.

The latter machine is built both in 2 and 3 ton styles, and is of generally standard construction in so far as its mechanical arrangement is concerned. As is the case with so many commercial vehicles built at the present time, the body is adapted to suit the needs of the purchaser, and the chassis alone figures as the stock element in the vehicle. The motor is rated at 30 horsepower, and is of the four-cylinder vertical pattern, with cylinders cast in pairs and measuring 4¼ by 4½ inches, bore and stroke. Self-contained engine lubrication, complete double ignition, with Bosch magneto and storage battery and valves arranged all on one side to develop the maximum of engine accessibility, are among its special features. Transmission is through a leather-faced cone clutch, and three-speed sliding change gear to the counter shaft, from which the rear wheels are propelled by double side chain connection. White brass and bronze bearings are used on the engine and transmission bearigs, but the axles have the Timken roller bearing equipment.

The full list of exhibitors is as follows:

Automobiles—Barclay Auto Co., Thomas and Chalmers-Detroit; Black Mfg. Co., Black motor buggies; Deere & Webber Co., Velie; East Side Automobile Co., Oakland and Gyroscope; Cartercar Co., Cartercar; Fawkes Auto Co., Rambler, Overland, American, Reo and Holsman; Haynes Auto Co., Pennsylvania, Welch, Midland and Regal; Kato Auto Co., Kato commercial;

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Kemp Bros., Automobile Co., Brush; La-Crosse Implement Co., Jackson; Maxfield Auto Co., Kisselkar; Michigan Auto Co., Knox; Motor Buggy Mfg. Co., motor buggies; Northwestern Auto Co., Ford; Pagel-Allen Auto Co., Schacht; Pence Auto Co., Stevens-Duryea and Buick; Victoria Motor Car Co., Pullman and A. L. Co.; Wilcox Motor Car Co., Wolfe commercial vehicles.

Accessories—Beckley-Ralston Co., D. C. Bell Investment Co., Buchanan & Wiley, Edwards Cycle Co., E. T. Farley, Fenstermacher, Garage Equipment Co., Hawkes Demountable Rim, Hudson & Thurber, J. N. Johnson, Joy Bros, Lyon Motorcycle Co., Minneapolis Electric Motor Co., Minneapolis Motorcycle Co., National Gauge & Register, W. M. Pease, Pierson-Wilcox Electric Co., Plant Rubber Co., Pure Oil Co., Rubberite Mfg. Co., St. Paul Auto Co., Shadegg Engine Co., C. J. Smith, Stata Oil Co., Topheim Mfg. Co., Thiem Mfg. Co., Universal Wind Shield Co., Wheeler Auto Co., Western Crucible Casting Co.

Wisconsin Holds Its First Show at Milwaukee

For the most part the local shows of the season are being promoted either directly by or under the auspices of the dealers' associations, of which organizations such a large and flourishing number are in existence. But in Milwaukee the local enterprize of the owners was manifest last week in the holding of the city's first show, and the first in the State, which ran for three days, Thursday, Friday and Saturday. Without the aid of professional promoters, the Milwaukee Automobile Club succeeded in inaugurating and carrying through to a successful culmination what was regarded as a remarkably fine exhibition of its class. The Hippodrome on Wells street was called into requisition for the purpose and proved none too large for the display of the 90-odd cars and the stands of the score and more of accessory exhibitors who for the most part filled the balcony spaces.

Among the 30 exhibitors of cars were several displaying vehicles which have not before been shown this year. Thus the Johnson Service Co., a local concern, and one of the rare and conspicuous examples of persistant adherence to steam practice, presented their car of the same name, which, though it has been shown in New York in previous years, is better known in the middle West than in the East. This machine, it will be remembered, is distinguished by the use of poppet valves and characteristics usually identified only with gas engine practice, such as single acting pistons and other features of general construction, such that it readily might be taken for an internal combustion engine were it not for the presence of the boiler.

Another of the newcomers was the Sternberg commercial vehicle, a 2,000 pound express or delivery wagon mounting such features as a 20-horsepower opposed motor of 5 by 4 inch cylinder dimensions, single disc friction drive, and all-steel wheels. The Sternberg Mfg. Co. also is a local concern, and its product is so recent in origin as to be little known as yet outside its home town. It also is produced in a larger four cylinder type.

The exhibitors of complete vehicles of all sorts were as follows:

Automobiles—Akin Motor Car Co., Stevens-Duryea and Columbus electric; American Automobile Co., Apperson, Pierce-Arrow and Babcock electric; Bates-Odenbrett Co., Buick and Winton; G. W. Browne Motor Co., Marmon, Mitchell and Holsman motor buggy; Willard Campbell, Haynes; Curtis Automobile Co., Reo; Emil Estberg, Pope-Hartford, Waverley and Woods electrics; Excelsior Motor Car Co., Cameron; Gove Automobile Co., Jackson and Regal; W. L. Hibbard Motor Car Co., Chalmers-Detroit and Thomas Flyer; Hickman-Lauson-Diener Co., Cartercar and Ford; High Wheel Auto Co., International; Johnson Service Co., Johnson steamers; Jonas Automobile Co., Cadillac and Peerless; Kisselkar Co., of Milwaukee, Kisselkar; Kopmeier Motor Car Co., American and Detroit electric; McDuffee Automobile Co., Stoddard-Dayton; Ogden-Farwell Garage, E-M-F. and Studebaker gasolene and electric; Olds Motor Works, Oldsmobile; Rambler Garage Co., of Milwaukee, Rambler; Riverview Automobile Co., Moon; Sanger Automobile Co., Franklin; E. F. Sanger Co., Maxwell; Schreiber Motor Car Co., Knox and Locomobile; Stephenson Motor Car Co., Overland, Speedwell and Welch; Sternberg Motor Truck Co., Sternberg trucks; Welch Brothers Motor Car Co., Packard and Rauch & Lang electric; White Auto Co., White; Wisconsin Auto Exchange, Midland and Stearns.

Accessories—Charles Abresch Co., Julius Andrae & Sons Co., Beaver Motor Co., Bland-Mueller Auto Co., Cream City Trimming Co., General Accumulator Battery Co., Theodore M. Glassner, Goodyear Rubber Co., Philip Gross Hardware Co., Theodore Habhegger, Harley-Davidson Co., Kamlee Trunk Co., King Leather Tire Co., Arthur Koenig Co., Kopmeier Motor Car Co., T. H. Kuenzli, Lembske-Briggs Coil Co., A. J. Monday, Pattison & Ellis, Wadhams Oil & Grease Co., Wold Bros., George Wordingham.

Portland, Oregon, Holds a Show.

In its westward march, the local show movement has laid hold upon the State of Oregon, with the result that Portland motorists and would-be motorists were held in its thrall during the whole of last week, 8-13th insts. Under the auspices of the Portland Automobile Club, something like 100 vehicles were gathered together, covering the entire price scale, and representing all known types. The following agencies exhibited:

Automobiles—Archer, Combs & Winters Co.; C. B. Brown, American Roadster; F. A. Bennet, Mitchell, Stoddard-Dayton, Reo and Rapid commercial; Covey Automobile Co., Pierce-Arrow and Cadillac; Crowe & Burgess, Marmon, Overland and Oldsmobile; Graham Motor Car Co., Stevens-Duryea and Selden; Idanha Motor Car Co.; J. B. Kelley, White and Ford; W. L. Keats Automobile Co., Pope-Hartford, Packard, Thomas, Chalmers-Detroit and Buick; Maxwell Agency, Maxwell; Oregon Electric Vehicle Co., Columbia electric; Portland Motor Car Co., Peerless; Renault Freres, Renault; Studebaker Bros. Co., Northwest, Studebaker and E-M-F.; Tourist Car Co., Tourist; Winton Auto Co., Winton.

Accessories—Backus & Morris, S. F. Bowser & Co., Ballou & Wright, Firemans Fund Insurance, Firestone Tire & Rubber Co., Freer Cutlery Co., J. R. Greenfield, Hassam Paving Co., Jeffries & Gaylord, Kline Machinery Co., F. P. Keenan & Co., Palmer Bros., Valvoline Oil Co.

Rochester's Second Show Draws Well.

Twice blessed this year in the matter of shows, Rochester, N. Y., is enjoying its second entertainment of the sort during the whole of this week. Because of a conflict of interests the Automobile and Motor Trades Association and the Rochester Automobile Dealers Association decided to gather their clans independently this year, and in consequence, Convention Hall is having its second run of automobile visitors this week, under the auspices of the latter organization. This is also the second annual exhibition of the dealers' association. Despite the recent occurrence of another show in the same building, the effort to secure an adequate list of exhibitors has been more than successfully rewarded. For not only filling the regularly laid out spaces in the main hall, the show overflows into the surrounding corridors until every available inch of space has been taken. This may be on account of the caryatides. The caryatides, it should be explained—and is by the press agent of the show—were priestesses of the ancient temple of Artimesia. But in their present guise, they serve as guardians of Convention Hall, Rochester, N. Y., about which they are grouped in heroic size. Within, the usual forces of statuary, bunting, flowers, lights and music have been marshalled to render the show attractive.

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NEW YORK TO SEATTLE PROGRAM

Date Fixed for Transcontinental Contest—Rules Forbid Flanged Wheels for Negotiating Railway Tracks.

All doubt as to the status of the transcontinental contest from New York City to Seattle for the M. Robert Guggenheim trophy—whether international or otherwise—was dispelled this week by the issuance of entry blanks. It will be termed the "International Contest for the M. Robert Guggenheim Transcontinental Trophy," and as stated upon the entry blanks will be promoted under the auspices of the Alaska-Yukon-Pacific Exposition and of the Seattle Automobile Club under the sanction of the Automobile Club of America.

The date of departure from New York City has been fixed for Tuesday, June 1, and the entries close on May 15th, as disclosed by the entry blanks.

The salient feature of the rules for this 3,868 miles race across the continent is their beautiful simplicity. The most important one is Rule 3, which provides for the replacement of spare parts as follows:

There will be no observers on the cars. The technical committee of the Automobile Club of America will stamp each car before departure as follows: the side members of the frame, front and rear axles, engine base and cylinders, transmission case and steering gear. Contestants will be allowed to replace, without penalization, any of these parts, except frame, twice during the contest, but such reserve parts must be stamped by the committee before the contest and one set must be held at Chicago and the other set at Cheyenne, Wyo. These parts will be in charge of a member of the committee and may, when desired, be secured only from either one of these two places. The winning car must bear the stamps on arrival at Seattle. All other parts can be changed at will.

As the strain of driving might be too great for one man, it is provided than any member of the crew of a contesting car, who shall have ridden in that car continuously from New York, may drive. Each competitor may have as many members to his crew as he desires, except that no members can be added to any crew after the start.

Entrance fees are fixed as follows: For one car, $350; for two cars of the same make and entered by the same owner, $600; for three cars of the same make and entered by the same owner, $750; for each additional car of the same make and entered by the same owner, $100.

In addition to the Guggenheim trophy, which is advertised as being worth $2,000, and which will be given to the first driver reaching Seattle, cash prizes or plate, at the option of the contestant, are provided for. In addition to the trophy the driver of the first car will receive $2,000 in gold; the second, $1,500; the third, $1,000; fourth, $500; fifth, $300. It is stated that the third, fourth and fifth cash prizes will not be given unless there are more than ten entries and unless the fourth and fifth cars arrive at the finish within seven days of the arrival of the second car.

In order that the cars shall travel over the roads the entire distance, it is provided that no contestant can carry on his car or use at any point during the race, wheels equipped with flanges suitable for traveling on railroad tracks. Official checking stations will be established en route.

Changes in New York Carnival Plans.

A combination of circumstances has resulted in the determination of the Automobile Carnival committee of the New York Automobile Trade Association to alter the date of the second annual carnival from the week of April 5th to the week beginning April 26th. This announcement followed a meeting of the committee held on Thursday of last week, and resulted in a re-arrangement of the dates of the various events incident to the carnival program, as follows:

Monday, April 26, hill climb; Tuesday, April 27, straightaway races and speed trials; Wednesday, April 28, souvenir day and banquet; Thursday, April 29, gymkhana games, obstacle races, etc.; Friday, April 30, endurance run; Saturday, May 1, afternoon carnival parade.

As the activities of the committee continue, further details of its plans are unfolded. The parade, which as was the case last year, will be the feature most appealing to the general public, again is to be presided over by a king and queen who will be chosen by popular vote. It has been decided that the ballots for this purpose shall be sold at 1 cent each, and shall be placed in the hands of the various tradesmen at an early date, when fuller details of the scheme will be announced. Entry blanks for the parade will be issued only to those who contribute to the carnival fund, in return for which cars which they enter will be given position numbers in the line. No advertising or other placards other than those numbers will be permitted. At the same time the parade will be open to all, the requirement of previous entry applying only to those who are to compete in the decorated section.

A special sub-committee has been appointed to look after the interests of the endurance run which it is planned to hold on Friday of Carnival Week. Alex Schwalbach has been appointed chairman and has announced that the following members will assist in the work: Herman F. Kuntz and Coker F. Clarkson, of the Association of Licensed Automobile Manufacturers; Alfred Reeves and L. M. Bradley, of the American Motor Car Manufacturers Association; E. L. Ferguson and F. L. Harbach, secretary of the Quaker City Motor Club.

Carnival headquarters have been opened in the main store of the American Building, Columbus Circle and Broadway.

READY FOR THE SPEED CARNIVAL

Well Known Drivers Who Will Compete in Four Days Meet at Daytona—The Big Events on the Card.

Unless the unexpected happens it will be surprising if any startling performances are made at the seventh annual speed carnival to be held on the Florida zeach at Ormond, next Tuesday, Wednesday, Thursday and Friday, 23d-26th insts. At a late hour yesterday, according to information secured from the office of W. J. Morgan, the New York representative of the Florida East Coast Automobile Association, entries of only a dozen cars have been made, although it was stated that several other entries made with the Florida representatives had not yet reached New York.

Hugh D. McIntosh, a prominent Australian sports promoter, reached New York last week and while here he purchased the big Benz racer, which has been shipped to Florida and which will be driven, it is stated, by David Bruce-Brown, the young New Yorker who last year acted as mechanic for the late Emanuel Cedrino. Ralph De Palma will drive the Fiat "Cyclone" in all events in which it is eligible. The other well known drivers and their cars who will enter the speed trials and long distance events are Lewis Strang, George De Witt, Robert Burman and possibly Louis Chevrolet, with western-made cars; Herbert Lytle, who probably will drive the Renault; H. J. Kilpatrick, with the 120 horsepower Hotchkiss, and James Laughlin, 3d, Cleveland. W. H. Peters, of Daytona, has entered a Pope-Hartford and another Hotchkiss, and entries have been made for a Chalmers-Detroit and a Cadillac, although the names of the drivers are not obtainable. The motorcycle and bicycle events are well filled.

The program is a lengthy one, consisting of twenty-two events, of which nine are for automobiles. These include the 200 miles Florida stock car price class race, with five classses; the 200 miles piston displacement class race, with four classes; the 100 miles Minneapolis trophy race, which has been won once by Fiat, Mercedes and Napier cars, and must be won twice to become the property of the winner. The other events are the two miles a minute race against Demogeot's record of 58⅘ seconds; the one mile race for the Dewar trophy; the international free-for-all at one, five and ten miles heats; the 5 miles Southern price and horsepower handicap for residents of Southern States; the 50 miles open to Vanderbilt Cup cars, and the mile record trials.

It is planned to hold the events each afternoon during the meet because high tide prevails in the morning. No schedule has been arranged and the races will be run according to the judgment of the referee, who will be S. A. Miles.

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ESSENTIALS OF GRINDING WHEELS

Atomic Elements of Abrasives and How They Act—Natural Substances Excelled by Artificial Products.

Increasing use of the grinding wheel by automobile manufacturers to secure a more rapid and accurate finishing of motor car parts, makes the nature of the process and the composition of the abrasive wheels deserving of more than passing notice. The process of finishing the surface of metals, or other materials by grinding, though familiar mechanically, is not so generally understood in its theoretical aspects. It consists of bringing the work to be ground, in contact with a grinding wheel, revolving at high speed, in which the hard, sharp particles of emery or other abrasive, on the working face of the wheel cut off minute chips.

When subjected to microscopical examination, these chips bear a resemblance, on a smaller scale, to those cut off by lathe or planer tools. Each of the small cutting points on the face of the wheel may be likened to individual tools and, like them become dull after being used for a while.

Just there the selection of the proper grade of wheel for the work becomes important. That the wheel may continue its efficiency the particles of abrasive, after losing their keenness should break out of the bond, which unites them in a circular form, and give way to new cutting edges. If the strength of the uniting bond, or cement-like substance in which they are carried, be so great as to prevent the grain breaking off, the cutting face of the wheel becomes glazed over, or dulled, and tends to burn the work unless it is frequently dressed to renew its cutting face. On the other hand a bond of soft quality will release the granules before they have been utilized to their full extent, and thus shorten the life of the wheel.

Grinding wheels are thus made in several grades of varying degrees of hardness, and the wheel selected for a given piece of work should be exactly adapted in its yielding qualities for the purpose which it is intended to serve and in this respect the hardness of the wheel is in proportion to the nature of the bond. The term hardness, used in this connection thus applies equally to the quality of the abrasive and the hardness of the retaining medium. The abrasive itself should possess to its highest degree the right combination of hardness, keenness and temper. In the past hardness has been deemed of primary importance, this consideration being in large measure due to the practice of various manufacturers who have exploited the supposed superiority of this quality over all others, thus giving rise to the erroneous impression. Physical and scientific tests fail to support this impression, however. While it is important that a good abrasive should have the right degree of hardness, this requisite is not by any means the premier essential. This is attested by the fact that in the cutting of metals, the hardest tools are not always the most efficient and that the temper is varied in accordance with the quality of the work. Therefore, since grinding consists in removing small chips in large quantities, the right temper of the cutting tools becomes of corresponding importance.

By "temper" is meant the strength of the grain and the character or nature of its fracture, under working pressure. Blending the degree of temper and hardness to the proper proportions, forms the most essential qualification of an efficient abrasive. An unequal development of either quality at the expense of the other will fail to produce the desired efficiency, which can be obtained only by the proper combining of both, in the formation of the grain. Similarly, when considered from an independent standpoint and without regard to other necessary qualifications, extreme toughness of an abrasive grain or its high resistance to crushing pressure is not a prime essential. Specially treated steels possess this quality to a large degree, but it requires small argument to demonstrate that particles of steel if bonded together in the shape of a wheel would not have a high cutting efficiency owing to the character of the granular structure of the metal.

For the highest efficiency under working conditions a grain of abrasive that is slightly dulled, but not worn out, should not entirely sever itself from the retaining elements. Its temper should be such that it will fracture and expose new cutting edges to the work. Conversely it should possess a sufficient degree of hardness to remain integral until its cutting point becomes dulled, and when breaking it should split with a sharp, crisp fracture, to give a new and keen cutting edge. The character of the fracture depends upon the physical formation of the grain, its structure and crystalization, in other words.

In the composition of abrasive wheels emery, owing to its production in large quantities and consequent cheapness, has been largely employed. It is a mixed form of corundum, but contains a greater percentage of iron and silica.

In its natural state corundum passesses in a high degree the desirable qualities necessary in an abrasive suitable for grinding wheels and has been largely used for the purpose. But among its ingredients is found a variable percentage of iron and silica, which are undesirable increments and which may detract from its advantages.

In these days of rapid advances in the arts and sciences, a rapid demand has arisen for an abrasive superior to emery, or corundum. This demand has been met by the production in large quantities of several artificial minerals, which are produced under the intense heat of the electric arc, and which are known to the public under the various trade names of their makers.

Without entering too deeply into details, suffice it to say that these substances are produced through an artificial reproduction of the natural conditions of intense heat and pressure which produced the less perfect native elements, but guided and controlled by human skill and judgment in such a way as to eliminate such qualities as are found to be undesirable. As is true of corundum, the artificial abrasives are composed chiefly of crystaline aluminum oxide, its qualities of hardness and temper being regulated during production in a manner closely analagous to that in which the corresponding properties of steel are developed.

The mineral Bauxite, as the purest form of aluminum oxide found in nature, is largely employed for the purpose. After being inspected and sorted in various grades according to its composition, and washed, it is calcined, or subjected to high heat in the presence of the air, to rid it of all moisture. Subsequently, it is fused in an electrically heated crucible, and in the direct presence of the arc, whence it emerges in the form of an ingot. This huge, crystaline mass is then broken up and reduced to powder-like consistency by successive processes of crushing and grading.

Even here, the manufacturing process may be considered a counterfeit of natural methods, for as in the modern grinding wheels the abrasive is held in bond by substances which possess no cutting value in themselves, so in the sand-stone, from which the grind-stones are cut, which formed the earliest form of abrasive wheel, the fine particles of silica or sand were bound together by a soft, yielding medium which is useful only as a tool holder, for the minute cutters which are embedded in its surface. Besides answering the old riddle of how a stone so soft that it could be carved with a knife also might be made to sharpen the blade by rapidly wearing away a portion of the metal, the illustration also serves a purpose in explanation of the modern abrasive tool.

Mending Interior Cut in Tire Casing.

When a car is standing in a garage or enclosed room with the engine running the fumes of the exhaust cause the air to become vitiated and have a poisonous effect on those who breathe it. To overcome this corruption of the atmosphere an English motorist has designed a new system of piping for garages and buildings in which motor cars are stored to carry off the products of combustion. The pipes are suspended from the ceiling and are so arranged that in whatever part of the building the car may be standing, the muffler or tail pipe may be connected to them by a flexible tube and the exhaust led direct to the outer air. This arrangement permits the engine to be run indoors for testing or adjusting without being detrimental to health.

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METHODS OF ENGINE LUBRICATION

Novel Theories Advanced by an English Engineer—How Carbon Deposits May Regulate Cylinder Temporature.

Engine lubrication ever has been a fruitful topic for discussion and is likely to continue to be for some little time to come, despite improvements in methods of distributing and feeding the oil, for the very good reason that the internal combustion motor, however satisfactory it may be when operating under proper conditions, is one of the most sensitive pieces of apparatus ever designed, when matters go awry. One or two novel aspects of the subject are brought out by J. W. G. Brooker in a paper read at the Royal Automobile Club (of Great Britain) Associates' headquarters, last month, in which he speaks of the engine lubricant as being mainly consumed either by leakage or by being burnt in the cylinder, and advances the somewhat novel idea that in certain types of small engine, the presence of a small amount of carbon deposit is rather beneficial than otherwise. His viewpoint is, of course, that of current English practice.

"Much has been said and written on the subject of carbon deposit," he remarks, "and the question is as important as ever. A few words as to its effects may be of interest. In the first place, it acts as a non-conductor of heat, and in the case of the many cars on the road in which, when the pump or radiator are working well, the cylinders are kept too cool, its presence in a small quantity is actually beneficial. To obtain the highest efficiency from the fuel, the charge of petrol and air at the moment of its ignition must be both highly compressed and hot. The hotter it is and the more highly it is compressed the greater is the power obtained from any particular weight (not volume) of mixture within reasonable limits. . . . . A highly compressed and hot charge burns more quickly, and the effect is somewhat the same as when using a very hot spark and advanced ignition. When the cylinder walls and head are kept too cool, the temperature and pressure of the compressed charge are too low; the temperature and pressure at the completion of ignition are, as a result, too low, and the proper curve is, in consequence, smaller in area than it might be. . . . . Further, during the power stroke the head and walls of the cylinder and the top of the piston are all robbing the exploding mixture of a proportion of its energy in the form of heat, and the cooler these parts are the greater will be the percentage of energy lost in this way.

"The obvious result, therefore, of too cool cylinder walls and piston is that less power is obtained from the same unit of fuel, or in other words, if less heat is lost through the cylinder walls, more useful energy will be obtained from the same quantity of fuel. Please let it be understood, however, that the above is not a defence of carbon deposit, but a plea for rational cooling. . . . .

"The causes of carbon deposit are numerous. The fit and design of the piston and the piston rings are, of course, among the chief factors to be considered. . . . . When the lubrication is by splash the temperature of the crank case is another factor in the question. The oil is heated unnecessarily when the crank case is too hot, and in this condition it is more freely splashed, and it will also more readily get past the piston rings. In the majority of true force-feed lubrication systems the pistons rely for their supply on what is splashed off the big ends and crank webs as they revolve, and even if the oil is hot, and, therefore, thinner, very little more circulates and is thrown off than when it is comparatively cool. With a properly designed force-feed lubrication system, however large a quantity of oil is in circulation, it is practically impossible for the pistons to be much too liberally supplied. Their supply is confined to what is thrown off the big ends and crank webs, and this is limited by what emerges from the bearings.

Oil is mainly consumed in two ways—(1) leakage at the bearings, joints, and tappets; (2)burnt in the cylinder. The cure of the first is obvious, although it is a matter that is not always attended to; the second cause of diminution can be checked by limiting the amount splashed. . . . . It is obvious that by checking the amount consumed one is also diminishing the rate of formation of carbon deposit.

"The purity or otherwise of the oil used is, of course, of considerable importance. Even the best possible cylinder oils contain small quantities of bitumen and tarry matter, and these are the first to be attacked by the flame. Of course, I am referring only to the proportion that gets past the rings. The deposit is largely augmented by mineral matter, mainly dust from the road, brought into the cylinder with the charge; also by carbon deposit from incomplete or imperfect combustion of the petrol.

"The subject of Compound vs. Pure Hydrocarbon oils has for long been a favorite subject of discussion, and the reported use of pure castor oil in the high piston speed engines of many of the racing and hill climbing cars in France last year has stimulated interest in the matter. It is obvious that the use of a pure fatty oil such as castor is out of the question for general motor lubrication. It is comparatively expensive, the smell from the exhaust is obnoxious; but the chief objection is its tendency to gum on the bearings and all exposed surfaces. This thickening, due to oxidation, is more or less a pronounced feature of all fatty oils. However, where the car is being frequently dismantled and cleaned, as in the case of racing engines, the slight oxidizing tendencies of non-drying oils are negligible. One of the chief features of the fatty oil is its ability to stand high temperature without decomposition or appreciable thinning. . . . . When a very high piston speed is adopted it is of the utmost importance that the piston be able to slide with the least possible resistance of the nature of fluid friction. It has been found that the peculiar and characteristic greasiness of the fatty oil is the only thing that meets the conditions of low fluid friction combined with high lubricating value. . . . .

"The methods of lubrication of petrol motor car engines appear at first sight very varied; but they can really all be divided into one of two classes, 'splash or spray' and 'forced feed.' The simplest method of all is the oil bath in the crank case, into which the big ends dip and splash the oil over every moving part. In this, as in all the splash or spray systems, the oil arrives on the outside of the bearing, and it has to find its own way in. In the case of the forced feed method, on the other hand, the oil is introduced into the center of the bearing between the journal and the brasses and the pressure of a pump driven by the engine helps it out. In the Lanchester engine, for instance, the pressure of the oil in the system is 30 pounds to 35 pounds to the square inch.

"On the Vauxhall engine, which is considerably smaller than the one just mentioned, the forced circulation comes to an end at the big end bearing, and the piston and gudgeon pin rely for their supply upon what is flung from the revolving crank webs. This is adequate for medium powered engines, and the extension of the system to the gudgeon pins can be considered as a refinement for large engines. On several types of the Austin car two complete systems are installed—viz., the true force feed method for the crank shaft and connecting rod bearings and a drip feed from the dashboard to the cylinder walls. The force feed system uses the same oil over and over again, which is adequate for the bearings, while a small pump supplies drips, which can be regulated, feeding fresh cold oil direct to the cylinder walls.

Reverting now to the splash system, I am inclined to consider the Siddeley arrangement, recently adopted on all their cars, the most efficient and simple. It is briefly as follows: A pump, driven from the cam shaft, keeps four troughs, one for each connecting rod, overflowing with oil. The troughs are built across the crank case, each one in the path of its particular connecting rod. The big end is fitted with a copper scoop, which, as it comes to the lowest point in its travel, dips to the extent of about ¼ inch in the oil in the trough, creating a splash. The more the copper scoop is adjusted to dip the greater the splash, and it is only a matter of experiment to determine once and for all what the extent of the dip must be to give adequate lubri-

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cation without excessive smoking and carbon deposit. The effect of the scoop continually striking the oil in the trough is, of course, to empty it, and to balance this the before mentioned pump keeps up a continuous flow into the canal, tending to keep it full.

"The pump is more than sufficient to accomplish this, with the result that the canal is always overflowing. The great feature of the system is the absolute uniformity of the depth of dip under every condition, and, as far as I am aware, this is not obtained with any other method of lubrication by splash. Like everything else, it has its weak point; but it shares it with many other lubrication devices and it is not a serious matter. The difficulty is this, that the adjustment of the depth of dip of the scoop is set for oil of a certain viscosity, with the result that the use of lighter or heavier oils gives less or more lubrication respectively than the mean. As the viscosity of the oil used is increased, so the depth of dip must be reduced, if the degree of lubrication is to remain constant. If a lighter oil than the standard is used, then the scoop should dip deeper. . . . .

"Variations in methods of splash lubrication are mainly variations in the methods adopted to feed the oil to the crank case. After it has reached the crank case it spreads itself, in the case of four-cylinder engines, into four divisions, one for each of the four big ends, which dip and create a splash. This arrangement minimizes the tendency for the oil to run on one end or the other of the crank case as the engine tilts up or down. The question therefore resolves itself into discussing the different methods of supplying the crank case, and, needless to say, every instrument claims to do so in the most regular and reliable manner."

Frequent Oiling for Planetary Gears.

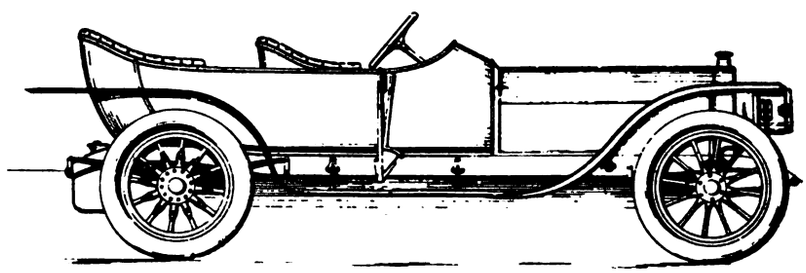
Why the planetary type of transmission requires such frequent lubrication is often a cause for wonderment to the beginner. The reason is not far to seek, however, when it is remembered that the pinions or "planets" are of diminutive size, and when in action revolve at high rates of speed and under heavy load. This fact coupled with an altogether too frequent tendency of the brake bands to drag, when the car is at rest and the motor running, or when on high gear, has to do with a considerable generation of frictional heat within the gear casing, which, together with the rapid motion of the parts, soon uses up any lubricant which may be there.

Some transmissions leak oil more than others, so that their demand for lubrication is greater than is ordinarily the case. The theory of the case is readily apparent to a man of mechanical bent, but it often is the reverse with a beginner, which is a sufficient reason why he should be duly impressed with the necessity for frequent lubrication of this important mechanism.

BODY RESEMBLES A BATH TUB

Hence the Name of the Successor to the Tonneau, Which Means a Little Tub—Characteristics of the Design.

To the French, the motoring public is indebted for that choicest bit of nomenclature—the noun tonneau, as applied to the hinder portion of an automobile. Its derivation, as everyone now knows, was plainly the result of ridicule heaped upon the little individual seats which used to be perched upon the rear corners of the early machines. Little tubs, they were in reality, and because of the foreign sound, all motorists have clung to the derisive "tonneau" ever since. In America, there also is the counterpart of the word preserved in the popular "bucket" seat, which is practically the same thing. But it remained for British genius to carry the suggestion of the original word to its ultimate limit by the adoption of the "bath" body. This is not a piece of Cockney humor, either, it should be understood, but real earnest. And the bath body is regarded as the height of motoring fashion just at present by those who pride themselves upon their up-to-dateness.



The accompanying picture shows in outline, one of the new bath bodies. It was made from designs originally promulgated in connection with the French Grand Prix of 1908, and is most seen on cars of very high horsepower just at present. Its reproduction on the inevitable smaller scale has taken place, however, and the idea may be expected to be copied more or less extensively. Outside of its being shaped in a general way like a huge bath tub, the bath body belies its name. Its very intent is not that of deluging its occupants, but of protecting them from the showers of mud which many of the lower and lighter types of body are so effective in producing. The particular example here reproduced, has but one point of ingress and egress, which is on the left side of the vehicle. It is a side door, which may be used after one half of the front seat has been folded out of the way. The rear of the body is occupied by a wide and rather luxurious seat, despite its low back, while for the front, the driver is given a bucket seat of the usual form, and his companion a sort of wide shelf—which seat must be folded up in order to permit entrance to the rear, or in fact to give access to any other portion of the interior.

Novel Points in Coil Construction.

Mounting the coil directly over the cylinders of the engine is an advance in ignition systems which has been recently brought out in England. The coils are of special construction to resist the heat to which they are exposed and their close proximity to the engine has for its object the reduction in length of the high tension circuit whose insulation has been found difficult to maintain. A single vibrator serves for all coils and a reversing switch permits the direction of flow of the current to be altered in order to preserve the contact points of the vibrator. Although there are two vibrators, strictly speaking, there is but one in action at a time and either may be put in circuit at will. One furnishes an intense spark which conduces to easy starting, while the other, in which the current consumption is smaller, is suitable for firing the engine at normal speed.

Air Cooling Best in Arctic Regions.

When it gets 72 degrees below freezing and to expose an ear to the cold for even half a minute means that it is likely to break off like a delicate piece of brittle white china, there are difficulties about running an automobile, but H. H. Ross operates a car between Fairbanks and Fox, Alaska, in such a temperature, the machine making two round trips almost every day. The distance between the towns is 12 miles, and a six-cylinder Franklin is used in the service, the air cooling feature of its construction making it peculiarly adaptible for "farthest north" motoring.

Advantages of Full Elliptic Springs.

A novel argument is advanced by the advocates of the full elliptic spring as to the advantages to be gained by its use. Full elliptic springs range in length from 36 to 40 inches, and it is asserted that a semi elliptic spring 7 feet in length is required to absorb the same amount of road shock. That is, the former type must be twice as long, and as hung in many cars it can take and absorb shock only in a vertical direction. By reason of their shape and tilting full elliptic springs are claimed to assimilate shocks from all directions.

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APPLYING BRAKES TO THE LAW

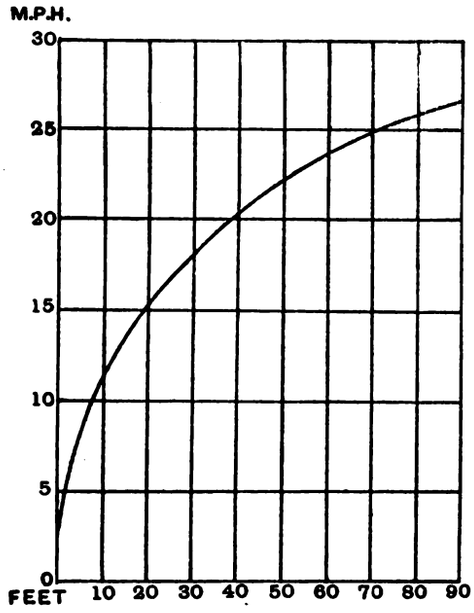
British Court Accepts Novel Method of Interpretation—Results of Braking Tests Admitted as Evidence.

Brisk warfare continues to be waged between the motorists, the police and the courts of Great Britain over interpretations of the expression "driving to the common danger," which is the accepted turning point about which hinge all questions of speed violation. Occasionally most original methods are adopted in attempted refutation of the allegations of the complaining police, and not infrequently interesting information is brought to light in this connection. Thus in a recent instance, partisans of an arrested owner who had been charged with driving to the common danger over a curved stretch of road, after ascertaining the precise distance from which a driver on any part of the curve could observe obstructions ahead, proceeded to a test of the braking, or "pulling-up" powers of the same car, thereby proving to the satisfaction of the court that no element of danger had been involved in the speed at which it was alleged the machine was traveling at the time of the taking of evidence. A dismissal was secured on this ground.

Braking tests of the car in question—a Rolls-Royce—were conducted over a measured stretch of the road and at various speeds, as a result of which a curve was plotted showing the stopping powers of the machine at any speeds within the maximum and minimum limits chosen. According to these determinations, when going at its maximum observed speed of a little under 27 miles per hour, a complete stop could be made in just 90 feet. At 25 miles an hour, 70 feet were required to stop; at 20, 39 feet; at 15, 19 feet; and at 10 miles an hour, about 8 feet. By measurement, it was determined that the minimum distance at which objects ahead on the curve could be seen was about 137½ feet. The police charge was that at the time of observation, the car was proceeding at a rate of 22½ miles per hour. Reference to the experiments mentioned, brought out the fact that at 22½ miles an hour, the same machine could be brought to a full stop in 53 feet or less, which would still leave some 80 feet to spare, supposing that the driver were to apply the brakes on the instant of coming into view of the hypothetical obstruction which formed the basis of the police case.

The graph obtained from the brake tests in this connection is reproduced herewith and is useful in calling attention to a subject which has escaped general notice for some little time. Indeed, although a number of different tests conducted both here and abroad several years ago sufficed to answer the then mooted point as to whether the automobile was as controlable, relatively speaking, as the horse-drawn vehicle, the furtherance of such investigations with the idea of trying out various systems of braking application or of braking materials, never has been sought. In this connection, it may be observed, that such determinations should prove of considerable importance in influencing design, even though the present braking equipments as a rule may appear to be perfectly satisfactory.

The refutation of the police evidence in the speeding case referred to was of peculiar interest locally in that a previous case, in which another motorist driving a less powerful machine had been arrested charged with driving at a speed only a very little



greater than that charged in the present case, had gone against the defendant, he having made no effort to refute the police testimony. It also should be mentioned, that the timing in both instances was done from a bridge about mid-way of the measured stretch and probably was equally inaccurate in both instances. The success of the defense in this case is particularly enlightening in that it shows the open mind of the bench, as well as illustrating the breadth of construction which it is possible to apply to statutes in which no specific speed limit is mentioned.

How Motorists Lose Fuel in Paris.

In some of the Parisian garages a highly developed system of surreptitiously annexing the contents of fuel tanks on transient cars that are run in for the night is in vogue. By means of suction pumps the gasolene and cylinder oil is benevolently assimilated into the coffers of the garage keeper, a sufficient quantity being left in the tanks to enable the car to renew its journey for a few kilometers before it dies of starvation. The practice has grown to such proportions and fuel is so expensive in the French capital that locks are being fitted to filler caps.

BETTER LAW FOR PENNSYLVANIA

State Senate Passes Bill Embodying Some Recommendations of the Motorists—Features of the Measure.

After efforts extending over a period of several years, Pennsylvania is in a fair way of obtaining a reasonable automobile law, as such laws usually are construed. As a result of a conference between the governor, the interested law makers and other State officials and representatives of the Pennsylvania Motor Federation, the bill drafted by the latter was withdrawn and some of its desirable features embodied in the measure fathered by Senator Grim and this compromise bill has been passed by the Senate and there is every prospect that it will be concurred in by the House, as Representative Townsend, who had introduced a measure into that body, has stated that it will be abandoned in favor of the Senate bill.

The compromise act increases the annual license fee from $3 to $5 and $15, but it exempts non-residents for a period of ten days, and also increases the speed limit from 20 to 24 miles per hour. The right to trial by jury and to deposit an automobile as bail also is provided for and all fines are to be paid into the State Treasury instead of to the local municipalities in which they are imposed, a move designed to discourage petty persecution for revenue only. The non-resident exemption will apply on a reciprocity basis, that is to say, only to the residents of such States as similarly exempt the residents of Pennsylvania; it is particularly aimed at New Jersey and Maryland.

The Grim bill creates three classes of licenses and fees, viz.: Class A—Cars less than 20 horsepower, $5. B—Cars over 20 and less than 50 horsepower, $10. C—Cars over 50 horsepower, $15. Motorcycles $2. The other chief provisions are as follows:

Operators must be over 17 years of age.

Non-residents are exempt for ten days.

Operators using cars not their own (joy riders), or an intoxicated person, are liable to a fine of $100, or six months' imprisonment, or both, and forfeiture of license.

Speed limits—Where buildings are less than 100 feet apart 12 miles per hour; where more than 100 feet apart 24 miles an hour.

Arrests can be made without warrant and the machine held in lieu of bail if the operator is the owner or using with owner's consent.

Penalty for first offenses not less than $10 nor more than $25; second offense, not less than $25 nor more than $50; third offense, not less than $50 nor more than $100 and 60 days' imprisonment.

The right of a trial by jury is given to offenders if desired.

Revenue from licenses retained by haghway department for improvement of roads.

Fines and penalties are retained by city, borough or township where offense occurs, for use of roads.

Law to go into effect January 1, 1910, when all conflicting local laws and rules shall cease.

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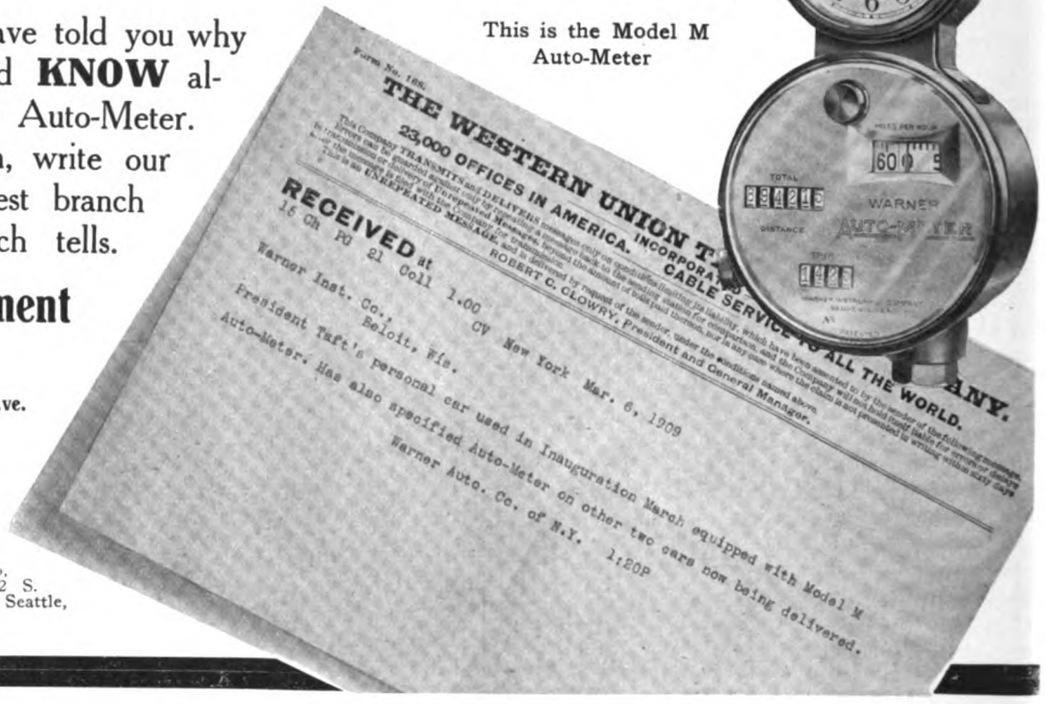
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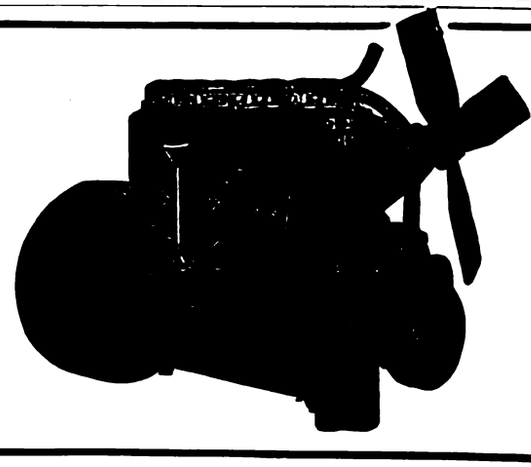
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RAPID INCREASE IN REGISTRATION

Average Yearly Gain of More Than 33,000 Since 1905—Figures Showing Where Big Strides Have Been Made.

A recent compilation of registration statistics for the various states covering the past four years, shows that the average gain in registration during the interval from 1905 to 1908 has been more than 33,000. From 1905 to 1907, the totals increased from 29,167 to 75,204, a gain of 46,037, and from 1907 to 1908, the increase was from the former amount to 128,283, of a difference of 53,079, which is more than the gain for the entire period of the two years previous. A large proportion of the recent gains is seen to have been due to gains in the western States, and though the record is incomplete in this respect, since it does not take into account registrations previous to last year in a number of instances, it is useful as presenting at least an approximation to the true state of affairs.

In this connection it is specially noteworthy that Pennsylvania, New Jersey and Massachusetts forged ahead of New York State last year in the matter of registrations, as did Pennsylvania and New Jersey the year preceding. Rhode Island, Indiana, Iowa, Nebraska, South Dakota and Oregon, are other States in which the rate of gain during the past two years has reached significant proportions. The record in detail is as follows:

States.	1905.	1907.	1908.
Maine	737	853	904
New Hampshire	702	517	565
Vermont	....	449	657
Massachusetts	9,587	6,515	17,500
Rhode Island	....	840	1,047
Connecticut	....	2,093	2,810
New York	8,625	13,985	15,480
New Jersey	....	17,619	21,948
Pennsylvania	....	15,422	25,179
Delaware	....	....	881
Maryland	655	1,496	1,691
Virginia	....	717	648
Florida	133	184	243
Tennessee	369	366	462
Ohio	....	....	11,030
Indiana	....	1,612	4,109
Michigan	....	....	7,500
Illinois	....	....	6,376
Wisconsin	1,493	1,481	2,045
Iowa	799	1,947	3,166
Missouri	....	2,000	874
Nebraska	572	1,053	2,141
North Dakota	....	....	214
South Dakota	358	314	724
Utah	....	212	300
California	4,728	5,241	5,558
Oregon	219	278	559
Totals each year..	29,167	75,204	128,283

Boston Organizations Fail to Merge.

The differences of the Bay State Automobile Association, and the Boston Motor Club which have been aired in the public prints for some time have culminated in a final separation by mutual consent. Members of both organizations have been trying to effect a reconciliation since the first outbreak occurred, and for a time prospects were bright that the warring factions would come to terms and the dove of peace would again reign in the disrupted organization. But after several conferences between representatives of the contesting parties, at which various compromises were suggested, the Bay State A. A. refused to accede to the demands of the Boston Motor Club. At a meeting of the motor club last week the report of the conference committee was accepted and it was voted to become a permanent organization as soon as the necessary formalities can be complied with. It was decided to apply for a charter and the following temporary officers and incorporators were appointed: E. A. Gilmore, president; J. B. Sullivan, Jr., vice-president; E. P. Webber, secretary; A. B. Henley, treasurer. Directors, Maj. H. G. Kemp, H. H. Love, A. E. Adams, A. P. Teale, Kenneth Skinner and R. R. Ross. A ticket of permanent officers were nominated, the election to be held at the next monthly meeting.

Middletown Motorists Organize.

Forty owners of motor cars in Middletown, Conn., met at the home of one of their number last week and tentatively organized the Middletown Automobile Club. Considerable enthusiasm was manifested and the work of drawing up a constitution and by-laws was put up to the following committee: Rev. Ellis Bishop, chairman; Frank D. Haines, Charles A. Coles, E. Dyer Hubbard, A. H. Bishel, and Dr. J. E. Loveland. They will report at a subsequent "get-together' of those interested.

N. Y. A. C. Automobilists to Dine.

Boasting a roster of no less than 600 motorists on its membership list, the New York Athletic Club is to take official cognizance of the fact for the first time on the 31st inst., when an automobile dinner will be held to signalize its peculiar strength in this respect. The occasion will be honored by the presence of such speakers as Job E. Hedges, Senator Slater, Judge Zellar and Mr. Loeb, formerly confidential secretary to President Roosevelt.

Colorado Club to Promote Good Roads.

Automobile owners of Glenwood Springs, Colo., have formed the Glenwood Springs Good Roads Association. Charles W. Darrow was elected president and George J. Hally secretary. The club's main endeavor will be to promote the cause of good roads.

Harrisburg Club Plans for Two Homes.

Two club houses—a city and country rendezvous—are acquisitions which the Harrisburg (Pa.) Motor Club is making strenuous efforts to possess and from present indications they are not far from the goal.

"The A B C of Electricity." Price, 50c. The Motor World Publishing Co., 154 Nassau Street, New York City.

RAW MATERIAL FOR CHAUFFEURS

Amazing Ignorance Betrayed by Candidates for Employment—Gems from a British Club's Examination Papers.

Applicants for drivers' certificates from the Royal Automobile Club of Great Britain are required in addition to the road test to determine their proficiency in handling a car, to pass a written examination on technical subjects relating to the construction and care of the car. Some of the answers submitted by the ambitious candidates indicate the extent of their knowledge of motor cars and afford full justification to the club in its efforts to protect the owner from the incompetent driver by licensing only those who prove themselves capable of operating and caring for a car.

If a written test is productive of the results given below, the car in the hands of such drivers, when confronted with actual conditions well may be the object of solicitude. Following are some of the "gems" which were expected to be of material assistance in securing the coveted license:

"If the water circulation were to stop, what part of the car would suffer?"

Ans.—"The accumulator would be strained."

"What is compression for?"

Ans.—"Compression is the power that drives the crooked shaft."

"What insulates low tension magneto plugs?"

Ans.—"A white dough kind of stuff."

"What is the radiator intended for?"

Ans.—"The radiator is fitted to the car so that the starting handle can be fitted to it."

"What is a silencer for?"

Ans.—"A silencer is to keep the engine running; the engine would stop if the silencer were removed."

"If an engine was run short of oil, what part would suffer?"

Ans.—"The female part of the clutch would be ruined."

"How can compression be lost?"

Ans.—"Through the accumulators running down."

London "Sports" Affect "Motory" Attire.

Where "horsey" clothes used to proclaim sporting proclivities and disposition toward the most advanced fashions, the tendency is now toward "motory" clothes, according to a well known "sporting" tailor of Regent street, London. "Nowadays," he declares, "the popularity of horses for fashionable purposes is somewhat declining, and the poor but vain young man likes to be in the mode. He accordingly wears a motor coat, motor leggins, and a motor cap with ear flaps. People who do not know him think he is a motorist, maybe—but sometimes take him for a chauffeur."

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EXCLUSION LAW FOR MT. DESERT

Townships on the Island Empowered to Close Their Roads to Automobiles—Provisions of the New Statute.

After much local agitation which, in the course of the two seasons during which the conflict has raged has created more or less of a stir throughout the country, the bill providing for the exclusion of automobiles from Mount Desert Island, adjoining the coast of Maine, has been passed by the legislature and has received the signature of Governor Fernald. It only remains for the measure to be ratified by the voters of the townships of Mount Desert, Bar Harbor, McKinley and Tremont, at special town meetings to be held early in the summer. As more than half the voters of the island petitioned for the passage of the bill, including a number of temporary summer residents, among whom a former president of the Automobile Club of America was numbered, it is not likely that the measure will fail to go into effect. In substance, the bill provides:

First—That no motor vehicle shall be used on any highway within any of the four townships on the island of Mount Desert.

Second—That whoever so uses a motor vehicle shall on first conviction pay a fine of $20 and costs, and on every subsequent conviction shall be punished by a fine of $50 and costs, or by imprisonment for not more than 60 days, or by both fine and imprisonment.

Third—That duly authorized steam rollers shall not be deemed motor vehicles.

Fourth—That the act shall take effect in any township on the island ten days after it shall have been accepted at any legal meeting of such township.

New Jersey's Latest Grab Opposed.

Resolutions protesting against the diversion of $128,000 of the funds now in the hands of the Motor Vehicle Department of the State of New Jersey for the general expenses of the State were passed at a meeting held in Newark last week under the auspices of the Associated Automobile Clubs of New Jersey. Among those present were representatives from the boards of trade of Newark, Jersey City, Paterson and Passaic, together with a delegation from the New Jersey Automobile Trade Association. The meeting also went on record as opposed to any disposition of the automobile license funds for purposes other than highway maintenance, and further declared by resolution that the bill compelling all vehicles to be lighted at night ought to be reported out of committee and placed upon the calendar of the legislature for immediate passage.

Check on Passer of Bogus Checks.

Robert Forrest, who is said to have used fifty or more aliases and to have made a specialty of swindling real estate and automobile dealers, is under arrest at Oak Park, Ill. Forrest's trick was to call on the dealers and represent himself as a wealthy visitor to the city, giving as his address the home of some prominent citizen or first-class hotel. He then would begin negotiations for the purchase of a costly car or an expensive real estate site or residence. When the deal was closed Forrest would tender in part payment a check on a local bank. His victim would call up the bank and find that Forrest had a deposit there. Then before the check could be cashed Forrest would appear at the victim's office, tell a story about losing his purse and ask to have a check cashed. Usually the victim readily gave the money. Then Forrest and his bank account, it is said, mysteriously disappeared. Forrest is reputed to have operated this bunco game for many years in all parts of the country.

Colorado Clubs in a Merry War.

A merry war for recognition by and affiliation with the A. A. A. has sprung up between the Colorado Automobile Club and the Denver Motor Club. The Colorado A. C. is the pioneer organization and for four years has been affiliated with the national body, but now the new aspirant is contesting its right to the honor. Through the rapid building up of a membership of over 400, and its brilliant and successful management of the Denver show, the Denver Motor Club has taken a leading place in the motor councils of the State. Its claims for recognition are based on the ground that the old organization has not the requisite membership of 100 to entitle it to representation with the governing body, and it points to its own record as justification of its efforts to secure recognition as the representative body of automobilists in the Centennial State.

Savannah Club Reelects Its Officers.

Being well satisfied with the conduct of its affairs by the present executives, to whose energetic efforts the successful management of the Grand Prize race was in large measure due, the Savannah (Ga.) Automobile Club at its recent annual meeting re-elected all the old officers as follows: Frank C. Battey, president; J. J. Raners, vice-president; A. W. Solomon, secretary and treasurer. Board of governors, F. C. Battey, J. J. Raners, A. W. Solomon, George W. Tiedeman, George J. Baldwin, Harvey Granger, F. M. Oliver, C. G. Bell, D. G. Rosenheim, Wright Hunter and A. B. Moore.

Special Sermons for Automobilists.

Special sermons to automobilists are a church advertising novelty that Dr. William Horace Day, of Los Angeles, Cal., has originated. The registered list of owners is used for sending out the invitations, and the text employed is: "The driving is like the driving of Jehu, for he driveth furiously."

MUD THROWING EFFECTS OF SPEED

Results of Tests Showing the Splashing Capacity of Motor Cars—What They Suggest for Motorists.

Tests recently conducted by a Belfast motorist to ascertain the capacity of the motor car to throw mud, were productive of interesting results. The road on which the tests were held was swept on the previous evening. In the morning the surface was sprinkled to give approximate conditions to those which attain in wet weather. A screen 8 feet wide and 6 feet high was constructed and placed on the sidewalk to record the results. For the first trial a car traveling 15 miles per hour was sent past the screen at a distance of 3 yards, and the resulting volume of mud thrown on the screen averaged 1 foot in height. The maximum height of the mud thrown by the car at this speed was 18 inches. At a car speed of 20 miles per hour the column of mud was pushed up to a height of 3½ feet. In the final trial the car was sent past the screen at 25 miles per hour, when the mud was elevated to an average height of 4 feet and attained a maximum of 5 feet 11 inches. The net result demonstrated that at 25 miles per hour pedestrians are practically certain to be splashed and that as the speed of the car increases, immunity from flying mud becomes unknown. No effort was made to determine how far mud is likely to be thrown under such circumstances.

As the tests showed the wide area in which mud was thrown by cars at speed it would evidently be a kindly act on the part of motorists to decrease their rate of travel in passing through towns or whenever pedestrians are encountered on muddy highways. Such action on their part would merit the esteem of the public.

Cheyenne Launches Its Motor Club.

Twenty-five enthusiastic motorists of Cheyenne, Wyo., met last week and formed an organization to be known as the Cheyenne Motor Club. Officers were elected as follows: William B. Barnett, president; J. E. Stimson, first vice-president; Dr. Otto Snyder, second vice-president; Fred Horn, secretary and treasurer. The following committee were authorized to prepare a constitution and by-laws and to report at the next meeting: W. E. Dineen, Frank Wright, John Schuneman, L. E. Smith and Percy Hoyt.

Newark's Big Club Grows Bigger.

As the result of an active campaign to enlarge its roster, the New Jersey Automobile and Motor Club of Newark, at a recent meeting increased its numerical strength by the admission of 47 new members. The club now has 1,196 active and 232 associate members on its roll.

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The Week's Patents.

903,762. Automobile. Charles J. Paulson, Brooklyn, N. Y., assignor of forty-three one-hundredths to Kenneth F. Junor and thirty-seven and one-half one-hundredths to Phebe R. Maclaurin, Brooklyn, N. Y. Filed Oct. 19, 1907. Serial No. 398,142.

1. In a motor vehicle, the combination of a spring member, a motor connected with one end of the spring member, the other end of the spring member being connected with the driving wheels whereby the motor will wind up the spring and thereupon rotate the driving wheels through the spring, a governor connected with the driving wheels, means for causing the governor upon reaching a certain predetermined speed to reduce the power of the motor, mechanism connecting the motor with the driving wheels separate from the said spring connection, said latter mechanism including a connecting member that is normally inoperative and disconnects such mechanism, but which upon attaining a certain predetermined speed will throw such mechanism into engagement and thereby through said motor connection with the spring end will wind up the spring through the rotation of the driving wheels caused by the momentum of the car, assisted by the reduced power of the motor.

903,884. Motor Vehicle. Arthur Przygode, Charlottenburg, Germany, assignor to General Electric Company, a Corporation of New York. Filed Oct. 13, 1905. Serial No. 282,539.

1. A motor vehicle comprising a fore car, a rear car, a pivotal connection between the cars, and a device having an attachment to each car which checks the angular movement of one car with respect to the other.

903,952. Transmission Gearing. William K. Blackburn, Milwaukee, Wis. Filed July 31, 1908. Serial No. 446,247.

In transmission gearing, a power shaft, conical clutch members secured to the power shaft, oppositely disposed beveled faced pinions loosely mounted upon said power shaft and having conical shells extending therefrom for frictional engagement with said clutch members, means for holding the bevel faced pinions against end play upon the aforesaid power shaft, a counter shaft, a beveled faced wheel carried by the counter shaft adapted to have constant engagement with both of the aforesaid bevel faced pinions, and means for imparting longitudinal motion to the power shaft whereby the bevel faced pinions are alternately engaged by the clutch members.

904,023. Vehicle Wheel. Thomas A. Silverwood, London, England. Filed April 22, 1907. Serial No. 369,647.

A vehicle wheel comprising an expanding frame, a hub and spokes, one end of each spoke being connected to the hub and the other end being free to move in the frame, springs, one of which is attached to each of said spokes, and spring buffers connecting with said springs, substantially as described.

904,028. Self-Propelled Vehicle. Joseph Vollmer, Berlin, Germany, assignor to General Electric Company, a Corporation of New York. Filed Jan. 16, 1905. Serial No. 241,271.

1. In a system of the character described, the combination of a fore-car, a rear car, an elastic suspension means for the body of the fore-car, and a second elastic suspension means located between the first suspension means and the rear car and supporting the weight of the latter.

904,086. Internal Combustion Engine. David Roberts, Grantham, England. Filed Nov. 9, 1907. Serial No. 401,488.

1. In an internal combustion engine, the combination with the cylinder, and piston, of a vaporizing chamber communicating directly with the cylinder by a passage of less diameter than the cylinder, a fuel inlet connected with the vaporizing chamber, in

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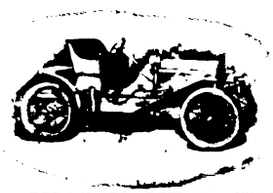
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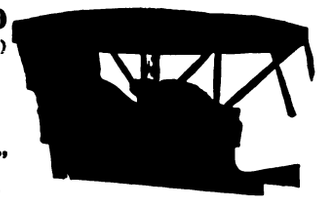
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direct and open communication therewith, air inlet and exhaust passages communicating with the said passage, and controlling valves interposed between said passage and said inlet and exhaust passages, substantially as described.

904,132. Motor Oiling System. Kirk G. Johnston, New York, N. Y. Filed March 5, 1908. Serial No. 419,357.

1. In a motor oiling system the combination with the crank case thereof and using the force of the successive compressions therein, of an adjustable oil level maintaining stand pipe connected to an air-tight oil tank, adjustable check valves hermetically attached to and adapted to receive oil from the said air tight oil tank and means conveying oil from said adjustable check valves to the required points on the motor, substantially as and for the purpose set forth.

904,137. Steering Mechanism for Automobiles. John M. Mack, Allentown, Pa. Filed Nov. 27, 1905. Serial No. 289,143.

1. A steering apparatus for vehicles comprising a casing, a shaft supported partly within and partly without said casing, an arm fixed upon said shaft without the casing adapted for connection with the steering gear, an arm fixed upon said shaft within said casing, a movable member having a bifurcated end adapted for sliding engagement with said arm, and a threaded end, means for guiding said movable member, a sleeve inclosing the end of said movable member and provided with screw threads adapted to engage the threaded end of said movable member, an annular support arranged upon said sleeve intermediate its ends, bearings disposed above and below said support, and a rod secured at its lower end to said sleeve and provided at its upper end with a hand wheel for actuating said rod and its connected parts, substantially as specified.

904,143. Wheel for Motor Vehicles. Alden L. McMurtry, New York, N. Y., assignor to Wyckoff, Church & Partridge, a Corporation of New York. Filed Dec. 11, 1906. Serial No. 347,390.

1. A wheel comprising a felly recessed in its outer face, a removable wheel rim formed with longitudinal locking recess in its inner face, a pivoted rim locking device seated in the recess in the felly and adapted to be moved from a tangential to a radial position to engage the locking channel in the rim.

904,146. Steering Mechanism for Motor Vehicles. Arsene Pare, Taunton, Mass. Filed April 2, 1908. Serial No. 424,758.

A motor vehicle comprising a running gear frame, stub axles having vertical arms journaled in bearings on the forward portion of said frame, steering wheels on said axles, a gear segment affixed to one of the axle arms, connections between the two axle arms, a vertical shaft journaled in a bearing affixed to the running gear frame, a gear affixed to said vertical shaft, and engaged with said gear segment, a spiral gear rotatively mounted on the body, and having a socket portion which is adapted to slide on the vertical shaft, the socket portion of said spiral gear and the portion of the shaft on which it slides being relatively formed to prevent one from rotating relatively to the other, a steering shaft mounted on the body, a transverse shaft and a longitudinal shaft, both journaled in bearings on the body, gears connecting the transverse shaft with the longitudinal shaft, and a spiral gear on the longitudinal shaft meshing with the spiral gear which slides on the vertical shaft.

904,148. Lever and Ratchet for Vehicle Brakes. Morgan Potter, Fishkill-on-the-Hudson, N. Y. Filed March 6, 1908. Serial No. 419,443.

1. In a lever and ratchet appliance for vehicle brakes, an operating lever, a pawl and a ratchet, said lever being supplied with a stop piece arranged to engage the lower portion of the pawl and with a collar for entering a recess in the pawl, and a coupling bolt passing through the collar and through the pawl, the parts being combined and arranged substantially as set forth.

904,150. Garment, Umbrella, and Cane Rack for Automobiles. Edward T. Robinson, St. Louis, Mo., assignor to St. Louis Car Company, St. Louis, Mo., a Corporation. Filed Feb. 11, 1908. Serial No. 415,356.

1. A rack of the character described, comprising a horizontal bracket having a horizontal loop and adapted to be secured to the body of a vehicle, and a stay arm extending upwardly and inwardly from the inner end of said loop, substantially as set forth.

904,151. Hood for Automobiles. Edward T. Robinson, St. Louis, Mo., assignor to St. Louis Car Company, St. Louis, Mo., a Corporation. Filed Feb. 11, 1908. Serial No. 415,359.

1. A hood of the character described comprising a plurality of tapering telescoping sections.

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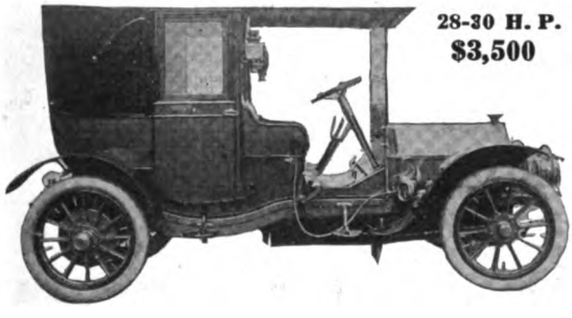
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in barrels, and in cans with patent pouring spout is sold by dealers everywhere. Manufactured by

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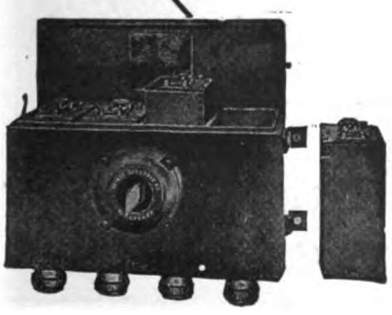
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Heinze ignition apparatus on your 1909 car and get

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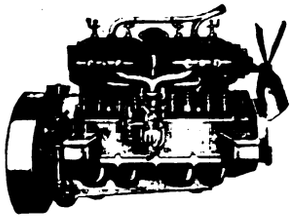
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THE OIL THAT GRAPHITIZES
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YOU NAME THE CAR
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MADE ONLY BY
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MAKERS OF
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CAUSE—
We are motor SPECIALISTS.
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Volt Ammeter $5.00. Ammeter only, $3.50


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THE JACKSON
"No Sand Too Deep—No Hill Too Steep."
2-Cylinder and 4-Cylinder Runabouts, Roadsters, Touring Cars,
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Prices, $850, $950, $1,250 and $2,000.
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Wheels fitted with
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Use Permanit
Demonstrated before Board of Governors Harrisburg Motor Club with great success. For particulars write
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which adds to the efficiency of the lamps, and keeps glare from blinding other users of the highways. Can be fitted to any existing lamp.
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that made the run from Philadelphia to Savannah, Ga., March 5th to 18th, through mud up to the radiator, beating all previous records.
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Full of Air.
Tire expense cut in two.
Cannot Blow Out, Rim Cut or Puncture.
As Flexible as Rubber Anti-Skid.
That part of a tire with a blowout or a rim cut in it will last longer than any other part if encircled by a few sections of steel.
Thousands in use.
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THE SPLITDORF MAGNETO
will give you perfect ignition. Pronounced the best by experts. Ask for Magneto catalog.
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will cool such cars as the Pierce, Thomas, Packard Runabout and National for 1909. How about your order.
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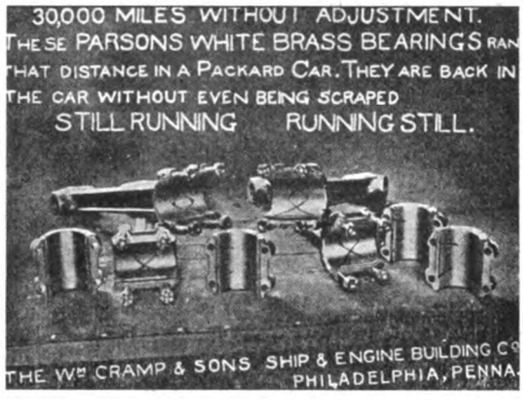
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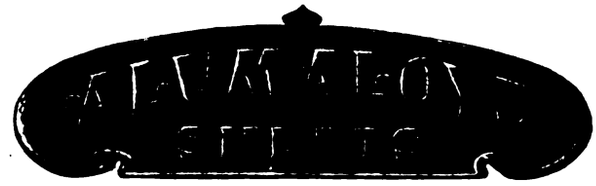
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Mailed anywhere for 60 cents in coin

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Result of two years experimenting with every known plug on the market.

Guaranteed as good as any in the world regardless of cost.

Agents Wanted.

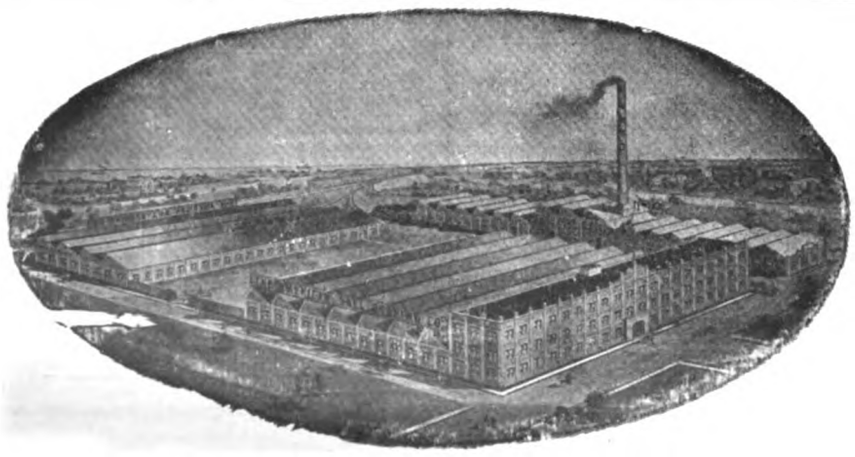
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The output of complete Front and Rear Automobile Axles of this plant exceeds the capacity of all competition combined.

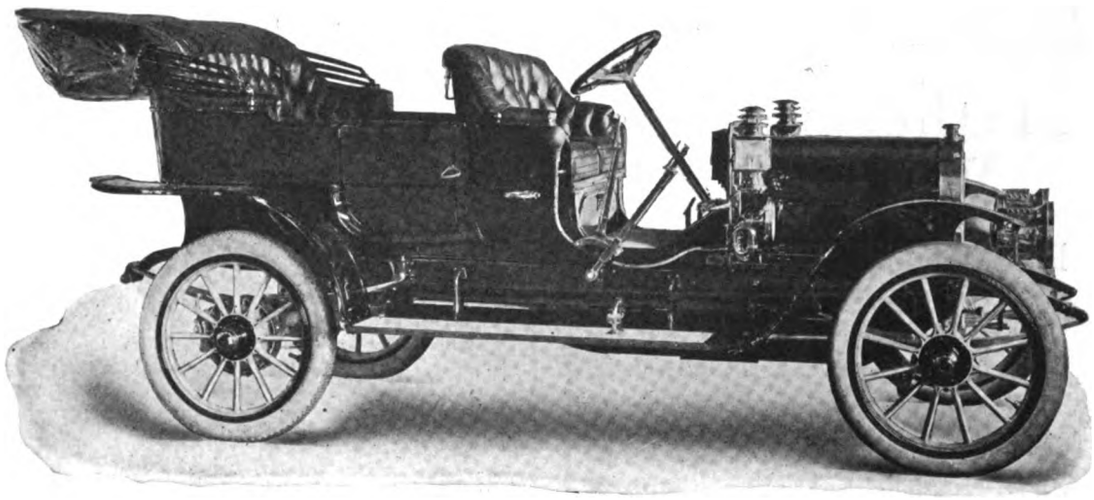
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"THE SILENT SELDEN"



$2,000 F. O. B. ROCHESTER, N. Y.

AFTER the remarkable results of our "first year"—the achieved success of 1908, we salute you with real and well established confidence as we introduce the Selden of 1909.

Not only has our promise to produce a high grade car of best materials and workmanship for $2000 been strictly fulfilled, but we have demonstrated the Selden genius in a silent, strong, comfortable, durable and handsome car. It does all that the owner wants to do and all that the chauffeur ought to do. Agents and owners are enthusiastic over it. Not a cheap car at all but one of the how-can-you-do-it-for-the-money kind.

Our 1909 wheel base is lengthened 5 inches from 109 to 114; the magneto and pump moved to left side of motor, the remaining equipment on the right; the brakes enlarged and now rigged inside the frame; the wheels now 34 inches were 32 inches; the radiator and hood made to conform in style to longer wheel base—little touches for style and convenience. No radical mechanical changes, simply because we couldn't find any necessary—no use fooling with what has proved so unusually good.

We can assure those who buy the 1909 Seldens all the efficiency of the 1908 Seldens with a little more style and a little more convenience, a little more refinement. The actual records of use and travel this year have so proven their merit, power and economic stability that it would be hard to promise anything better in practical construction.

THE COMING CAR OF MODERATE PRICE

Catalog and Agency Proposition upon Request. Agencies Wanted Everywhere.

Selden Motor Vehicle Co., Rochester, N. Y.

GEORGE B. SELDEN, President

Members Association Licensed Automobile Manufacturers.

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ANOTHER VICTORY

Two Matheson Cars WIN

TWO PERFECT SCORES

in New York to Boston Endurance Contest, March 11th, 247 miles—6 hours, 34 minutes running time, carrying four passengers over deep mud-covered roads, considered, in many places, almost impassible. 20 contestants.

These two perfect score Matheson four-cylinder cars had been driven by their owners over 15,000 and 19,000 miles respectively before entering this contest.

This victory recalls the great Cup Winning triumph of three Matheson cars which were the **only three** cars out of **32 contestants** to make **perfect time scores** in the greatest Endurance Contest ever held in America—300 miles in zero weather, over the ice and snow covered mountain roads from Philadelphia to Wilkes-Barre and return, Jan. 1-2, 1909. These three winning Mathesons had also been driven by their owners 9,000, 12,000 and 18,000 miles respectively before entering the contest.

50 H. P.
Six-cylinder Shaft Drive
$3,000
Equipped with choice of Touring, Tourabout, Toy-tonneau, Close coupled or Runabout bodies.

50 H. P.
Four-cylinder Chain Drive
$4,500
Equipped with Touring body, Limousine or Landaulet, $5,500. Roadster or Tourabout, $4,350.

MATHESON AUTOMOBILE COMPANY
1886-1888 Broadway, Cor. 62d Street New York City



MILLER'S Anti-Freeze Compound

DIRECTIONS FOR USE.

The radiator should be thoroughly washed out with hot solution of caustic soda, which will remove any dirt, and then clean water should be put in to see if the radiator leaks any place.

If the radiator is found not to leak, put in the solution. To get a mixture that will not freeze at 15 degrees below zero, Fahrenheit, add ten pounds of the compound to two gallons of water. To get a solution that will not freeze 30 degrees below zero, Fahrenheit, add ten pounds of the compound to every six quarts of water.

The cover on the can should be kept closed tight at all times while it contains any of the compound.

Price, 10-lb. cans..... $1.00 each.

Pan-American Automobile Body Polish



Pan-American Polish was awarded the Bronze Medal ("the only one awarded") at the Louisiana Purchase Exposition at St. Louis, 1904. This polish has been carefully prepared for the Automobile trade. It is also applicable to the carriage trade, or can be used on any varnished furniture or wood-work of any kind. It will remove stains, cover scratches; leaves the automobile with its original new lustre without being sticky or greasy.

It can be used on the leather seats or tops with the very best results. Can be used on any color or kind of varnish from the clearest white to the darkest black. Furnished in eight-ounce bottles.

For sale by all automobile dealers.

Price, 60 cents per 8-oz. bottle. Price, $3.00 per gallon.

Special prices quoted manufacturers, jobbers and dealers. Catalog on request.

CHAS. E. MILLER, Main Office 97-99-101 Reade St. NEW YORK
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BRANCHES—54th St. and 8th Ave., New York; 202-204 Columbus Ave., Boston, Mass.; 318-320 N. Broad St., Philadelphia, Pa.; 227½-229 Jefferson Ave., Detroit; 1829 Euclid Ave., Cleveland, O.; 1392 Bedford Ave., Brooklyn, N. Y.; 824 Main St., Buffalo.

The Largest Automobile Supply House in America

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Studebaker MOTOR CARS

Why Do Studebaker-Garford Cars Sell Faster, For More, Than Others?

HAS IT EVER OCCURRED TO YOU that the Studebaker-Garford gasoline cars command a higher price per horsepower than any other American cars? Perhaps it hasn't—not all persons understand cars well enough to compare them on that basis. Most folks are impressed with large figures—to them 50 or 60 or 70 horse power terms seem to appeal strongly—tho for the life of them they couldn't explain just why.

EFFICIENCY IS THE ONLY LOGICAL BASIS for comparison of an automobile or a horse or anything else. Funny how few appreciate that simple fact. Must be it's so simple they have forgotten it.

ONE HUNDRED DOLLARS PER HORSE POWER is the price of Studebaker-Garford 30s and 40s. Thirty sells for $3000 and the Forty for $4000—just an even hundred per horse power you see. (Of course that's with standard touring car body. Limousines and other special types come higher according to equipment.)

A LITTLE LESS THAN A MILE A MINUTE is the limit of speed of the 40 with seven passengers, and the 30 has about the same speed with its five. They are not racing cars and several other high priced cars can give a more spectacular demonstration on a good road—for a ways.

IF YOU WANT A RACING CAR we will be glad to recommend to you several concerns which make that kind of machine. We don't. Studebaker-Garford cars are built for that class of judicious buyers who are content with reasonable speed but who demand the best that can be produced in comfort and luxury—and of course absolute reliability under all conditions.

PERSONS WHO BOAST of covering a few hundred miles "without trouble" are not owners of Studebaker-Garford cars. Thousands of miles—two or three seasons of constant hard driving without any mechanical trouble—often without even an adjustment—are matters of course with owners of these cars. That's what they pay for. That's why Studebaker-Garford cars not only command a ready market at higher prices than other cars of same horse power, but there's a big shortage in our Models A and B today.

NOW IT DOESN'T SOUND TRUTHFUL to say that the Studebaker-Garford "30" for example, selling at $3000 is higher priced than any other "30"—for everybody knows there are several cars rated at "30" in the ads and which sell for $4200 to $5000.

BUT THOSE ARE "30s" ONLY IN NAME—according to the same formula which rates the Studebaker-Garford at 30 these others are more nearly 60. Lowest of them is 47 and one prominent example of the prevalent underrating fad should develop 58. Of course we cannot vouch for its developing that much—it doesn't agree with our ideas of design or construction and so we don't believe it will on a test.

WE HAVE OFTEN WONDERED if the real reason for thus underrating high priced cars was to obscure the fact that 50 and 60 horse power cars of other makes continually go down in defeat before the 30s and 40s of the Studebaker-Garford line. Could it be, think you?

MORE ROUGH ROADS RECORDS—covering distances like the famous drive from New York to Fort Leavenworth; the winter run from Chicago to Denver—when the 30 beat the crack European and American in the Round the World Race, by six days—stand to the credit of cars of this wonderfully hardy strain than are held by models of any other make.

WHY DO BUYERS GLADLY PAY MORE per horse power for Studebaker-Garford cars than they will pay for others of the same horse power or even for cars rated much higher? Must be a reason. And it must be a good reason, for rattle-brained folks don't buy Studebaker cars—they run after something more spectacular or more "original"—which is to say, experimental.

ASK ANY STUDEBAKER-GARFORD OWNER; he'll tell you in a word. It's because of the higher efficiency. Regardless of rating these cars excel in year-in-and-year-out performances. You never see one advertised for sale second hand. If an owner wants a newer model he always wants a later one of the same make. So he brings his old car to us—for, better than anyone else we know and appreciate its value.

LET'S SEND YOU A LIST of owners of Studebaker-Garfords—men of prominence who have driven their cars three and four and five years—and let their verdict determine your choice. Isn't that a good plan? We think so.

STUDEBAKER AUTOMOBILE COMPANY, Main Office: Cleveland, Ohio

BRANCH OFFICES: New York, Boston, Philadelphia, Chicago, San Francisco, Stockton, Cal.; Sacramento, Cal.; Kansas City, Mo.; Portland, Ore.; Seattle, Wash.; Salt Lake City, Utah; Dallas, Tex.; Denver, Colo.

DEALERS EVERYWHERE—5,000 of them—just say STUDEBAKER.

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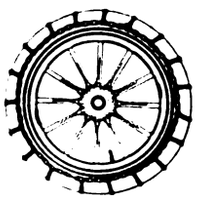
Weed Cross Chains Are Brass Plated

When you buy chain tire grips insist that you get the genuine Weed brass plated and specially hardened cross chains. Buy only the BRASS PLATED ones—then you know you are getting the genuine Weed—not an imitation. The new hardening process, through which all Weed Cross Chains are put, enables the user to get two to three times the mileage formerly secured.

Since we could not improve the general design, neat appearance and simplicity of Weed Grips we have succeeded in improving the wearing quality of the cross chains.

MR. AUTOMOBILIST!

you should secure the benefit of this change; see that you do. Specify Weed Chain Tire Grips—and see that you get them.



WEED CHAIN TIRE GRIP COMPANY

28 Moore St. New York

The Warner Auto-Meter



1909 Style

Guaranteed Absolutely Accurate

is the only speed indicator made on the Magnetic Induction principle. Because of the principle it accurately indicates every range of speed from zero to the maximum.

All other instruments are made on the centrifugal principle. They fail to indicate any speed whatever under 5 to 10 miles per hour.

The Auto-Meter is so durably made that practical tests have shown that it will endure a MILLION MILES of riding without perceptible wear, or departing from absolute accuracy more than 10 feet to the mile.

We invite comparative tests. Before you decide on any Speed Indicator, put the Auto-Meter on one side of your dash and any other indicator at any price on the other. Then use your watch over a measured course. Keep the instrument which tells the truth. We know which it will be.

The Warner Instrument Company

Factory and Main Offices—420 Wheeler Ave., BELOIT, WISCONSIN

BRANCH HOUSES—New York, 1902 Broadway; Boston, 925 Boylston St.; Philadelphia, Cor. Broad and Race; Pittsburg, 3432 Forbes St.; Cleveland, 2062 Euclid Ave.; Buffalo, 722 Main St.; Detroit, 239 Jefferson Ave.; Chicago, 1305 Michigan Ave.; Indianapolis, 330½ N. Illinois St.; St. Louis, 3923 Olive St.; San Francisco, 550 Golden Gate Ave.; Los Angeles, 1212 S. Main St.

PALMER-SINGER

ALL CARS SOLD LICENSED UNDER AND GUAMANTEED BY US ARE SELDEN PATENT FOR ONE YEAR.



PALMER-SINGER SKIMABOUT
1909 Model, $2150, equipped except top.

If you want a light car of medium horse-power made with the scrupulous care given to the high powered, highest priced foreign cars, made of the best material by the best workmanship in the world, the Palmer-Singer Four-Thirty is the one car which meets your requirements.

Palmer & Singer Mfg. Co.

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The Service and Selling Success of the Year is the

"Firestone"

NON-SKID TIRE

No other tire has ever appealed so sensibly to the motorist; no other has ever so effectively fulfilled its purpose. Its tough, all-rubber tread presents a mass of angles, edges and points of road-contact that PREVENTS skidding. Does away with all metal and other self-destroying features in tire construction that have hitherto made non-skids short-lived and unreasonably expensive in mileage cost.

THE TIRE TO USE—THE TIRE TO SELL

"Progressive Locomotion"

Every auto maker, dealer, owner and driver should send for this handsome new book (without any advertising), which illustrates the fascinating story of Vehicles, and of Rubber, from the crude to the perfection of today. Free upon request, stating size of tire used.

Firestone Tire & Rubber Co., Akron, Ohio

Branches and Agencies Almost Everywhere.

"The largest exclusive rubber tire makers in America."

History Repeats Itself!

In 1908

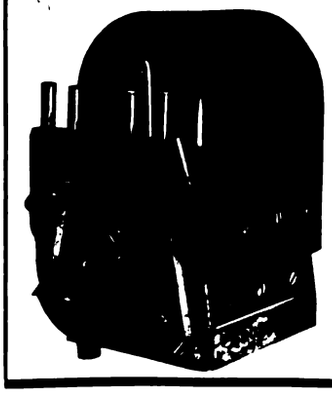
The World's Foremost Races

again won by

BOSCH

MAGNETOS

UNITED STATES: Florida Meeting (Ormond Race). New York-Paris Race, Savannah Grand Prize, both 24 Hour Races at Brighton Beach, Glidden Tour.



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ENGLAND: Fiat-Napier Match, Isle of Man Race.

ITALY: Coppa Florio e Targo, Bologna.

GERMANY: Prince Henry Race.

AUSTRIA: Semmering Hill Climb Race.

RUSSIA: St. Petersburg-Moscow Race.

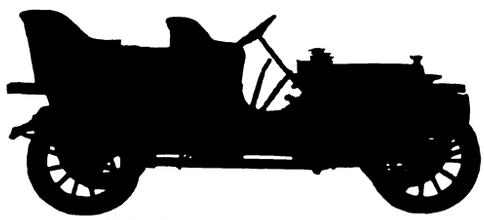
BOSCH MAGNETO COMPANY

223-225 W. 46th St., New York

Chicago Branch: 1253 Michigan Ave.

Pullman '09

Cars justify the implication of luxury the name implies.



MODEL K—PRICE $2,000.00.

Four Cylinders, 30 H. P., 4½" Bore and 4½" Stroke. Bosch Magneto.

¶ They are built for safe, comfortable travel and their efficiency has been amply demonstrated by their victories in the hardest, most gruelling cross-country runs and hill climbs in all parts of the country.

¶ There isn't anything better in looks or style. Model for model there isn't anything better in the power-plant or its arrangement, and we don't know of a single up-to-the-minute feature Pullman cars lack. Prices from $1,500 to $3,500.

¶ We honestly believe there isn't a line on the market that can touch the Pullman in so emphatically giving "value received" to the buyer. Look it over yourself, or get in touch with us.

¶ The Pullman line isn't going to be a "safe bet" for any live agent to overlook for 1910. NOW is the time to get busy.

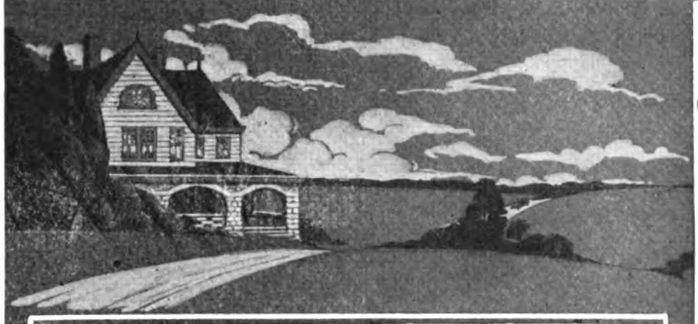
YORK MOTOR CAR CO., York, Pa.

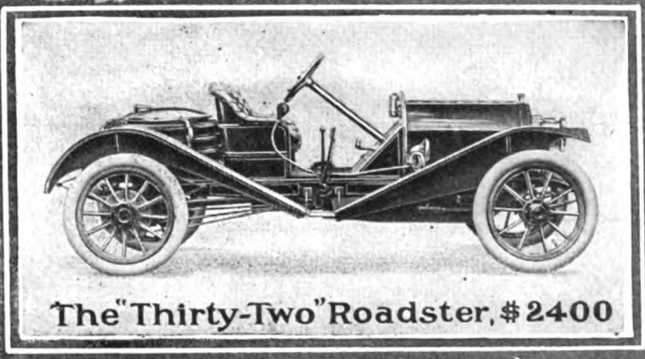
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THE MARMON

"A Mechanical Masterpiece"







The "Thirty-Two" Roadster, $2400

Value, Not Venture

The marked mechanical perfection, the unusual durability, and the thorough dependability of Marmon cars have never been questioned by well informed, experienced motorists. For over fifty years, its manufacturers have enjoyed a world-wide reputation as builders of high grade mechanical products.

These facts will weigh heavily with the thoughtful buyer in considering the Marmon "Thirty-two." Light, powerful, and unsparingly equipped, it invites the most searching comparison with anything on wheels at $3,500 or less.

Motor, 4 cylinder, 4½ x 4½. Water-cooled. 32-40 H. P. Three-point support. Ignition, Bosch H. T. Magneto, dual system. Lubrication, Marmon system of automatic force feed through hollow crankshaft. Drive, straight line shaft. Selective transmission and rear axle one compact unit, very accessible. Large brakes, effective and very durable. Materials, absolutely the best of everything, including Krupp and Chrome Nickel Steels. Hess-Bright imported ball bearings. Tires, Q. D., 34 x 4. Wheel Base, 112 in. Weight, 2,100 lbs. Equipment, complete and high class. Bodies, Sheet Metal. Touring Car seats five; Suburban (detachable tonneau), seats four; Roadster seats two. Also Coupe or Limousine Town Car.

Marmon "Fifty" (Seven Passengers), $3,750.

Nordyke & Marmon Co. (Estab. 1851) Indianapolis, Ind.

Standard Mfrs. A. M. C. M. A.

The Easiest Riding Car In The World

The Chief Thing You Buy

when you get a **STEVENS-DURYEA** is peace of mind. You get a car that has established a record for freedom from tire troubles, freedom from mechanical troubles and freedom from the need of frequent overhauling such as cannot be bought *in any other car at any price.*

Freedom from troubles of this sort means certainty of operation,—certainty of operation brings peace of mind.

THE STEVENS-DURYEA 1909 line consists of

Light Six Model U
Four Cylinder Model X
XXX Runabout
XXX Baby Tonneau
6-40 Six Cylinder Model Y

Send for Complete Catalog

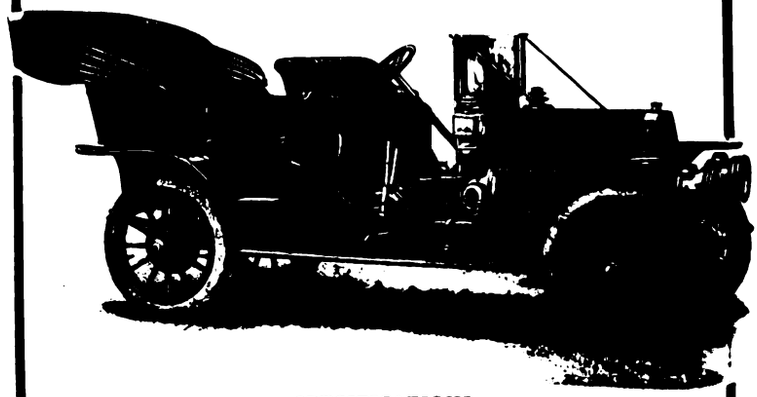
STEVENS-DURYEA COMPANY

Members Association Licensed Automobile Manufacturers.

Chicopee Falls, Mass.

THE "JEWEL 40"

The Non-Skidding Car



SPECIFICATIONS

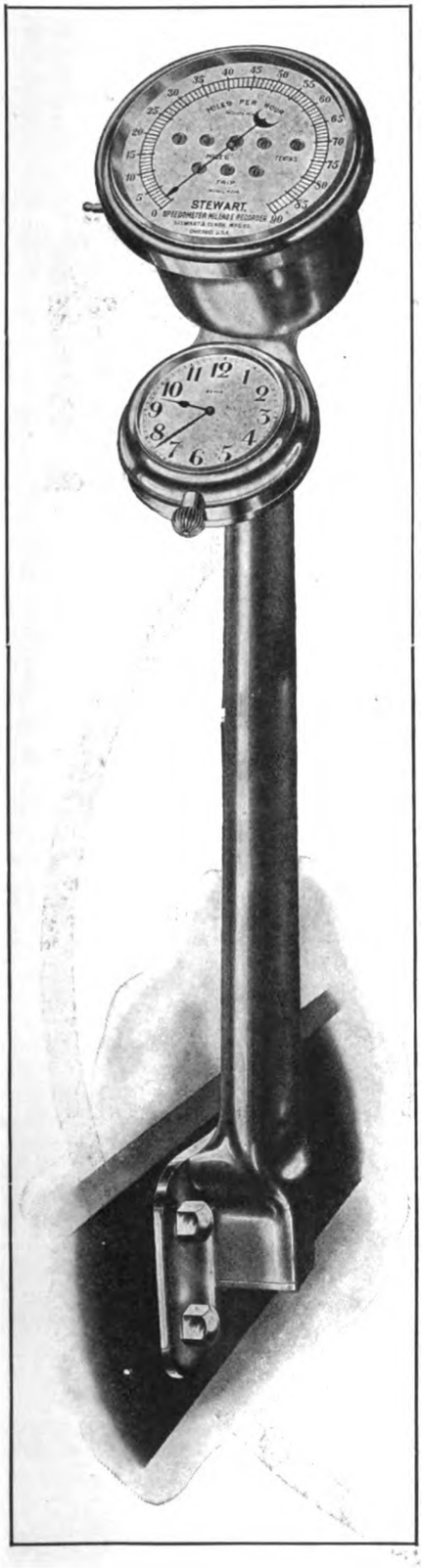
ENGINE—Rutenbur.
BORE AND STROKE—4⅛x5"
IGNITION—Double—Bosch Magneto, Connecticut Coil and Exide Storage Battery.
LUBRICATION—Self contained system with oil level pump in crank case.
TRANSMISSION—Selective type, 3 speeds forward and reverse.
BEARINGS—Timken Roller.
FRONT AXLE—One piece drop forging.
REAR AXLE—Full floating type.
WHEEL BASE—120".
WHEELS—36".
TIRES—Goodyear, Diamond, Firestone or Hartford, 36x4" front, 36x4½" rear.
BODY—Seven passenger.
WEIGHT—3,000 lbs.
PRICE—$3,000.00 complete with top, Hartford Shock Absorbers, Prest-O-Lite gas tank, 9" Rushmore Search lights, side lamps and tail lamp, double tire irons and trunk rack.

Write for catalog.

THE JEWEL MOTOR CAR CO., Massillon, Ohio

New York Agency, JEWEL MOTOR CAR COMPANY, 1662 Broadway.

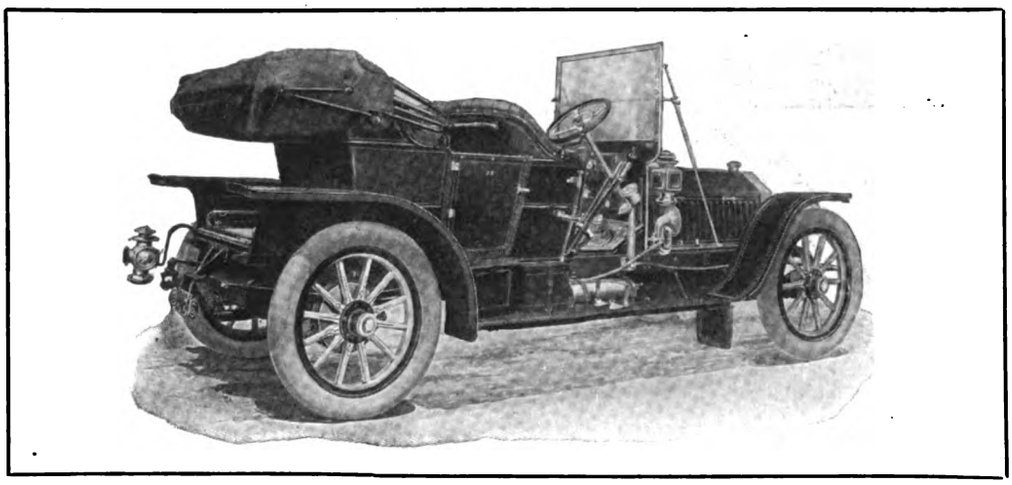
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A TRULY EXCELLENT SPEEDOMETER

THE Stewart Multipolar

(Model 14)



Marvelously Accurate

90-mile scale
Diamond bearing
Built for highest powered, highest priced cars.



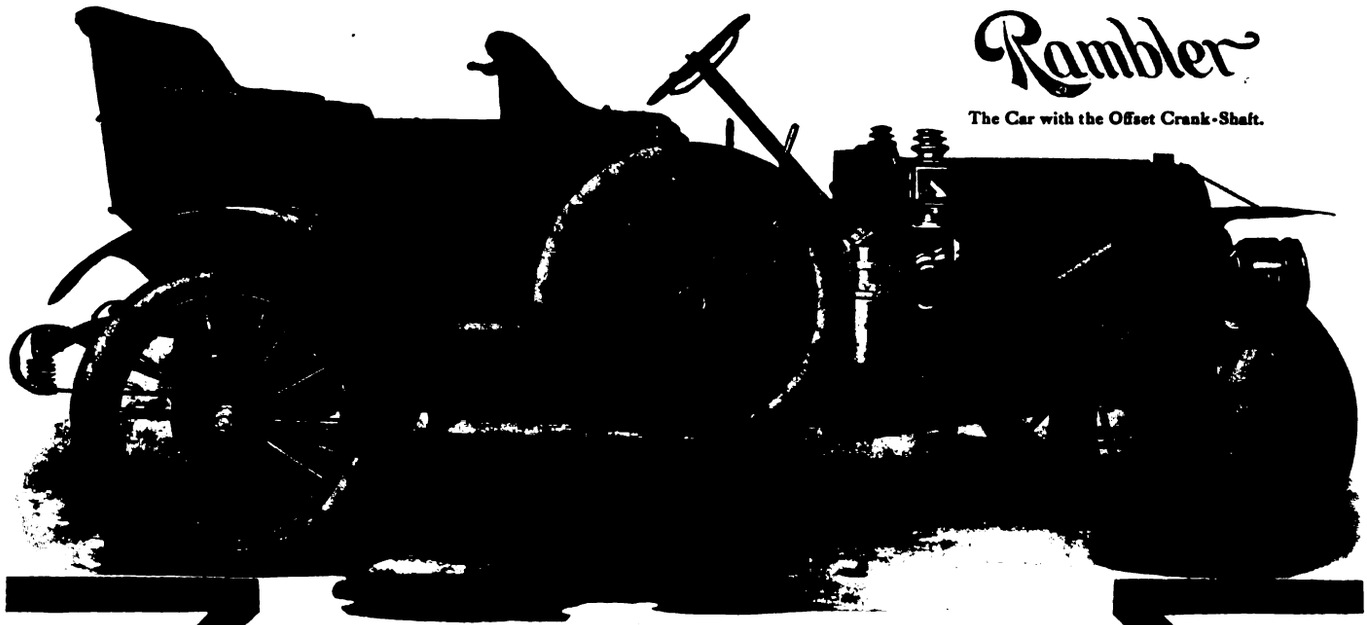
WRITE FOR FULL PARTICULARS.

Stewart & Clark Mfg. Co.

509 Diversey Boulevard, Chicago, U. S. A.

Branches: { 1878 Broadway, New York
{ 697 Woodward Avenue, Detroit, Mich.

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Rambler

The Car with the Offset Crank-Shaft.

Model Forty-four, 34 H. P., $2,250.
Spare Wheel, with Inflated Tire, Brackets, and Tools, $74. Magneto, $150.

TRY IT ON THE HILLS

Test this car at half-speed on a hill or sand road where power—and every ounce of it—is needed. Notice how steadily and powerfully it pulls when running slowly under load.

The capacity of the Rambler engine for doing this extra work is most noticeable at low engine speeds. This is because of the Offset Crank-Shaft.

All that power which in other engines is lost through friction on the bearings and cylinder walls is added to the driving force by the Rambler Offset Crank-Shaft. It reduces friction, eliminates hammer on bearings, gives more power. The Straight-Line Drive delivers the power direct and with least frictional loss to the rear axle.

Seven-passenger model, 45 horsepower, with Offset Crank-Shaft, $2,500. Other models, $1,150 to $2,500. A new Rambler catalog has just been issued. It describes and illustrates all distinctive features of new Ramblers—the Offset Crank-Shaft, Spare Wheel, Straight-Line Drive, etc. A copy on request.

THE CAR OF STEADY SERVICE

Thomas B. Jeffery & Company, Main Office and Factory, Kenosha, Wis.
Branches and Distributing Agencies: Chicago, Milwaukee, Boston, New York, Cleveland, San Francisco

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THE MOTOR WORLD

Volume XIX. New York, U. S. A., Thursday, March 25, 1909. No. 26

WANT UNIFORM TRADE DISCOUNTS

Spark Plug Makers Propose a Scale for Jobbers and Dealers—Ignition Men in Conference.

Makers of ignition apparatus who are at the same time members of the Motor and Accessory Manufacturers arranged a series of conferences in New York City this week, looking to measures which will benefit their common trade interests. Among the most radical and important recommendations offered was one which was developed at the meeting of the spark plug manufacturers, and which contemplates a uniform scale of discounts to dealers and jobbers. Representatives of four prominent plug makers were present, including the Splitdorf Laboratory, A. R. Mosler, the Pittsfield Spark Coil Co., and the Janney-Steinmetz Co., with T. J. W. Kelly, of the Splitdorf organization, presiding as chairman. The meeting was held at the Hotel Cadillac on Tuesday morning, 23d inst., and was the first of the series. Various suggestions for standard plug sizes and other improvements were discussed, but the chief interest centered about the proposal for fixed and uniform discount figures for the trade.

So seriously was the matter taken up that the devising of contract forms that would adequately protect a uniform discount system was given consideration. As a result it was decided to take counsel with the legal advisers of the M. A. M. to see whether binding contracts could be made that would make the fixed discount plan feasible. If adopted, such a plan would affect only the jobbers and dealers, the matter of price to the car manufacturers being left open to individual discretion.

Following the meeting of the spark plug makers, the manufacturers of magnetos and coils held a conference on Tuesday afternoon, at the Cadillac. In attendance at this meeting were representatives of the Connecticut Telephone & Electric, Splitdorf, Autocoil, Hess-Bright, Remy and Pittsfield interests, with W. P. Wood, of the Pittsfield company, presiding. The third conference is scheduled for this afternoon (Thursday), at the Hotel Astor, when the manufacturers of timers and distributers will get together for a review of phases of the trade directly affecting their business. The conferences are in line with the M. A. M. policy of having the different classes of manufactures, constituting the membership, work in groups, on the committee plan. The conclusions of each of the meetings will be reported fully to the manufacturers in each group who were not able to attend, so that they will have an opportunity to express themselves before radical action is taken.

Hall and Wetzel in New Lamp Company.

Charles M. Hall and Thomas J. Wetzel, together with a number of prominent business men of Detroit, Mich., have organized the C. M. Hall Lamp Co., to manufacture automobile lamps of the high grade types. The concern is a Michigan corporation capitalized at $150,000, and will have its plant in Detroit. At a meeting held last Saturday, 20th inst., $100,000 of the capital was paid in, and the following officers were elected: John W. Leggitt, president; Thomas J. Wetzel, vice-president; J. F. Harty, treasurer; Charles M. Hall, secretary and general manager. As a pioneer lamp representative Hall is known throughout the trade, while Wetzel enjoys the widest possible acquaintance with the car manufacturers and the jobbers, as the selling agent for several prominent makes of parts and accessories. A complete line of the new company's lamps will be shown in the near future.

Receiver Asked for Gilmore.

Receivership proceedings have been brought against William R. Gilmore, of Philadelphia, Pa., who has been endeavoring to conduct a jobbing business in automobile accessories and supplies. He had an establishment on Broad street, but was in the "semi-jobber" classification.

WARNER SUES ON MAGNETIC TYPE

Stewart & Clark Made Defendants in Speedometer Infringement Action—"Multipolar" Model the Cause.

Having decided that there is not as much difference between "multipolar" and "magnetic" as the words might indicate, the Warner Instrument Co., of Beloit, Wis., has brought suit against the Stewart & Clark Mfg. Co., of Chicago, Ill., on the ground that the latter company is infringing the Warner patent rights as to the magnetic type of speed indicator for automobiles. The bill of complaint has been filed with the United States Circuit Court at Chicago, and specifically alleges infringement of the Warner company's patent No. 745,468, which was granted December 1, 1903, and which is claimed to cover the application of the magnetic drag principle to speeding indicating devices.

Heretofore the Stewart & Clark Mfg. Co. has employed the centrifugal principle entirely in the construction of its well known Stewart speedometers, but among many new models which the company produced for the 1909 season was a model denominated as being of the "multipolar" type. The polarity implied by the description proved to be magnetic polarity, the appearance of the model disclosing that magnets are utilized for the actuation of the indicating part of the mechanism.

Inasmuch as the principle involved has been a distinguishing feature of the Warner Auto-Meter from the first and because of the broadness of the Warner patent claims covering indicators using magnetic means for moving the responsive element, the suggestion of infringement was such as to impell the plaintiffs to have a final legal determination on the question. To this end the matter was placed in the courts, where the intricacies of speedometer construction will have an adjudication calculated to clarify the patent situation.

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CAN COLLECT DUTY OVER AGAIN

Foreign Cars Must Pay Each Time Imported, Though Bought Here—Automobile Ruling Affects Horses.

Payment of the import duty on a foreign car does not necessarily relieve it from being assessed over again on its second entry into the United States, according to a decision of the board of general assessors, in New York City, particularly if between its first and second importations it has been used and repaired abroad. Objection was made by Mrs. Charles T. Barney, widow of the late head of the Knickerbocker Trust Co., to paying the 45 per cent. which the collector of the port of New York insisted on levying on her machine when it was shipped back from Europe. Inasmuch as she had bought the car in the United States and the import duty had once been paid on it, she contended through her representative that the exaction of the duty for the second time was unjust and illegal. The board of general appraisers, however, sustained the collector, and cited a recent decision of the United States courts that an automobile of foreign manufacture, if used and repaired abroad after purchase in the United States, must pay duty on its return, even thought it has been assessed the Dingley tariff rate at the time of its original importation. Apparently it should have been arranged to get a "drawback" or return of the original duty when it was shipped abroad, in order to protect the owner.

Another decision by the board, as showing that automobiles are not the subject of special prejudice, resulted in a ruling that a horse is no more entitled to the "household effects" classification for free entry than is the motor car. In fact, the board's ruling was chiefly based on the recent decision of the United States Circuit Court of Appeals denying such exemption to cars.

Hawley Develops a Demountable Rim.

The Hawley Demountable Rim Co. has been organized in Minneapolis, Minn., by R. C. Hawley, formerly manager of the Hawley Auto Co. The concern plans to produce a rim of which Hawley is the inventor. Its general features are the placing of two lugs 120 degrees apart on the inner circumference and a worm binding at a third point, the latter being the only one at which the wrench or tool need be applied.

Death of Henry Timken.

Henry Timken, president of the Timken Roller Bearing Axle Co., of Canton, O., died in San Diego, Cal., on the 16th inst., at the age of 76 years. His illness lasted but a few days and its fatal termination was a surprise in spite of his age, since he was unusually sturdy and rugged. He was buried in San Diego on Sunday, 21st inst. Beginning his career in St. Louis when that city had but 25,000 people, Mr. Timken for 45 years was a conspicuous figure in the manufacture of roller bearing axles, but while retaining the presidency of the Timken company, retired from active business about 12 years ago and took up his residence in California. His first patent, which he manufactured and put upon the market, was the Timken spring. This was followed by his invention of the tapered roller bearing that bears his name.

Birmingham Has Factory Prospects.

Automobile manufacture in the South is the subject of considerable promoting effort, and Birmingham, Ala., is pluming itself over the fact that it has prospect of becoming a motor car producing city. A company capitalized at $250,000 is announced as about to establish a factory on Avenue B, to make a car which will be known as the "Great Southern Six" and which is not only to agree with its name in the number of cylinders, but is to be marketed at a very "reasonable" price. E. F. Enslen, of Birmingham, who is slated for the position of secretary-treasurer, declares that the plans of the company have been completed and that it will be under way in two or three weeks.

Paige and Wilcox Now "Triplets."

Fred O. Paige and H. A. Wilcox, formerly of the Reliance Motor Car Co., of Owosso, Mich., have organized their new company to a point where they are ready to receive propositions from communities that would like to have the plant. The concern will be known as the Triple Motor Truck Co., and Ann Arbor, Mich., has been given the first chance to subscribe for $225,000 worth of the stock.

Briscoe Brings Southern News.

Benjamin Briscoe, president and general manager of the Maxwell-Briscoe Motor Co., of Tarrytown, N. Y., has returned from a southern trip and reports business conditions, particularly in the automobile field, as having undergone a great improvement. The territory having its center in Atlanta, especially, is giving promise of a lively season.

Pelletier Relinquishes Studebaker.

E. LeRoy Pelletier will hereafter devote himself exclusively to the duties of advertising manager for the E-M-F. Co., of Detroit, Mich., and has given up the responsibilities of the Studebaker advertising which he not long ago assumed in addition. As a health recuperative measure he is taking a brief vacation.

Thayer-Isham Makes a Truck.

The Thayer-Isham Automobile Co., 1713 Dunlap avenue, Marinette, Wis., has completed its first motor vehicle. It is a 20 horsepower truck, with planetary transmission and high wheels.

DEALERS DEMAND COMMISSIONS

Sue Makers on Direct Sales in Their Territories—Assert Agency Rights—Defense Offered by Manufacturer.

Disagreements between manufacturers and dealers as to commissions on cars placed in the latters' territories, respectively, have led to no little litigation at different times, and two more law suits arising from disputes of this kind have just been added to the list. Claiming commissions due on two cars sold in its territory during 1906-8, the Palace Auto Co., of Kansas City, Mo., has filed an attachment suit against the Olds Motor Works, of Lansing, Mich., while in Norristown, Pa., suit has been brought against the Autocar Co., of Ardmore, Pa., by Henry R. Hoopes, a local dealer, on the ground that the defendant company sold cars in his territory in breach of the contract under which he had the agency.

In the suit against the Olds Motor Works, the plaintiff Palace Auto Co. alleges that because of the agency agreement which it had with the defendant company at the time, commissions to the amount of $1,080 are due it on the machines which the Olds company placed direct with customers in the territory, and $3,600 is also asked on other counts for money said to be owing to the Palace company.

The defendant in the Hoopes suit against the Autocar Co., in fighting the case contends that it kept its part of the contract until the plaintiff wilfully and deliberately made the breach. It is alleged that he did not lay in an adequate stock of cars, did not advertise the cars, and made no attempt to sell the cars, and that he sold other cars and made the statement that he was going to get all the contracts he could with different companies, push the best selling car and by means of his contracts keep out competition. Asserting further that he did not take the cars his contract called for, the defendant claims that while he was bound not to sell "unlicensed" cars, Hoopes gave money aid to others to sell them.

Fernand Renault Dies in Paris.

Fernand Renault, of Renault Freres, the well known French automobile manufacturers, died in Paris on the 22d inst. He was 46 years old, and his death was due to acute nephritis, he having suffered for some time from digestive and kidney trouble. With his two brothers, Louis and Marcel, he inherited a large cloth manufacturing business from his father, which provided sufficient money for the sons to experiment with motor cars early in the industry. In 1897 they began producing cars embodying original features of construction devised by Louis. The latter survives, but Marcel was killed in the Paris-Madrid race in 1904.

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RAINIER SOLD HIS HOLDINGS

Disposed of His Interests to Durant Before Forming New Company—Plant in Generalmotors Fold.

Back of the circumstances leading to the organization of the new Rainier Motor Co., there appears evidence of the delicate handiwork of the Flint (Mich.) manufacturer, who in floating a $12,500,000 holding company must needs have something for it to hold and who, it would seem, had cast a calculating eye on the Rainier plant as a possible acquirement some time ago. Although the purchase of the factory at Saginaw last week by a new concern, known as the Marquette Motor Co., and headed by W. C. Durant, of Generalmotors fame, was in the nature of a surprise to the trade, it is stated that before the closing of the transaction and before the forming of the new Rainier company, Rainier had disposed of all his holdings in the old company to Durant. The latter was thus facilitated in acquiring control of the property, in which he was also assisted by the bondholders in Saginaw.

As a result of the arrangement, the new Rainier company will pursue the lines on which the old company was originally conducted, and the Marquette Motor Co. will undertake the task of producing cars to its specifications and orders. So great are the expectations of business by the Rainier interests that it is thought that the factory's output for some time will be accounted for almost exclusively through this channel. Furthermore, Rainier indicates that his company also has plans for getting into the taximeter cab business in a large way before long.

Formal organization of the Marquette Motor Co. took place late last week, and resulted in the election of W. C. Durant, president; A. T. Ferrell, vice-president; and Arnold H. Goss, secretary and treasurer, these officers also constituting the board of directors. Of the capital stock of $300,000, the larger part, $175,000, has been subscribed by stockholders associated with the Generalmotors proposition; while $125,000 is taken by Saginaw people who were previously in the Rainier investment, in most cases as bondholders. Durant and Goss, general manager and secretary, respectively, of the Buick Motor Co., provide what may be regarded as ample representation for the Generalmotors interests in the officering of the concern as against the minority stockholders represented by Ferrell, of Saginaw, who was one of the chief bondholders. The $100,000 in bonds of the old Rainier company held by Ferrell on mortgage will at once be discharged, and capacity production is predicted for the immediate future. Such surplus of product as the plant may have over its arrangement with the new Rainier company, will be marketed, it is said, through the organization of Generalmotors agencies.

Plan to Make a Starting Device.

Organized with a capital of $50,000, a concern to be known as Long & Burress has undertaken to manufacture an automobile starter in Indianapolis, Ind. The device is the invention of George Burress, who after enhausting his finances in developing it, enlisted Dr. R. W. Long in the enterprise as senior partner. In principle the starter is a foot pedal communicating mechanically with the motor shaft in a ratchet combination having great leverage, so that a series of pushes on the pedal will turn the crankshaft.

Motor Fire Engines the Product.

After a long series of negotiations, S. W. Luetweiller has organized a company to manufacture automobile fire engines in Rochester, N. Y. Associated with him are Samuel B. Williams, formerly city treasurer in Rochester, and W. C. Smith. The company is reported to have purchased the plant of the American Laundry Machine Co. in Ames street, to which Leutweiller's present manufacturing equipment in Los Angeles, Cal., will be moved.

Mundy Examined by Referee.

The examination of Harry Mundy, of Utica, N. Y., who was forced into bankruptcy by his creditors, took place last week before Referee in Bankruptcy De LaFleur. It developed that his liabilities were $11,652.41 and that his assets comprise three pieces of real estate in which his equity amounts to about $5,000. The schedule, as filed, was found to be correct.

Becker Exchanges Jobs with Becker.

J. H. Becker and B. A. Becker have exchanged positions in the management of the Elmore Mfg. Co., of Clyde, O. B. A. Becker becomes secretary and general manager and J. H. Becker officially takes up the duties of treasurer. The transposition is simply a change of work more congenial to each, respectively, and involves no alterations in policy.

Plow Leaves Hartford Rubber.

Henry Plow, who for 13 years has served the Hartford Rubber Works Co. as assistant treasurer and treasurer, has resigned that office to accept the office of assistant treasurer of the Mitchell Motor Car Co. He will make the change on the first of the coming month.

Building Bodies on Pacific Coast.

The Beason Lumber Co., of Los Angeles, which recently was incorporated with capital stock of $250,000, has commenced the manufacture of automobile bodies and bentwood work generally. An output of 50 bodies per week is in prospect.

GOODYEAR VICTORY WAS FINAL

Supreme Court Refuses to Review Consolidated's Infringement Case—Relates to Solid Rubber Tires.

Conflicting patent interests in the tire and automobile industry have given trade importance to the comparatively recent attitude of the United States courts to the effect that where infringement proceedings have been met and defeated in one jurisdiction, they cannot be renewed against the same defendant in another district or circuit, a principle which has again been asserted this month in the winding up of a long legal battle over solid tire patents between the Consolidated Rubber Tire Co. and the Goodyear Tire & Rubber Co., both of Akron, O. The termination of the litigation, so far as the Goodyear company is involved as a defendant, came about through a decision of the United States Supreme Court denying the certiorari petition of the Consolidated company asking for a review of the Goodyear case, which had been decided in the latter's favor in the United States Circuit Court of Appeals.

In the spring of 1899 the Consolidated company began suit against the Goodyear company for infringement of the Grant patent on solid rubber tires, the action being filed in the United States Circuit Court at Cleveland, O. A decision adverse to the Goodyear company was rendered by Judge Wing, in October, 1901. The defendant carried the case up to the United States Circuit Court of Appeals, furnishing a $100,000 bond. On May 7, 1902, the court, consisting of Judges Day, Lurton and Severance, reversed the lower court and found in favor of the Goodyear Tire & Rubber Co. The plaintiff made application for a hearing to the Supreme Court of the United States, but the petition was denied.

Having gained a favorable decision against another rubber tire manufacturer about two years later, this time in the New York district, the Consolidated company again endeavored to have the Goodyear case reviewed by the Supreme Court, because of the conflicting decisions in courts of equal jurisdiction. On March 8, the Supreme Court for the second time refused to review the case, indicating that so far as the Goodyear company was concerned the action had its conclusion in the decision of the Court of Appeals. While in no way affecting the prosecution of infringement cases against other rubber companies than the Goodyear, the latter states that the Supreme Court's decision has the result of insuring it and its customers from further possibility of infringement suit under the Grant patent. Furthermore, the decision is of wide effect in confirming the policy of the Federal courts in protecting a defendant from repeated attacks.

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In the Retail World.

Charles Custer has begun business in Sullivan, Ill., with a salesroom and garage. He will handle the Ford.

The Minneapolis Auto Tire Repair Station has opened at 1416 Hennepin avenue. Minneapolis, Minn. S. A. Nolan, from Akron, O., is in charge.

The Miami Automobile Co. is a new organization in Piqua, O. Its chief proprietor is Simon Amman, and it will have a "generalmotors" agency.

The Hartman Motor Car Co. will shortly start business in Omaha, Neb. F. G. Hartman is general manager and the company will handle the Marion.

The H. L. Keats Co., of Portland, Ore., has been appointed a distributor for Lozier cars. The company will have the entire State as its territory.

Simrell and Schnell, of the Court House Square Garage, in Scranton, Pa., have taken a new garage and salesroom. The location chosen is at 517 Linden street.

Chapman & McKenzie have opened a well equipped automobile repair shop in Providence, R. I. It is located at 773 Broad street, corner of Potter avenue.

The Burns Automobile Co., of Brooklyn, N. Y., has opened its new salesrooms at 1295 Bedford avenue. The old location at 31 Grant square will be retained as a garage.

L. C. Dennison has undertaken Winton representation in Cincinnati, O. He has leased the quarters lately occupied by the Second National Bank at 216 East Ninth street.

The Midland Motor Car Co., of Kansas City, Mo., has moved from its temporary quarters at 318 East Eleventh street to a new home. The latter is at 1606 Grand avenue.

The Jackson Motor Car Co., of Kansas City, Mo., managed by J. C. Powlesson and W. E. Mallory, has a new salesroom at 1714 Grand avenue. It provides more room than formerly.

W. P. Book, of Los Angeles, Cal., has taken the agency for Alco cars. He is building a salesroom and garage on South Olive street, which will be devoted exclusively to these cars.

A. J. Gorman, formerly of Kaiser & Gorman, St. Louis, Mo., agents for Dayton tires, has severed his connection with the firm. He is now the local agent for Standard speedometers.

G. W. Sewell and O. Johnson have formed the Iowa Auto Co., which will conduct a sales, garage and repair business in Clinton, Iowa. The concern has taken a building at 116 Sixth avenue.

The Post Motor Co., of New York City, handling the Hart-Kraft delivery wagons, has changed its location. It has moved from its former quarters at 1623 Broadway to 229 West Fifty-fourth street.

The Locomobile branch in Chicago, Ill., is to vacate its present location and move further south on Michigan avenue. A new building is being put up for its occupancy at the corner of Twentieth street.

W. H. Thompson has established an automobile repair shop at Fifteenth and H streets, northeast, Washington, D. C. Being in the suburbs, it is the first to be encountered on the road from Baltimore.

To handle Velie cars in Kansas City, Mo., a new concern has been formed, called the Evans Automobile Co. The organizer is George Evans of the Evans-Smith Drug Co., and the headquarters will be at 1927-9 Grand avenue.

The first automobile garage in Chelsea, Mich., has been opened by Mark Lowry. It is in the basement of the old Glazier building which was originally built for an automobile factory and is well adapted to garage purposes.

Charles M. Lee, of Newark, has been made manager of the branch of the Essex Automobile Co., which has been established in Montclair, N. J. He will handle the Jackson and Ford and will also institute a taximeter cab service.

A receiver has belen appointed for the Atlantic Automobile Company and Machine Works, of Atlantic City, N. J. George W. Meredith is the appointee and he will conduct the business as heretofore pending foreclosure proceedings.

In Indianapolis, Ind., a new salesroom for Marmon cars has been opened, to be known as Local Branch, Nordyke & Marmon Co. It occupies the ground floor corner of the Central Union Telephone building and will be in charge of C. E. Gambill.

W. D. Woolwine, formerly a banker, has entered the automobile business in Los Angeles, Cal. He has become treasurer of the Woolwine Motor Car Co., which has taken the local agency for Rapid trucks. Woods R. Woolwine is president of the corporation.

Tom Botterill, of Salt Lake City, Utah, has moved into a large new garage on State street, between South Temple and First South. The new building, which is of cement, has two stories and a basement and is equipped with elevator and the most modern garage and repair devices.

The Terre Haute, Indianapolis & Eastern Traction Co. is erecting a garage and electric charging station in Terre Haute, Ind., on North Ninth street, between Wabash avenue and Cherry street. While primarily for the local officials of the company, public business will also be solicited.

The Studebaker Bros, of Indianapolis, is to be the name of the firm which will handle the Studebaker lines in the Indiana metropolis. Frank Staley has been appointed manager, and pending the completion of the concern's new building on North Pennsylvania street, temporary quarters have been taken at 400 North Capitol avenue.

The Week's Incorporations.

Atlanta, Ga.—National Taxicab Co., under Georgia laws, with $15,000 to $250,000 capital. Corporators—H. L. Hopkins and J. H. Johnson.

Enid, Okla.—Enid Automobile Co., The, under Oklahoma laws, with $10,000 capital. Corporators—R. W. Couter, Michael Goodnature and C. V. Cessna.

Grand Forks, N. D.—Sims Automobile Co., under North Dakota laws, with $10,000 capital. Corporators—C. D. Lord and F. C. Lord, of Park River, N. D., et al.

Algona, Ia.—Algona Automobile and Machinery Co., The, under Iowa laws, with $10,000 capital. Corporators—F. E. McCorkle, L. J. Dickinson and H. B. Gardner.

Taunton, Mass.—Taunton Taxicab Co., under Massachusetts laws, with $2,000 capital; transportation. Corporators—William E. Rose, Harry Carlow and Frank B. Mason.

Dover, Del—Automobile Repair and Sales Co., The, under Delaware laws, with $5,000 capital. Corporators—E. J. Forham, H. M. Browne and J. J. Harper, all of New York City.

Columbus, O.—Columbus Auto Brass Co., The, under Ohio laws, with $10,000 capital. Corporators—C. S. Means, Roy Coffman, D. B. Neil, C. E. Roth, G. E. Smith and F. C. Eaton.

Milwaukee, Wis.—Wisconsin Motor Mfg. Co., under Wisconsin laws, with $50,000 capital. Corporators—Charles H. John, Edward Schwartzburg and Fred C. Kuetemeyer.

Camden, N. J.—P. G. H. Auto Delivery Co., Inc., under New Jersey laws, with $125,000 capital; automobile delivery business. Corporators—W. A. Pittis, A. Wood and V. A. Murray.

Chicago, Ill.—American Auto Appliance Co., under Illinois laws, with $200,000 capital; to manufacture automobile appliances. Corporators—E. A. Garvey, C. A. Garvey and F. R. Belt.

Chicago, Ill.—Centaur Motor Company of Illinois, under Illinois laws, with $10,000 capital; to deal in motor vehicles, etc. Corporators—A. M. Robbins, Robert E. Haley and Albert E. Lake.

Chicago, Ill.—Allen Fielder Co., under Illinois laws, with $5,000 capital; to sell cars and accessories and conduct garage. Corporators—Charles R. Browne, Charles Martin and H. M. Ryall.

San Antonio, Tex.—Seeing San Antonio Co., under Texas laws, with $6,000 capital; to operate sight-seeing motor vehicles. Corporators—P. B. Schmeelk, W. S. Beavers and J. N. Muncester.

Kittery, Me.—Panther Car Co., under Maine laws, with $100,000 capital; to manufacture and sell motors, cars, etc. Corporators—H. Mitchell, of Kittery, president; S. J. Morrison, of Portsmouth, N. H., treasurer.

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GERMANY EXPERIENCES A SETBACK

Law and Labor Difficulties Make the Motor Situation Unsatisfactory—Some Other Causes of Stagnation.

In contrast to some of the other automobile producing countries of Europe, the appearance of activity and prosperity in motor car production which earlier in the year was presented by Germany was the occasion of no little remark by American observers who were abroad at the time of the Paris Salon, but the Fatherland has since relapsed into a much less flourishing condition, according to a Berlin correspondent of the Motor World who has made a canvass of the situation. Commercial vehicles and cheaper fuel present two live problems with which the German trade is wrestling, and the manufacturers of cars are having both law and labor difficulties.

"Special reasons are responsible for the unsatisfactory motor situation," he declares. "The high government tax which went into effect at the beginning of the year and the proposed liability law (Haftpflichtgesetz) which is now seriously discussed in the parliament, have produced something like a standstill in the market by greatly lessening the number of people wishing to purchase cars. The liability law would render an automobile owner responsible for any damage done to other people by his machine irrespective of whether he was riding in the car or not. The money market was extraordinarily bad the past year, and the effect of the custom tariff was to favor the import and hinder the export of automobiles. On the whole the economic situation in Germany, from the motor car standpoint, has been and still is anything but pleasant.

"At the beginning of 1908," he explains, in reviewing the condition of the German industry, "there were many orders, and during the spring and the first summer months the works were quite busy. But the getting of orders for the rest of the year was never before so difficult. Furthermore, there was continuous bad weather in summer and the large crowds usually flocking to the numerous beer gardens remained at home. Consequently the breweries had occasion to carry but little beer to such resorts, this transportation being done chiefly by motor cars. Still more were the omnibus companies affected, particularly those maintaining motor lines to thousands of pretty suburbs and villages such as prevail in South Germany. A number of local concerns went out of business for want of passengers.

"This, of course, did not favor the development of the local traffic by means of motor vehicles, to which latter so much attention is given by the manufacturers in the German empire. The fares were generally so low that not much profit is left, and it is the intention to raise them soon.

"Experiments have been made to cheapen the fuel," he continues, "and with some success. Considerable benzole is being used now as it is much cheaper and is thought to give the same power. It has the further virtue, from the German view, that it can be produced at home.

"The most numerous and longest motor bus lines are at present in Bavaria," it is stated, "where the results as concerns safe service and satisfactory profit are quite satisfactory. The government representatives of that kingdom granted 2,500,000 marks to further the overland traffic by motor cars, especially to supplement the local railways. Other parts of Germany are making serious efforts to follow this example.

"The number of automobiles used in the mail service is increasing, and in this respect Bavaria is again leading. Munich and Nuremberg are the cities presenting the best examples. Considerable use is made in all of Germany of motor cars for fire departments, municipalities and the army—for the latter perhaps to a larger extent than in any other country.

"As regards export, the crisis in London affecting the omnibus companies, through the new tariff and the London police regulations, had an unfavorable effect upon the many German firms building heavy cars and buses for the British metropolis. In former years this special line has been a lucrative business, but in 1908 the profits had already been much reduced for want of orders. On the other hand the export for South America has become very extensive. However, the large number of cars made for foreign countries has had a reducing effect upon the price.

"Continuous dissatisfaction is prevailing on the part of the workmen in the shops, and the constant desire for higher wages results in frequent strikes. These have not lasted long, however, and now when so many men have been laid off they are satisfied to find employment under the old terms."

Austria is incidentally mentioned as having greatly increased its home production of motor cars during the past year, four large plants having been erected in 1908. These, it is stated, are sufficient to supply domestic demand quantitatively, while the quality of Austrian production has always been high. The Austrian custom tariff has reduced the import of cars from the 90 per cent. of former years to a much lower figure. Certain types of voiturettes are even built for foreign customers.

Big Plans for Phillips's Lawn Mower.

C. H. Phillips, a bicycle dealer of Poughkeepsie, N. Y., has patented what is described as a "combination field and farm motor lawn mower," of which great things are expected; so great indeed that it is stated that a two million dollar company is being formed to manufacture it.

BATES'S BAIT GOES A-BEGGING

Mail Order System Fails to Revolutionize the Tire Trade—Its Promoter Admits Buyers are Reluctant to Bite.

Whatever panics and perturbations the dealers and the old line manufacturers of automobile tires may have had as the result of the discovery by Charles Austin Bates that what the automobile owner has long needed is a tire factory from which he may get his tires direct on the mail order system, were unwarranted after all. The fears and quakes which it aroused can go back to cold storage again, and the established makers may breathe free once more, because Charles Austin has discovered that his previous discovery was a false alarm and that "there is really no place for a direct-from-factory-to-consumer tire."

"I have made up my mind that I was wrong about the selling of '——' tires at a net price, direct to the consumer," he writes to the treasurer and sales manager of the rubber company in Rutherford, N. J., of which he is the august president. "I overestimated the willingness of an automobile owner to save money at the expense of some inconvenience. After five months of experiment, I am satisfied that the owner is willing to pay for the convenience of being able to buy his tires in his own neighborhood from a local dealer, where he may also have the facility of a charge account."

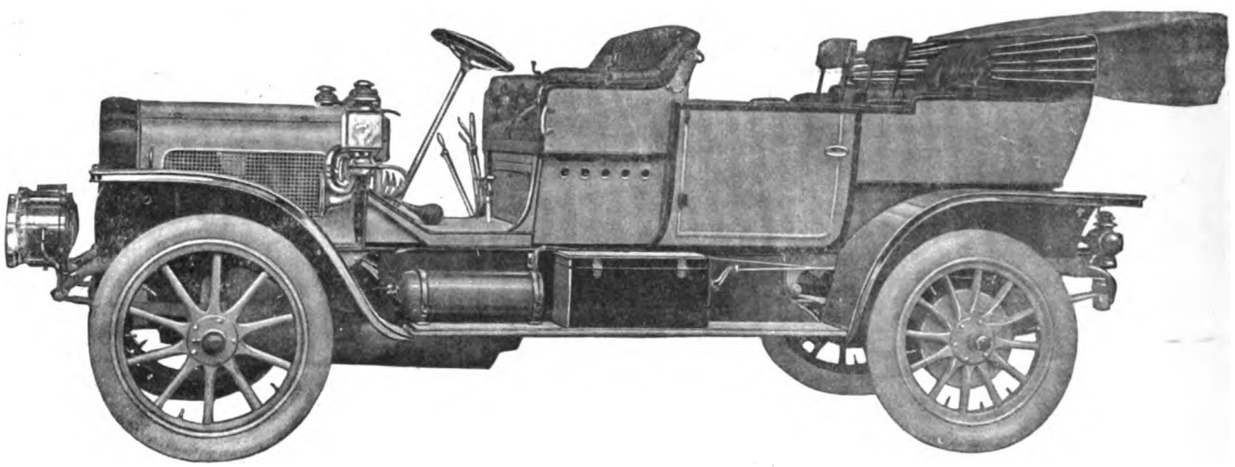
Doubtful as some of the more conservative tire makers have been as to the possibilities of the scheme which Charles Austin pushed for a time with vigor, it is nevertheless interesting to have him so frank in declaring its impracticability. As a one time advertising "expert" and subsequently as a gold mine promoter, he has great confidence in the power of the process letter, when devised with "pulling" copy, to create customers. But apparently the attempt to market even the modest output of his tire factory by this method has not met with the success that he anticipated, although he still holds the door open to retail, mail order trade, and still uses the circular letter to encourage it. However, the tires are no longer to be strictly direct mail order goods and suitable concessions will be made to dealers and others who will help in finding a market for them.

In reviewing the defects of the system in its entirety he is of the opinion that: "Rather than be compelled to send us his money in advance, the owner will willingly pay a dealer's legitimate profit." How general such reluctance is to part with money in advance for goods with which the owner is not familiar, he does not state, but makes it plain that on tires, at any rate, the motoring public is not highly susceptible to the enticements of the direct mail order marketing method.

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THE WHITE STEAMER

Is the Most Desirable Car



The White Steamer has many desirable qualities not possessed by any other automobile. It is the only car which is noiseless, odorless, smokeless and free from vibration. It is the only car which can be driven at any speed without the shifting of gears. For these reasons the passengers in a White enjoy a degree of comfort not obtainable in any other type of car.

The superiority of the White in these respects was well summed up in the following official report by the Quartermaster-General of the United States Army:

> "The White is simple in operation. The means of propulsion being steam, it is better suited for the transportation of the sick and wounded than gasolene cars on account of its free and smooth running, freedom from violent vibration and ease of controlling the speed between maximum and minimum without jerks or jolts."

These considerations, which influenced the War Department (and later the Navy Department) to adopt the White exclusively for motor ambulance work, should incline the private purchaser, who values simplicity and comfort, toward the White.

The White has an unequaled record for supreme reliability and for low cost of up-keep, and anyone who purchases a car without at least investigating the White is acting with only a partial understanding of present-day attainments in the construction of automobiles.

We make two models—a 20 horse-power car at $2000 and a 40 horse-power car at $4000 (shown above).

Write for catalog.

THE WHITE COMPANY

CLEVELAND, OHIO

NEW YORK CITY, Broadway at 62d St.
BOSTON, 320 Newbury St.
PHILADELPHIA, 629-33 N. Broad St.

PITTSBURG, 138-48 Beatty St.
CLEVELAND, 407 Rockwell Ave.

CHICAGO, 240 Michigan Ave.
SAN FRANCISCO, Market St. at Van Ness Ave.
ATLANTA, 120-122 Marietta St.

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Protection of Cars in the Garage.

Many garage men who lay stress on the completeness of their facilities for repairing cars overlook the importance of protecting the upholstery and coach work from the havoc wrought by careless workmen who lay their tools on fenders or woodwork and allow their greasy hands and clothes to touch the paint. A Belfast (Ireland) concern which makes a specialty of repairing motor cars has recognized the importance of protecting the finish and upholstery of cars entrusted to its care, and has devised a system of covers which are applied to the finished surfaces of cars brought in for repairs before any work is begun. The covers which are specially made for the purpose are placed on the upholstery, fenders and spring hangers. When wheels are to be removed for the attachment of speedometer driving gears, or repairs to pivots, covers are placed on the tires to protect the wheels from becoming scratched or the finish marred through contact with tools, greasy hands or grimy and gritty wearing apparel.

Such an example might well be adopted by American garages, for no matter how careful the workman may be, or how small the adjustment, it is impossible to avoid coming in contact with the finish which only can be to its detriment. The precaution affords the motoring fraternity a guarantee on the part of the repairman that the car will be returned with the coach work and interior finish in the same condition as when received and that it will not require a visit to the paint shop or upholsterers to be made presentable. Painting and upholstering are considerable items of expense and where garage keepers adopt safeguards which tend to decrease the frequency of such work their foresight is certain to be duly rewarded. Motorists appreciate the adoption of methods which tend to reduce the cost of upkeep of their cars and show their approval of the garage man's efforts in their behalf by becoming permanent customers, and by bringing in additional custom.

Incidentally, those owners who maintain private garages will be repaid for the trouble of having covers made for their cars by the avoidance of scratches or the soiling of the finish when they or their chauffeurs are working around the engine or chassis. A refinished car never can be made to look "as good as new" despite assurances to the contrary.

The Little Joker in the Big Order.

Accessory makers who receive astonishingly big orders for their goods, but conditioned on a very low quantity price, have no reason to congratulate themselves on closing the business until they have waited through the subsequent season and have seen what happens. In all probability they have been made the victims of a piece of business strategy which despite its age is successful in breaking the prices of even the most experienced manufacturers, where the latters' vigilance or far-sightedness is temporarily blinded by the prospect of big business.

This delicate operation of breaking a manufacturer's prices is so frequently performed with such painlessness and the administration of "laughing gas" is so effective, that the patient sometimes does not really know what happened to him. While mourning his subsequent troubles he may even look back upon those who operated on him as his benefactors and never suspect the relation between the operation and its effects.

Apparently it would be very illuminating to a large portion of the accessory manufacturing trade to disclose to them that many of the big quantity orders which are floating around are nothing more nor less than "blinds" or "plants" by which a number of buyers combine on one big stock order and secure prices considerably lower than the maker is willing to grant to them individually. The placing of several enormous recent orders in the accessory field provides instances of this, and already some of the manufacturers concerned are beginning to feel the unpleasant results and to awaken to a realization of what the deals signified in actual fact.

After vain attempts to get an "inside" on a certain line of goods that is greater than that of their competitors, big buyers are not averse to combining in groups of from three to ten or more for a big order to be placed in one lump, if the manufacturer can be persuaded to grant a suitable quantity price. Amazed by the size of the order, the manufacturer may cut down to bed rock to meet the wishes of the one to whom the negotiations have been entrusted. Rarely does he have reason to suspect that when the goods are delivered they will be divided up among his best customers, who when his salesman comes around later, will airily announce that they will not need any more of his goods for some time.

Peculiarly enough, the very manufacturers who are strongest in their respective fields are the most tempting marks for a buying coup of this sort. Their goods being in steady and certain demand, the buyers are safe in plunging to some extent on a big stock order where the possibilities of a price reduction are at all attractive. Having fixed ideas of business policy which he maintains with corresponding vigor, the maker may long resist the attempts of the jobbers and dealers to beat him down on his prices, only to "fall for" the immense quantity order from a more or less mysterious purchaser who must have an "inside."

Struggling makers with unproved products do not encounter any of these beneficent pieces of good fortune, in meeting buyers who want to place orders for 50,000 or 100,000 at a time. No such luck. It is the maker whose goods are sure of steady sale

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who is approached with the quantity price proposition.

Not but what the jobbers or the car manufacturers or the dealers take a perfectly legitimate means of getting the best price they can. Even if the negotiator for the purchase keeps his own counsel as to where the goods are going to be used, or hints about export markets and vague new outlets, he is quite within his ethical rights to demand a reduced price for so large a quantity as he is prepared to order. Whatever harm comes to the accessory maker through supplying such buyers may be laid either to his inexperience or to his own lack of watchfulness and intelligent investigation.

Occasionally there may be reasons why a manufacturer should accept an order of this character, despite the fact that his eyes are open. He may be willing to make the price sacrifice to place a positive quantity order on his books for the ensuing season or to raise ready money. He may foresee a change in market conditions which his customers do not sense. Where he knows that the buyer is not ordering for himself alone, but for others as well, he can calculate and weigh all the phases of the effect that such a transaction will have on the future of his business.

Quite different, however, is the case of the accessory maker who having fought out the question of price with his trade and enjoying a steady business, is tempted to take the bait of some shrewd trader in the form of a staggering big order at a low price. An examination of the buyer's ability to sell such a quantity, thoroughly conducted, ought to yield an index of the degree of danger involved in supplying him. Before yielding to the quantity terms, the maker must remember also that whatever concessions he makes are almost certain to become known to his customers, giving them ground ever after for demanding price reduction. But what is most important of all, he should consider the probability that the goods sold at the low price will go into the territory from which he has heretofore been receiving a steady flow of orders at the old price. Such a result means that the territory will go dry of orders almost instantly and that never again can the old prices be fully restored.

In resisting the temptations put in his way and designed for his downfall, the accessory manufacturer may take courage from the fact that jobbers and dealers at heart have a secret affection and respect for goods on which the prices are absolutely fixed and uniform. The goods on which nobody is certain of getting the bottom are what cause the worry. Trade experience and development forces the conclusion that what the accessory maker needs, next in order to a good product, is a comprehensive selling plan and a stiff backbone—so stiff, in fact, that even the advisers in his own employ cannot make him bend obeisance to quantity orders.

Occasional comment is heard of the effect of the general appearance and finish in influencing the choice of ladies when purchasing a car. Appropos of which, instance the remark of one fair visitor overheard at the recent Boston show. "I don't think I like that car as well as that other one," quoth she, "I think mahogany makes a much better finish for a car than Circassian walnut anyway." The particular portion of the machine referred to was a couple of walnut strips running across the tops of the tonneau doors and representing perhaps 3 feet of rough stock, board measure. Manufacturers please note the advisability of providing a certain elasticity in such minor specifications as these, as perhaps more often than they wot the deciding factor is a matter of a half dollar's worth of inconspicuous and non-essential material upon which they have hardly deemed it necessary to devote more than a couple of minutes thought.

The New York Senate devoted two hours of Tuesday last to a discussion of "joy riding" and finally passed a bill making it a penal offense to use a motor vehicle without the owner's specific consent. It is desirable legislation, but it greatly is to be feared that it will not touch the most notorious of all "joy riders"—the city officials who appear to believe that the municipal automobiles, bought and maintained at the expense of the tax payers, are designed chiefly or largely for their personal pleasure and the pleasure of their families and friends.

A peewee publication, which for more than one reason makes a specialty of distributing manufacturers' catalogs, last week illustrated two remarkable performances. In one Jim Jeffries, the prize fighter, is "being paced by an automobile," which apparently is standing at the roadside or at any rate Jeffries is running away from it. In the other, a heavily loaded automobile is "climbing" a tremendously steep grade—so steep (!) that the houses and telegraph poles actually are falling down hill!

Two weeks since we referred to Automobile Topics as being more respectable than at least one other publication. Judged by more recent occurrences, however, it seems evident that we were mistaken.

COMING EVENTS

March 22-27, Toledo, O.—Toledo Automobile Dealers Association's automobile show.

March 23-26, Daytona, Fla.—The Motor Contest Association's (Inc.) seventh annual international races, Daytona Beach.

March 24-27, Syracuse, N. Y.—Syracuse Automobile Dealers Association's first annual show, New York State armory.

March 25, 26, 27, Logansport, Ind.—Automobile show, old rink.

March 27, Atlanta, Ga.—Fulton County Automobile Club's third annual hill-climb, Stewart's hill.

March 27-April 3, Pittsburg, Pa.—Automobile Dealers Association's show, Duquesne Garden.

April 1-3, Logansport, Ind.—Logansport Automobile and Motorcycle Dealers Association's show, Broadway garage.

April 10, New York City—New York Automobile Trade Association's second semi annual hill climb on Fort George hill.

April 10-17, Brooklyn, N. Y.—Automobile show, Claremont rink.

April 15-17, Louisville, Ky.—Louisville Automobile Association's show, Coliseum.

April 19-24, Bangor, Me.—Eastern Maine automobile and motor boat show.

April 22, Chattanooga, Tenn.—Three days race meet and hill climb on Lookout Mountain.

April 26-May 1, New York City—New York Automobile Trade Association's second annual automobile carnival.

May 3-6, Harrisburg, Pa.—Motor Club of Harrisburg's reliability contest.

May 10-13, Detroit, Mich.—Detroit Automobile Dealers Association's annual four days reliability run.

May 18, 19, Norristown, Pa.—Norristown Automobile Club's endurance run, to Hagerstown, Md., and return.

May 19-22, Philadelphia, Pa.—Quaker City Motor Club's endurance contest, Philadelphia-Pittsburg and return.

May 22, Hartford, Conn.—Automobile Club of Hartford's 200 miles endurance run.

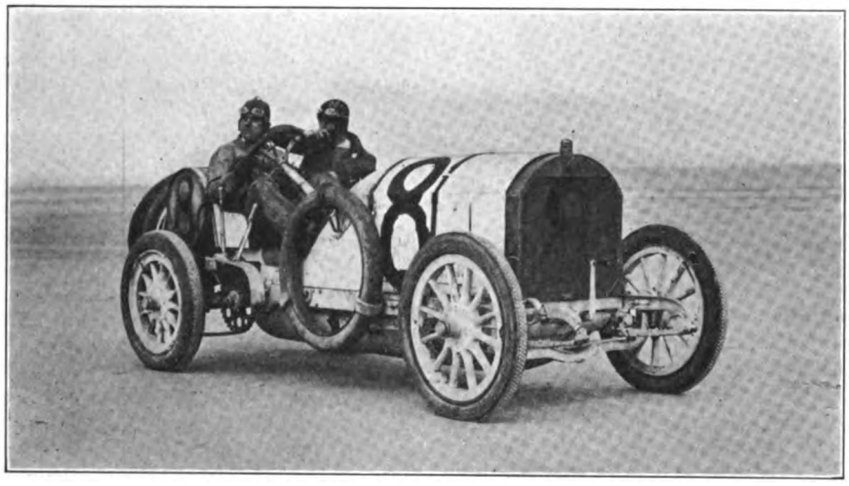
May 30, Wilkes-Barre, Pa.—Wilkes-Barre Automobile Club's fourth annual hill climb on Giant's Despair.

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BROWN CAPTURES DEWAR TROPHY

World's Record for Robertson—Bicycle and Motorcycle Contests the Exciting Features at Daytona Beach.

Daytona, Fla., March 23.—Exclusive Ormond, which originally was the "whole thing," again this year "passed up" the speed carnival and its next door, and not so exclusive, neighbor, Daytona, took over the function and received all the advertising and trade. And Daytona has drawn the crowd. The hotels are all filled, though apparently mostly with winter visitors who are staying over for the races, which is the real purpose of the carnival. The array of cars is not as promising as it had been hoped it might be, and the promised aeroplane exploits may not prove as thrilling as the public had been led to believe they would.



DAVID BRUCE BROWN, BENZ, WINNER DEWAR TROPHY

As a matter of fact, one flying machine did appear yesterday, long enough to go through the motions of a make-believe race with an automobile, but indications do not point to anything startling in this line.

Of the old-time throng of well-known automobilists, there is only a vague and scattered reminder. Most of those who are on the Beach, in fact, appear to be those who have come down on business connected with the races. Among these are S. A. Miles, who is acting as referee; Wilber F. Hobbs, of the Michelin Tire Co.; A. N. Mayo, Fisk Rubber Co.; J. M. Uppercue, Cadillac Motor Car Co.; Leonard D. Fisk, Hartford, Conn., agent for the Locomobile, who has a home here; W. B. Wise, General Motors Co.

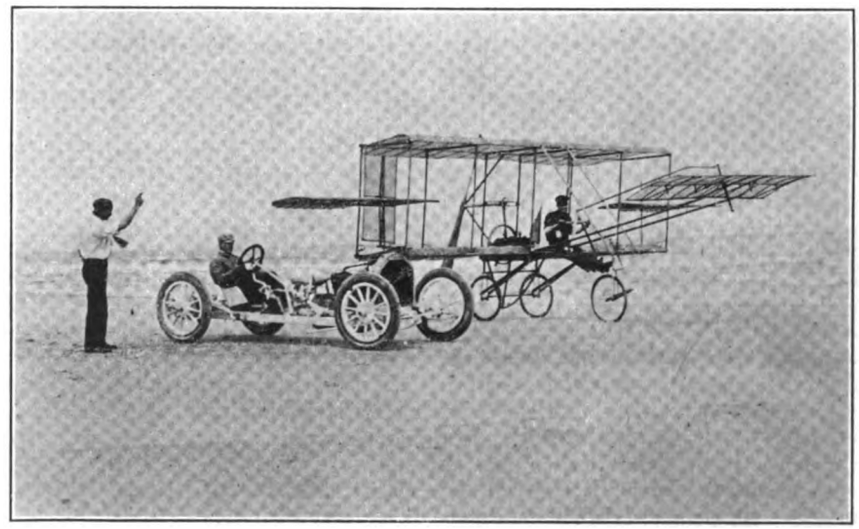
W. H. Pickens, well remembered about New York, and now racing manager for the generalmotors camp, also is here and appears prosperous. He is conspicuous in a pale green suit and a jaunty brown felt hat. Chevrolet, who is mentioned as designer of the Generalmotors racing stud, by the way, has not appeared. But drivers who will figure with these machines and who are on the beach already are Lewis Strang, George De Witt, Robert Burman and F. B. Myers. Herbert Lytle, lately recovered from a prolonged siege of typhoid fever, will handle a Cadillac car.

What was, by the testimony of Deputy Sheriff John Myers and other local luminaries, agreed to be the biggest crowd ever present on an opening day, witnessed the four events which were cleared off the program this afternoon. The grandstands were filled and for a mile in either direction crowds lined the course. Policed by 30 deputies, the beach was kept clear at first, but during the motorcycle trials which concluded the afternoon, the course was overrun and the danger to contestants and spectators correspondingly multiplied. That all-important factor in beach trials, the wind, was neutral, beginning east and shifting over to southeast later on.

By all odds, the most interesting feature of the afternoon was the bicycle race, while the motorcycle event is deserving of passing mention, particularly on account of the general claim that the mile speed record was broken by Wray, who rode a 15 horsepower "freak." As a matter of fact, Wray's machine was away over 61 cubic inches, the maximum displacement allowed under the rules of the Federation of American Motorcyclists; and nothing he ever may do on the freak will stand as a record.

Because the timing apparatus was short-circuited or otherwise disjointed, the 200 miles stock car race was run following the quarter mile dash for bicycles. Burman, Strang and De Witt, all driving Generalmotors and Herbert Lytle in the Cadillac, started for the turning point, ten miles south of the finish line. At the end of the first round trip down the beach, Burman was leading Strang by 50 yards. As the second car rounded the turn, a roll of tire tape slipped from the machine somewhere and went rolling away down the beach, creating some little excitement for the moment especially in the vicinity of the excited Pickens, who, conceiving that it was an intermediate pinion from the transmission, somehow gone astray, at once became very much agitated. Meanwhile, the time for the 20 miles was being noted as 18 minutes 17 seconds. The Cadillac, which followed, slowed at the turn, Lytle being under the impression that his steering gear was loose, but went on. De Witt, however, mistook the turn and continued past the point where he should have doubled, and only checked his speed when the howls of the crowd admonished him that he was far out of his course.

At 40 miles Strang had the lead, his time being 36 minutes 56⅘ seconds; with De Witt second, in 44 minutes 41 seconds. The Cadillac was away behind the others, while Burman had quit, carburetter trouble serving as the explanation. Strang again had the lead at 60 miles, with 55 minutes 2 seconds. De Witt, remaining in second, had clinched his advantage in the meantime by gaining a lap on the Cadillac. Thereafter,



START OF "RACE" BETWEEN AEROPLANE AND GENERALMOTORS CAR

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the green caps with white polka dots and flying streamers which were the Generalmotors insignia sailed onward without let or hindrance. Strang's time at 80 miles was 1 hour, 15 minutes and 20⅗ seconds, and he finished the 100 miles, to which the race had been curtailed, in 1 hour 34 minutes and 1 second, as against DeWitt's 1 hour, 44 minutes and 22 seconds. The Cadillac suffered from magneto trouble, it was said, but at all events it kept in motion until the last lap, which, however, it did not manage to finish.

The timing apparatus being finally adjusted, the three heats of the race for the Sir Thomas Dewar Trophy were run, proving at once the redeeming feature of the day in the matter of speed, and incidentally furnishing a second runaway exhibition. The only two starters were Ralph DePalma and David Bruce Brown, the young New Yorker who is an amateur under the A. A. A. rules and a pro under A. A. U. rules and who last year established a record for 35⅗ for the mile. Brown's mount was the Benz racer which Hemery drove at Savannah last fall, and which commonly is credited with unlimited speed capabilities. DePalma's Fiat was no match for it, though it should be observed that the latter has had no previous experience in beach racing, and the three heats went to Brown respectively in 33⅕, 33⅗ and 33 flat, as against DePalma's 36⅕ and 36 flat.

Second Day—Wednesday.

Daytona, Fla., March 24.—Due probably to yesterday's "runaways" and to the long drawn out proceedings, the crowd present on the beach today was much smaller and the racing was not of keener interest. The last event to be run was stopped by nightfall when only half over, and unless something startling happens it is not unlikely that the crowd is likely to leave Daytona without waiting for the finish of the meet. As a matter of fact, that portion of it which was in evidence this afternoon, left the beach long before the "sport" was over. As has happened before at Florida meets, the officials have begun to get in each other's way—which may be supposed to presage further disappointments.

The best event of the meet so far, was the five miles invitation race between DePalma in the Fiat, and George Robertson who drove the big Benz racer, which latter, barring mechanical troubles is almost sure to sweep the beach clean. DePalma's Fiat while commonly recognized as a fast car, is by no means the equal of the monster Benz, while Kilpatrick's Hotchkiss, former Vanderbilt contender and holder of various road records, somehow has not been got into shape as yet, and has been witheld from all events. The story of the race is quickly told: Robertson, with the quickest start, led DePalma all the way, finishing in world's record time a hundred yards ahead of his competitor, in 2 minutes 45⅕ seconds.

De Palma and Brown were the only starters in the ten miles, free-for-all, and the latter won easily in 5 minutes, 14⅗ seconds. De Palma's time was 5 minutes 42⅕ seconds.

Due to bungling, the five miles southern price and horsepower handicap, as it was styled on the program, was started as a scratch race. Gus Grosjean, driving the Pope-Hartford entry, made a runaway of it, leaving Laughlin's Cleveland and Robertson's Locomobile to second and third place, respectively, the latter only beating the Cadillac home by about 6 inches. Myers came in last, in the closest race seen thus far.

Although it was growing late and a strong south wind was blowing, which was most favorable for short record flights, Referee Miles insisted upon calling the 200 miles piston displacement classification race. This was the last race to be run, as well as the most tedious and uninteresting of the day. De Palma, who was leading, stopped at 120 miles on account of the darkness. His time was 1 hour, 33 minutes, 44⅗ seconds. The only other starter in the class for engines of more than 460 inches piston displacement dropped out during the first lap on account of a broken piston, and may not be able to compete again during the meet. De Witt's Generalmotors stopped at an even 100 miles, having done the distance in 1 hour 39 minutes 27⅘ seconds. Lytle's Cadillac had gone only 60 miles when the race was halted; while Strang in the class for motors of between 321 and 400 inches displacement, finished the hundred miles in 1 hour, 30 minutes and 24 seconds

Several bicycle and motorcycle events also were run off and a number of new records therefor were credited.

The morning hours were enlivened by an automobile parade, which served to arouse considerable enthusiasm and created a welcome diversion. The enthusiasm was not sufficient to outlast the disappointment of the afternoon, however, and it looks as though moving day for the crowd was close at hand.

The summaries:

First Day—Tuesday.

Quarter-mile dash, bicycles—Won by Joseph Fogler; second, W. L. Mitten; third, E. F. Root. Time, 0:30⅕.

Two hundred miles, Florida stock car price class race (classes E and D reduced to 100 miles by agreement of contestants and referee)—Won by Lewis Strang, Generalmotors; second, George De Witt, Generalmotors. Time, 1:3401⅕.

One mile, Dewar trophy—First heat won by David B. Brown, Benz; second, Ralph De Palma, Fiat. Time, 0:33⅕. Second heat won by Brown, second De Palma. Time, 0:33⅘. Third heat won by Brown; second, De Palma. Time, 0:33.

One mile, record trials, motorcycles—Best time made by Walter Goerke in 0:45⅕ (world's record).

Second Day—Wednesday.

Five miles, invitation race between De Palma and George Robertson—Won by Robertson, Benz. Time, 2:45⅕ (world's record).

Ten miles, free-for-all—Won by David B. Brown, Benz; second, Ralph De Palma, Fiat. Time, 5:14⅗.

Five miles, southern price and power handicap (run as scratch race through error)—Won by Gus Grosjean, Pope-Hartford; second, James Laughlin, 3d, Cleveland; third, George Robertson, Locomobile. Time not taken.

Two hundred miles, piston displacement class race (stopped on account of darkness)—Ralph De Palma, Fiat, 120 miles, time 1:33:44⅗. George De Witt, Generalmotors, 100 miles; time 1:39:27⅘. Lewis Strang, Generalmotors, 100 miles; time, 1:30:24.

Half-mile bicycle—Won by Joe Fogler, Brooklyn; second, W. L. Mitten, Davenport; third, Eddie Root, Boston. Time 47⅕ seconds. (Record.)

One mile motorcycle time trial—Won by Oscar Hedstrom, 14 horsepower Indian. Time, 44⅗ seconds.

Five miles motorcycle record trials—Won by Walter Goerke, Brooklyn, 7 horsepower Indian; time, 3 minutes 30⅕ seconds. second, Robert Stubbs, Birmingham, Ala., 7 Indian, 3 minutes 33 seconds; third, A. G. Chapple, New York, 7 Indian, 3 minutes 52 seconds. (Record.)

Ten miles motorcycle—Won by A. G. Chapple, New York, 7 Indian; second, Walter Goerke, Brooklyn; third, William Wray. Time, 8 minutes 57 seconds. (Record.)

Two miles bicycle—Won by Joe Fogler, Brooklyn; second, Eddie Root, Boston; third, W. L. Mitten. Time, 3 minutes 45⅕ seconds.

Why the Sultan Bought in Quantity.

Much astonishment was caused by the fact that when the pillage of the palace of Abd-el-Tziz, the Sultan of Morocco, took place the invaders found therein twelve motor cars and a hundred bicycles. The explanation given for this is amusing. It seems that when the Sultan of Morocco wished to obtain a motor car or a bicycle he was informed that in Europe it was customary to sells cars only by the dozen, and bicycles only by the hundred. Believing implicitly in the veracity of his informant, he made his purchases accordingly.

Dirt a Mischief Maker in Casings.

Of the evil effects of permitting dirt and gravel to find its way into tire casings when making roadside repairs, much is heard in tire repair booklets and in advice to beginners. Nothwithstanding the prevalence of these bits of warning, however, it is the experience of the head vulcanizer at the factory of the Goodyear Tire & Rubber Co., that about 20 per cent. of the inner tubes which are sent in for repair, show signs of scoring as a result of carelessness in just this particular.

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Toledo Show Testifies to Increasing Interest

Ohio's turn at the whirl of local automobile shows was renewed this week with the opening on Monday, 22d inst., of the Toledo show. The auditorium, which last season was amply large to hold the biggest local aggregation ever mustered in its line, now is just large enough for the purposes of the Toledo Automobile Dealers Association, which is holding the show, and indications point to a probable necessity of seeking more ample quarters another year, granting only a continuance of the expansion which has been witnessed during the past twelvemonth. As a matter of fact, there are something like four times as many cars on view as were shown a year ago, and nearly three times as many exhibits devoted exclusively to motor cars. Last year's show afforded representation to only seven different dealers. Now the representation has been swelled to nearly a score, while about 20 different makes of car are on view, covering a goodly share of the market and revealing in variety practically everything that the market affords. Accessories and supplies furnish the basis of nearly double the number of exhibits which are devoted to cars and the display is of the usual large variety.

In laying out the floor spaces Manager Shy C. Fisk, who is secretary of the dealers' association, has arranged the booths in three rows down the floor with an encircling series next the wall. The balcony is entirely devoted to the accessory and supplies people. By way of decoration, masses of white bunting are employed to conceal the gray walls of the building, while booths are ornamented with magnolia trees and various smaller potted plants, artificial and otherwise, in which here and there, concealed electric light bulbs help to shed a warmth of color and light upon the exhibits and tone down the unmasked glare of the overhead lights. Various amusement features, including the usual musical program, of course, serve to lighten the tedium of the show for the non-technical visitor. The list of exhibitors of cars, together with the machines they display, is as follows:

H. J. Adams, Reo, Kisselkar; Apperson-Toledo Co., Pope-Toledo; Atwood Automobile Co., Premier, Regal, Stoddard-Dayton, Velie, Overland, Waverley electric; Buick Motor Co., Buick; Central Auto Co., Maxwell, Mitchell; Gamble Motor Car Co., Baker electric, Rauch & Lang electric, Stearns, Peerless; Kirk Bros. Automobile Co., Thomas, Knox, Studebaker, E-M-F. "30," Columbus electric; Lichtie Automobile Co., Winton, Cadillac; Harry Overmyer, Glide car; Standard Garage, Brush, Hupmobile, Jewel, Ford; Roberts Toledo Auto Co., Fords; Olds Motor Works, Oldsmobile; Twenty-first Street Garage, Detroit electrics, Jackson; Union Supply Co., Stevens-Duryeas, Chalmers-Detroit cars, Pierce-Arrow; The White Co., White steamers.

Indianapolis Trade Holds Open House Week

Closely allied to a show week, and indeed, partaking of the nature of a "multiple-unit" show spread over the entire automobile territory of the city, Indianapolis, Ind., is this week enjoying a flood-tide of automobile enthusiasm. The fifteen dealers and eleven manufacturers who make up the local motoring contingent, have combined their efforts in making the week a profitable as well as a spectacular one. Today (Thursday) is to be signalized by a daylight parade of cars, old and new, decorated and otherwise, while all through the week "open house" is the rule. A series of gymkhana contests is another feature calculated to attract attention to the week's program, in addition to which a number of more or less impromptu speed, hill-climbing and endurance contests are promised or are in prospect, though none are regularly programmed.

The complete list of dealers and manufacturers who are participating in the event and are assisting the movement by extending a hearty welcome to all visitors as well as affording them an opportunity for demonstrations in endless numbers and unlimited amounts, is as follows:

Dealers.

Fisher Automobile Co., 400 Capitol avenue—Stoddard-Dayton, Overland, Maxwell, National, Empire.

State Automobile Co., 415-419 Massachusetts avenue—Oakland.

Indiana Carriage & Automobile Co., 27-33 North Capitol avenue—Jackson, Regal, Leader.

Chalmers-Detroit Automobile Co., 11 W. Walnut street—Chalmers-Detroit, Pierce Arrow.

Buick-Losey Co., 130-132 East New York street—Buick.

Willis-Holcomb Co., 330-332 North Illinois street—Apperson, Packard, E-M-F.

Motor Car Sales Co., 330 North Illinois street—E-M-F.

Gibson Automobile Co., 238 Massachusetts avenue—Premier, Reo, Ford, Marion.

Hearsey-Willis Co., 113-117 West Market street—White steamer, Waverley electric, Rambler, Mitchell.

Cadillac Automobile Co., 23 East Ohio street—Cadillac.

Finch & Freeman, 33 South Capitol avenue—Haynes, Auburn, Richmond.

Morton-Place Garage, 1840 North New Jersey street—Moline.

Indianapolis Automobile Co., 115 West Maryland street—Cartercar, Gyroscope.

Indianapolis Motor Car Co., 423 East Market street—Rapid motor trucks.

Nordyke & Marmon Co., Meridian and New York streets—Marmon.

Manufacturers.

National Motor Car Company, Twenty-second and L. E. & W. Railway.

Overland Automobile Co., Oliver avenue and Drover street.

Premier Motor Car Co., 221-225 South Shelby street.

Marion Motor Car Co., 742-750 East Washington street.

Cole Carriage Co., 950 West New York street.

American Motor Car Co., 420-430 South Illinois street.

Nordyke & Marmon Co., Take Stockyards cars, Morris street and Kentucky ave.

Waverley Co., 139 South East street.

Irvin Mfg. Co., Tenth street and canal.

Wheeler & Schebler, Shelby and Sanders streets.

G & J Tire Co., 549 East Georgia street.

Syracuse Stages Many Exhibits at First Show

Under the experienced management of Dai H. Lewis, secretary of the Automobile Club of Buffalo, the first automobile show to be held in Syracuse, N. Y., opened in the State armory yesterday (Wednesday) to continue to the end of the week. Contrary to the customary conditions attendant upon the holding of maiden local shows, the entire amount of space available in this instance was oversubscribed in advance, as has been the case this season with practically all the established local shows, so that with the opening, the exhibition was as complete as its space limitations would permit. Indeed, so successful have been the efforts of the Syracuse Automobile Dealers Association, that the products of something like 30 different factories are represented, while the actual number of machines on view numbers close to a hundred. Besides, there are the accessory exhibitors who have flocked to the show standard in characteristic numbers, bringing their own peculiar glow of enthusiasm and optimism to the show.

Pride of place naturally goes to local enterprise in the Franklin exhibit, which is one of the most extensive as well as one of the most patronized of the various booths. Although this is Syracuse's first full-fledged

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show, in the sense of an exposition of the products of a considerable number of makers, the entering wedge was driven last year, when the H. H. Franklin Mfg. Co. instituted a show of its own, failing to arouse sufficient interest to secure a more general display. Thus in a sense, this is the second instead of the first, local show in that vicinity.

The program of the show, though limited necessarily to four days, yet partakes of the usual gala element in the consecration of each of the days to special groups of visitors. Thus, Wednesday was "Administration and Manufacturers' Day," today figures as "Mystique Krewe Day," tomorrow will be "Society Day," and Saturday "'Varsity Day."

Louisville Now Plans Eight Shows.

With a true spirit of perseverance that augurs well for the success of the event, the Louisville (Ky.) automobile dealers are going ahead with their plans for the automobile show, which is to be held April 15, 16 and 17, despite an unforseen setback. Fire recently destroyed the Coliseum where the exhibition was to have been held, and it seemed that the lack of a suitable hall would prevent the holding of the show. This apparently insurmountable difficulty was met by an agreement that each dealer should decorate his show rooms in a manner similar to what was contemplated at his space in the Coliseum. Eight dealers have acquiesced in the proposal, so that Louisville will have eight shows instead of one. Automobiles will be furnished to carry the visitors around to the different garages, and admission will be free to all exhibits.

Show for Motorists and Horsemen.

Contrary to the usual procedure at automobile shows, when the motor car is the center of attraction, the horse will share the honors with its rival at the coming exhibition of equines and motor cars at Newcastle, Ind., April 1st, 2d and 3d. Lovers of the horse have combined forces with the devotees of the power wagon, to promote a show, and from the enthusiasm which is being manifested, the amalgamation of the interests concerned will militate greatly for the success of the exhibition. Many horse owners who otherwise would not be attracted by an automobile show, will take in the exhibition and offer a fruitful field for the automobile dealer.

Atlanta Plans Show for Autumn.

Considerable agitation in Atlanta, Ga., for the holding of an automobile show has resulted in a resolution to defer the project and endeavor to secure an early fall dating, as soon after November 1st as is possible, in fact. Action has been taken in the matter by a joint committee of the Fulton County Automobile Club and the newly organized Atlanta Automobile Trade Association, which has named a conference committee consisting of President E. W. Gans, of the dealers' association; Ed. H. Inman, J. J. Cohen, Clark Howell, G. W. Hanson, J. H. Nunnally and Charles I. Ryan, to arrange with the associations of automobile and accessory manufacturers in New York City for a suitable date and a sanction.

Hartford Show Yields a Dividend.

Emulating the New York example, the Hartford Automobile Dealers Association has declared a dividend to the exhibitors at the recent Hartford automobile show. The report of the show committee discloses gross receipts of $6,008.04, and disbursements amounting to $4,420.14, leaving a balance of $1,588.26. As a result a return of 39⅞ per cent. was awarded the dealers and one of 36.43 per cent. to the exhibitors of accessories. Last year a 92 per cent. dividend was declared, but the show this year was more elaborate.

Logansport Fixes Dates for Show.

Inspired by the successful promotion of automobile shows in other cities, Logansport, Ind. proposes to enter the rapidly expanding show circuit. The Logansport Automobile and Motorcycle Dealers Association is back of the project, and April 1, 2 and 3 have been selected as the dates for the event, and the Broadway garage is the location chosen. A goodly share of the leading cars and motorcycles will be shown and all available space has been taken.

Germany's Imports and Exports.

Foreign cars and parts to the value of $3,275,750 were passed through the German customs last year as against $4,458,750 in 1907. To offset this the Fatherland sold to other countries cars and parts valued at $3,406,250 in 1908, an increase of $125,000 over the preceding twelvemonth.

Taunton to Have Taximeter Cabs.

The Taunton Taxicab Co. has been formed in Taunton, Mass., with headquarters at Carlow's garage. Five machines will be bought to start, and the equipment will be increased as fast as increasing patronage seems to warrant.

Taximeter Cabs Popular in Germany.

In the land of the Kaiser taximeter cabs are rapidly winning their way into popular favor. Berlin now has over 2,000 of the "scooters" and other cities in the empire are fast adding to their quota.

Cab Service Planned for Indianapolis.

Charles W. Sheets & Son are arranging to operate a taximeter cab system in Indianapolis, Ind. The headquarters of the enterprise will be at 1015 North Capitol avenue.

Tensile Strength of Vanadium Steel.

"The gain in toughness and strength of steel, due to the introduction into the construction of a small percentage of vanadium, is shown in some recent comparative tests of a carbon steel frame of 78,000 pounds tensile strength and 46,000 pounds elastic limit, and a frame of similar section with vanadium added to the steel composition," says the Scientific American. "The vanadium steel frame section, carried on supports four feet apart, stood twenty blows of a 5,000 pound weight falling from a height of 18 feet, before fracture took place. The carbon steel frame section was deflected 5½ inches by the first blow and broke on the second. In the whole series of tests the vanadium steel showed about 15 per cent. higher tensile strength and 25 per cent. greater elastic limit than the carbon steel."

America's Share in Australian Trade.

According to a customs report recently issued, 3,559 motor vehicles were imported into Australia from 1901 to 1907. Of this total 1,175 went to New South Wales, 1,436 to Victoria, 132 to Queensland, 496 to South Australia, 224 to Western Australia, and 96 to Tasmania. The total import value of these vehicles was $3,392,125, and the duty paid on them amounted to $701,105.

Of the total number of automobiles imported during the years stated, no less than 398 were imported from the United States. In the year 1903 the United States sent to Australia 71 automobiles, valued at $35,262; in 1904, 161, valued at $75,586; in 1905, 122, valued at $63,799; and in 1906, 44, valued at $37,841. The figures for 1907 are not yet complete, nor is it possible to get the figures for the first three quarters of 1908.

Motorcycles imported during the nine months ended September 30, 1908, were valued at $59,361, the duty being $16.881. Bodies for automobiles, motor trucks, and wagons, valued at $135,011, were imported during the same period, the duty amounting to $45,954. There were further imported during the nine months under review chassis for automobiles, motor trucks, and wagons of a total value of $933,394, and the duty upon these amounted to $22,439.

Making Belgium Roads Fast and Safe.

Considerable attention is being given to the improvement of the roads by the government in Belgium. In the future the line of new roads will be laid out to secure a radii of 328 feet as a minimum for country roads. This minimum will be reduced to conform to local conditions, where the road passes through cities and towns. The roads will avoid grade crossings and swinging drawbridges, and be so planned as to open up branch avenues of travel at their juncture with the trunk lines. Where conditions are such as to be misleading to tourists regarding the direction to be taken, the by-roads will be concealed by the arrangement of trees, or special forms of construction marked with legible signs. Of ample width, with easy grades, and conducive to high speeds, and so built as to withstand heavy traffic, they will have feeders to take care of local traffic in small centers.

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NON-STOP TESTS WITH VARIATIONS

Air Cooled Motor Runs 60 Hours with Car Standing Still—Two Thousand Miles Run on City Streets.

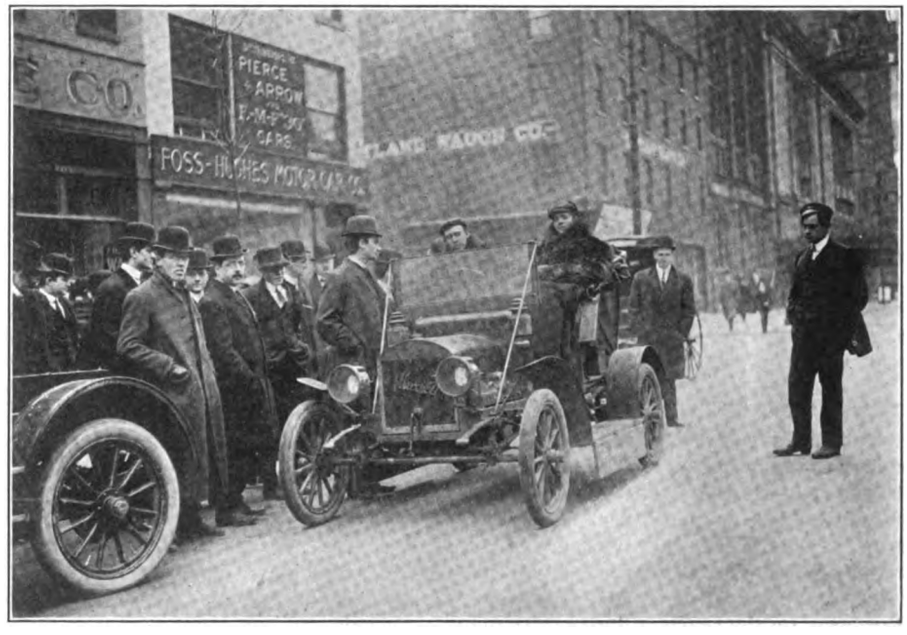
With the approach of the open touring season the popularity of the manufacturers' and dealers' demonstration is waxing strong, particularly where in the guise of endurance run or contest it may serve to call to the attention of a great number of people the peculiar merits of the cars under trial. Just here is revealed something of the progress which has been made in car building during the past few years. Where only a short time ago, relatively speaking, public demonstrations for the most part were confined to runs between well known points, sometimes for speed and sometimes for endurance purposes, now they are largely devoted to tests of endurance placed on a mileage or time basis, and therefore possessing quite as much general as local interest. Furthermore, the advertising art is being brought to bear with increasing consistency upon these efforts at publicity with most successful results.



FRANKLIN IN 60-HOUR NON-STOP MOTOR TEST

Thus, for example, the people of Kansas City were treated to the sight of a diminutive colored lad seated astride the bonnet of a Franklin car standing in front of the local agency the other day. Swathed in a heavy blanket and beaming in indolence and comfort he was banked by various signs which indicated that a 60-hour non-stop test of the motor was in progress. Because of the old-time superstition as to the unreliability of air-cooled engines in general, and because of the popular belief that they always "run hot" when they run at all, a placard in front of the lad—which also explained his presence in that unusual position—read: "T'aint hot! 'f t'was, Id move."

The test, which was applied to a 28 horsepower stock car, was carried out in front of the headquarters of the Franklin Motor Car Co., at 1108 East Fifteenth street. It began Monday morning and did not end until Wednesday night; during which time only 1½ gallons of oil and 28 gallons of gasolene were used, although the motor was run at a good rate from start to finish.



MAXWELL, JR., ON COMPLETION OF 2,000 MILES NON-STOP RUN

A sixty-mile as well as a sixty-hour test was made to round out the demonstration. In running the sixty miles the car carried five people about Kansas City, the run being made in eleven hours at the rate of 5 5-11 miles an hour. The entire course was covered on the low speed, which is geared at 12 to 1. Had the run been made on the high speed with the engine making the same number of turns, the distance covered would have been 225 miles, as was carefully explained to the spectators. The low gear trial was adopted, naturally, as being a better test of the cool running properties of the motor.

Philadelphia last week was the scene of a hardly less ambitious endurance test of the demonstration variety, when a Maxwell Junior car was made to do a 2,000 miles non-stop run up and down Broad street. Running in city traffic is a hard test for any vehicle, but no one can begin to appreciate the strain which is thrown upon both the car and its driver who has not attempted to complete not merely one or two brief down-town or cross-town runs, but a long distance under non-stop conditions. Notwithstanding the rigorous nature of the test, however, the machine survived and was sent over the road to Pittsburg, where the trial ended, without the necessity of a single motor stop. But even this test appears not to have been severe enough to suit the tastes of this particular maker, as is shown by the fact that in another locality another non-stop performance is being carried forward.

Ten thousand miles without stopping the engine is the stupendous task allotted to a Maxwell car by the Boston agency, to prove its utility, this being an instance of another type of modern and popular demonstration. On Thursday last, a four cylinder 30 horsepower car left the headquarters of the Bay State Automobile Association with Lucius Tyler at the wheel, and Adam Schneider as observer, in an attempt to do the 100 century non-engine stop run. L. R. Speare, the newly elected executive head of the A. A. A., started the engine on its long

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run, the ceremony attracting the usual audience of passing pedestrians.

The car will be kept going night and day until the completion of the 10,000 miles which is expected to take three weeks. Drivers and observers will be changed every eight hours to relieve the monotony of the grind, and the constant strain of keeping the engine running. No attempt at high speed will be made, as the main object sought is to keep the engine running for the allotted distance, and fast driving might lead to accidents which would cause all preparations to go for naught. For the first week the car will be driven to Worcester and return. The second week the course will be changed to Providence and back, while the final week will be spent on the Boston and Newburyport route. The car will be checked at both ends of the course on each leg of its journey. Up to noon Wednesday the distance traveled by the car was 2,606 miles, as shown by the cards of the official observers, and the distance had been accomplished without adjustment or trouble of any sort, and, of course, without a single stop.

Adjusting Pressure in the Tires.

Once the average owner has been educated up to the point of appreciating the necessity of maintaining a uniform degree of inflation in his tires, the question naturally arises as to whether the same pressures should be employed in hot as in cold weather. To this, a well-known tire expert replies that they should, notwithstanding the differences in atmospheric temperature. On this account, however, the rise in pressure due to friction caused by the kneading of the walls will be much greater in summer than in winter, so that some method of equalization is necessary. To this end, it is suggested that in warm weather tires which have been newly inflated be gone over after having been run long enough for normal conditions to become established, and the pressures tested by means of a suitable gauge. If the pressure in any tube is found to be higher than the normal amount recommended by the maker of that particular tire, it may be relieved by letting off a portion of the air.

Card for the Atlanta Hill Climb.

Atlanta, Ga., is fairly bristling with excitement these days, for on Saturday next, 27th inst., the Fulton County Automobile Club will hold its annual hill climbing contest up Stewart avenue hill. Because of the proximity of Daytona, it is expected that several of the crack speed merchants who will perform on the beach will go to Atlanta, Barney Oldfield, Lewis Strang, and Charles Burman already having entered cars. Seven events are carded, as follows: For touring cars of runabouts costing $900 or less, touring cars or runabouts costing $1,500 or less; touring cars or runabouts costing $5,000 or less, runabouts costing $5,000 or less, and free-for-all stripped cars.

PUSHING CHICAGO CARNIVAL PLANS

Local Club Takes Steps to Avoid Friction with A. A. A.—New Dates Fixed for Middle of June.

A slight misconception of the newly assumed function of the American Automobile Association in its complete domination of racing control has caused a temporary halt in the plans of the Chicago Automobile Club, which has been so eagerly fostering the scheme of a national stock car race to take place in the latter part of May. Despite the fact that the club through its active committees was doing all the work of developing the race, and that the preparations had been advanced even to the point of practically settling upon the date, the course and the nature of the race, the prospect that at the last moment the A. A. A. would step in and assume full control of affairs, even to the appointment of officers and the dictation of the rules for the contest, served to bring about an abrupt alteration in the status of the event. Although the proffer of the Cobe trophy by President Ira M. Cobe, of the Chicago Club, had been accepted by the executive committee of the A. A. A. upon the basis of its being held for national competition, the resentment of the Chicago club members was so strong that they immediately determined to make the event a local one, clipping off the term national and changing the date.

Despite this change in its status, however, the affairs of the race or speed carnival as it is called, are progressing favorably. It is now slated to occur on June 18 and 19, instead of May 29 and 31, as at first planned, and as a western event, it will be run entirely under the management of the Chicago club. The rules which are being formulated by the A. A. A. contest board under the direction of the Manufacturers' Contest Association will be recognized, and the program will consist of a light car race to be run on the first day in all probability, while the entire second day will be required for the contest of 250 miles or thereabouts for the Cobe trophy. Practically the only difficulty now remaining is the securing of a militia guard for the policing of the course, and this being assured, it is practically certain, it is said, that the A. A. A. will not delay in granting a sanction under the new terms.

That all was not going smoothly with the plans for the race as they originally stood, is revealed by the intimation that the eligibility rule made it necessary for the entry of a stock car, that at least 25 duplicate machines should have been produced by the same maker. This, as precluding the possibility of trying out 1,910 cars in the contest, put something of a damper on the enthusiasm of the promotors. The proposed engine limitations also were criticized, it is said. Furthermore, it was feared that the weather would not have become sufficiently settled by the end of May for the course to be put into the best shape, while the delay in formulating the rules was threatening embarrassment to the potential entrants who, presumably required more than a few days of preparation for as ambitious an event as originally had been planned.

As matters now stand, the race seems likely to be run about as originally planned, save that its management will be more to the liking of the contest committee of the club than would have been the case had the A. A. A. been allowed to step into the position of command. Makers, it is thought, will be likely to take just as much interest in the event under its new guise as would have been the case had it remained national in name, particularly as so much interest just now is centered in the western market. Altogether, the matter appears to have been adjusted without serious friction on either side.

Wilkes-Barre Planning Large for Its Meet.

That the Wilkes-Barre (Pa.) Automobile Club intends to make this year's hill climb up Giant's Despair mountain of more importance than any of its predecessors, is evident from the early preparations that are being made in anticipation of it. As usual the slimb will take place on Decoration Day, May 30th, on the now famous course which runs up the south side of Giant's Despair—which prior to the first hill climbing contest held upon it was locally known as Wilkes-Barre Mountain.

The nature of the course and the splendid arrangements that always have marked the annual event leads not only members of the Wilkes-Barre club, but many others, to believe that it is one of the ideal courses, if not the very best roadway in America for such a contest.

The club already has begun the preliminary work for the climb which they hope to make an event of national importance. It is hoped to induce the various clubs throughout the East to promote club runs or endurance contests to finish in Wilkes-Barre the day before the hill climb, and several public spirited citizens of the Diamond City already have intimated that if the plan is put into effect trophies will not be lacking. The committee expects that runs will be made from New York, Buffalo, Pittsburg, Philadelphia, Baltimore and other cities.

Plans 10,000 Miles Run on Track.

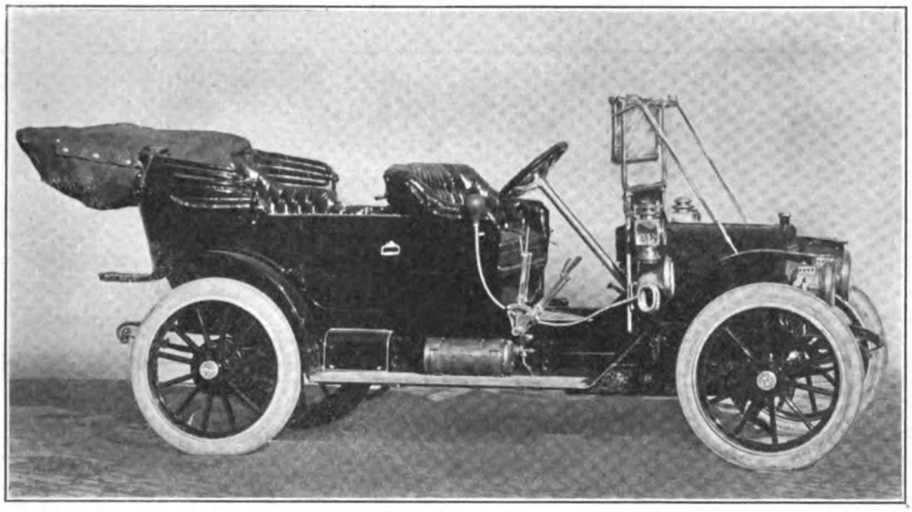
Among the "stunts" being planned for the new motor track at Indianapolis, Ind., when it is completed, is an effort to make 1,000 miles per day for ten consecutive days. The car which will attempt the feat will be a National, the makers of which, the National Motor Vehicle Co., of Indianapolis, have had no little success in similar record making attempts in the past.

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FEATURES OF THE HERRESHOFF

Its Neatness, Compact Construction and Large Capacity—Thoroughness Shown in the Specifications.

One of the new cars to receive marked attention in connection with the recent Boston show, quite as much because of its neat and condensed construction as because of its novelty, was the Herreshoff—a machine

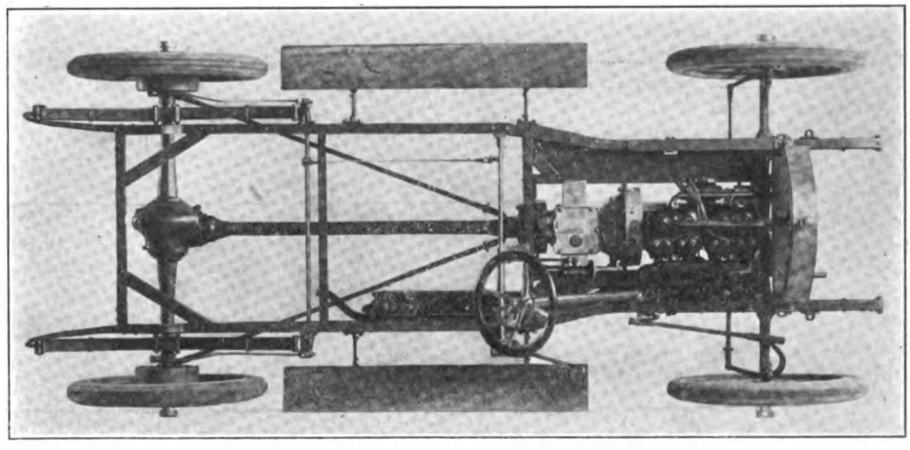


HERRESHOFF 24 H.P. TOURING MODEL

which has been looked forward to with considerable curiosity since the first announcement of its advent, made exclusively by Motor World some months since, and which is made by the Herreshoff Motor Co., Detroit, Mich. Nor did its appearance in any way prove a disappointment to those who had anticipated an attractive offering as well as a practical one at the hands of its designer and builder. Light and compact appearing, if anything, small for its rated capacity and power, it was seen that the term "light cob" which had been applied to it was far from a misnomer, as it is intended to fulfill just the purpose in the private garage which the peculiarly sturdy and efficient horse of that class fulfills in the equine establishment.

Further details of the machine which were not available during the rush of show week, bear out early impressions as to the thorough going manner in which its specifications have been chosen and worked out. By dint of much close figuring a far greater ratio of passenger carrying space to bulk of power plant has been secured than commonly is found in large cars, while the external lines are perfectly in accord with current practice save that they are worked out with an eye to compacting the mechanism as far as possible. The unit power plant, for example, though containing all the elements found in many cars of much larger size, is made to occupy only the limited amount of space encompassed by the very short bonnet and the reach directly back of the dash and under the floor boards. In fact, the cross frame member which supports the forward end of the torque tube and serves as the midriff of the chassis, is placed at somewhere about two-fifths of the distance between the radiator and the rear axle instead of back of the center, as is commonly the case.

By this means the rear of the chassis is kept perfectly clear of mechanism, while the forward portion, which is narrowed down, and suitably reinforced, is made to withstand practically all the torsional stresses which result from the application of the power to the driving group. As a matter of course, the axle group in the rear is suitably braced by means of long strut rods which run forward from the axle ends to the articulation of the torque tube with the frame, the axle itself being afforded a floating attachment to the frame by means of the shackling system adopted.



HERRESHOFF CHASSIS, VIEWED FROM ABOVE

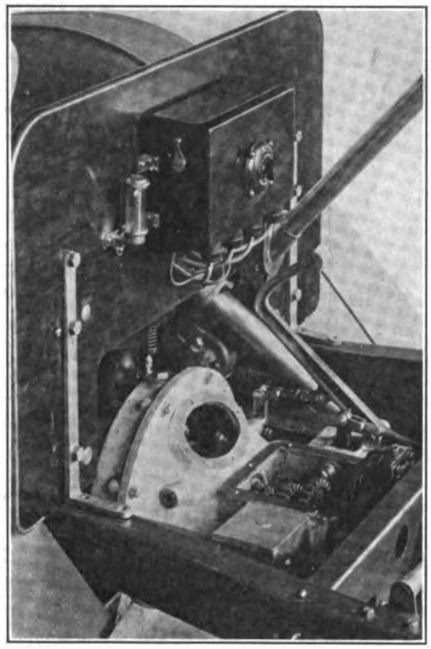
The motor is of the quadruple, vertical type, employing thermo-syphon cooling circulation, double ignition with accumulators and Bosch magneto, rated at 24 horsepower nominal output, and measuring 3⅜ by 3¼ inches, bore and stroke. Together with the gear box, which is encased in an integral housing, it is mounted on a short subframe. The valves are offset from the cylinders, mounted side by side on the right side of the motor, and actuated conveniently from a single cam shaft. The two sets of spark plugs are carried over the valve pockets, while the carburetter and piping manifolds being located on this side as well, ample space is left on the other side for the mounting of the magneto and the single vertical pillar, which is used for the mounting of the timer for the jump spark battery system, and for the lubricating pump drive. Engine oiling is accomplished by means of a constant flow system, circulation for which is maintained by means of the pump from a sump in the lower part of the engine base, through a single sight-feed glass, and to the various shaft bearings. Annular ball bearings of the F. & S. type are employed for both crank and cam shafts.

The change gear group which, as already mentioned, is carried in a housing held solidly with the engine base by means of a series of bolts which secure the fly wheel casing to the end of the gear box, is of the progressive type, affording three forward speeds with the reverse, the top speed being through a direct drive through to the propeller shaft. A heavy service brake is mounted on the drive shaft back of the gear box and just in front of the universal joint, and is actuated by an arm extending from the single pedal lever. This pedal, it should be observed, is so inter-connected with the multiple disc clutch, as to release that member upon a slight depression, applying the brake when brought to the limit of its travel. This, with the foot accelerator completes the control arrangements on the foot board.

The rear axle, which is of the floating type, is Timken mounted, as also is the front axle. The wheels are 32 inches in diameter, shod with 3½ inch quick detachable tires, and the wheel base is 100 inches. The frame is of pressed steel, with long spring horns in the rear, a peculiarity of its formation being the very short radius of the offset which is used to secure ample

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clearance for the rear axle, and which is unusual in that the offset is completely filled with a rubber buffer. The spring suspension is of the semi-elliptic order, front and rear, the front members which are 34 inches in length being in marked contrast to the rear ones which are no less than 52 inches long The car is produced in both runabout and touring types, as well as lan-



HERRESHOFF TRANSMISSION MOUNTING

daulette and coupe, in the former instance, the fuel storage being in a rear-mounted tank with pressure feed, while in the touring types the tank is carried under the front seat from which the feed is by gravity. In either pattern of body mounting, the control mechanism is placed on the right side of the car, spark and throttle control being located on the top of the steering column, though the throttle is interconnected with the foot accelerator already mentioned, while the magneto is made to run with a fixed point of ignition, so that the spark lever applies only to the battery and coil system which is a stock feature of the machine. As is customary, the gear striking lever is mounted at the end of the foot board, while outside it is the emergency brake lever, which applies the internal expanding brakes on the rear wheels. The complete weight of the machine is given as 1,575 pounds for the touring car, or 1,495 for the runabout.

Advantage of a Petcock in Drain Pipe.

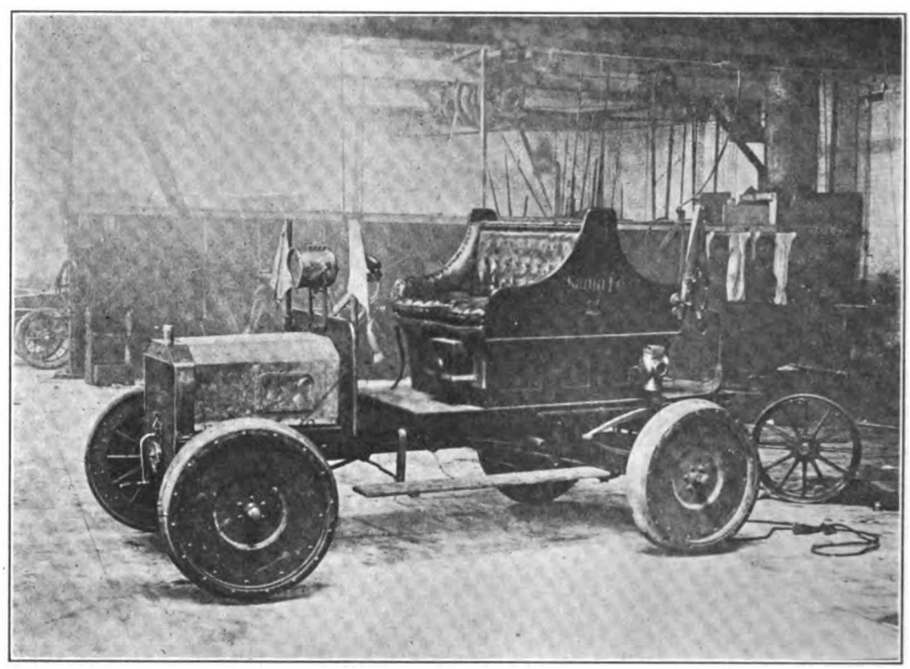
If the water in the cooler is to be drawn off, it is well to have more than one pail handy if there is no shutoff on the drain pipe, as it is no easy matter to put the plug back when there is a pressure of water in the pipe. When no petcock is fitted the convenience which one affords should be an incentive to procure its attachment.

ADAPTING MOTOR CAR TO RAILS

How a Ford Runabout has Been Transformed for Railway Inspection Service —Its Satisfactory Performance.

While motor cars have been used to perform unusual tasks of all sorts outside of their regular field and have unfailingly made good, it is in the development of the self-propelled vehicle for railway inspection work that it finds a particularly fitting application. Many specially built machines have been employed in this field, but comparatively few, which are transformed touring cars or runabouts.

The car shown in the accompanying illustration, which is of the latter and therefore unusual order, is a Ford runabout which was fitted with flanged steel wheels and used in the service of the Santa Fe system, for



FORD RUNABOUT TRANSFORMED FOR RAILWAY INSPECTION

track inspection, trouble wagon and general utility work, and has covered 40,000 miles. By its ability to attain much higher speed, and the wide radius of trackage which it can cover in a limited time, it has demonstrated the great superiority of the mechanically propelled over the hand propelled type of car for this class of work.

The transformation process necessary to fit the machine for railway work, it will be observed, was neither a serious nor troublesome undertaking. In addition to the substitution of the flanged wheels for the regular equipment of the automobile, the front axle was stiffened by the elimination of the knuckles, the body was supplanted by one having dos-a-dos seats, and new running boards were installed. These, with the removal of the steering column and a slight rearrangement of the control mechanism, proved all the alteration which was necessary.

Readjustment of Lubricating Scoops.

One system of engine lubrication which is rather common involves the use of scoops made of thin metal and attached to the "big ends" of the connecting rods in such a way that at each down stroke a small amount of oil will be picked up from the oil well and thrown up against the under side of the journal. In arrangements of this sort it is evident that the amount of oil which reaches the bearings must depend upon the depth to which the scoops sink in the oil wells—supposing the latter to be fed uniformly and the level in them properly preserved. If one of the scoops happens to be improperly adjusted or is bent up ever so slightly, as may result from careless handling in overhauling, for example, the result will be a corresponding starvation of the bearing which it is supposed to feed. On this account great care should be taken in repairing machines in which this method is employed, in order that the proper distribution of the oil be not affected.

Compound to Remove Carbon Deposit.

Innumerable compounds for removing carbon deposits from the cylinders and pistons have from time to time been invented, each claiming to possess qualities superior to any other. However, several owners who have tried the following method unite in saying that it gives excellent results. Here it is: Put an ounce of baking soda into each cylinder, then add one-fourth of a pint of kerosene and turn the engine over a few times to thoroughly soften the deposit.

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WHAT A BIG FACTORY CONSUMES

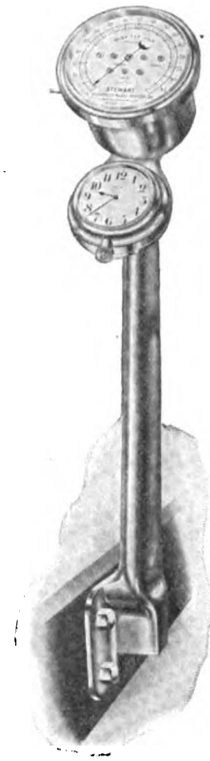
The Great Quantities of Raw Material Required for a Season's Output—Amazing Array of Figures.

Just how much raw material is involved in the production of a season's output of motor cars is beyond the appreciation of the average owner, even were he able to figure the actual amounts involved in the assemblage of the finished product. Some idea of the stupendous nature of the undertaking of building cars in large lots, however, may be gained from the following figures which are vouched for by the official statistician of the Maxwell-Briscoe Motor Co. In preparing for the production of 12,000 Maxwell cars, bids are being solicited on materials, as follows: Aluminum castings, 200 tons; brass castings, 150 tons; babbit metal for bearings, 50 tons; brass tubing, 126,000 feet, or approximately 25 miles. The rivets used in building this lot of cars will weigh something over 30 tons, while for materials other than metal, bids are required on 13,000 hides to be used for upholstering and trimming, and material for top coverings, to the extent of 40,000 yards. Steel in bar stock will be required to the extent of 1,000 tons, and malleable castings, 800 tons. Of the special metals, there will be used no less than 50 tons of chrome nickel, and 50 tons of nickel steel.

Speedometer on Independent Standard.

Mounting the speedometer on a separate standard of its own at the side of the car instead of on the dash is the idea disclosed in the new Model 14 Stewart which is being offered by the Stewart and Clarke Mfg. Co., of Chicago, Ill. The standard or bracket that is used has a steel core inside by which the drive is communicated to the speed indicating mechanism. The core has a bevel gear connection with the flexible shaft at the bottom of the standard. The arrangement eliminates the necessity of sharp bends in the shaft, since the latter is called upon for no other service than from the front wheel of the car to the bottom of the standard.

As shown by the accompanying illustration, the device fastens to the outside of the car frame, usually at a point forward of where the gear change levers are located, so that the readings will be convenient to the driver's eye no matter how fast the machine is going. A Stewart speedometer Model 11, of the 60-mile, multipolar type, is used for the speed and distance readings while the time is supplied by an eight-day automobile watch. Complete with the brass finished standard and all necessary shaft and gearing, the combination sells for $75 at retail. Further new combinations which the company has brought out include Model 15, a combination of speedometer Model 12, centrifugal type, and an eight-day watch, the latter mounted on top of the speedometer, price $25; Model 16, a combination of multipolar speedometer Model 11, having diamond bearings and a 90-mile scale, with



NEW MODEL STEWART SPEEDOMETER

an eight-day watch, price $90; and Model 17, a combination of the 90-mile multipolar Model 11, with a Chelsea clock and electric light, price $125.

Muffler of a Multiple Unit Type.

What might be described as "multiple unit" construction is employed in the new Powell pressed steel mufflers for 1910, made by the Powell Muffler & Timer Co., Inc., of Utica, N. Y. As many units as are necessary can be assembled into one muffler, to suit the requirements of the particular motor to which it is applied. To provide the greatest range necessary, however, the mufflers are supplied in two diameter sizes, the smaller being 5 inches and the larger 6¾ inches. The small mufflers are made of 20 gauge and the large size of 16 gauge steel.

From the photographic reproduction herewith it will be seen that the alternate discs composing the units form both the baffle plates and the outside casing. It has been the aim of the manufacturers to have the opening through the muffler as large or larger than the exhaust pipe from the motor, to eliminate back pressure and at the same time have effective suppression of the noise. As is also shown, protection from the heat is provided for the tie rods. The two main features of difference that are claimed are that it can be easily cleaned and that the total area of the baffle plates may be changed to correspond with the motor on which the device is used. By removing the end bolts on the tie rods, the muffler is readily separable either for cleaning or for alterations in the number of baffle plate units.

Night School for the Remy Forces.

In order that new acquisitions to the office and factory forces may quickly become familiar with the systems in vogue with the least possible derangement of the regular routine, the Remy Electric Co., of Anderson, Ind., have established a night school for their instruction. The classes are held two nights a week and are well attended by the employes, who have exhibited much enthusiasm at the innovation, which is the first known instance of the adoption of an educational campaign of this sort by an ignition appliance factory.

At present the topics under discussion are of a mechanical nature and comprise the motor ignition systems in general and covering both American and foreign practice. These instructions are being conducted by the chief engineer and his assistant. When the mechanical end has been well covered the classes will be turned over to the sales manager and his assistants for a thorough schooling in the selling branch of the business. In the opinion of the executive head of the company this policy of co-operation between the employes and manufacturer is bound to be productive of greater loyalty and efficiency on the part of the men and contribute largely to the success of the enterprise.

New Quick Detachable Rim Announced.

Requiring but one set of reversible side rims for both clincher and quick detachable tires, a new quick detachable rim is to be brought out by the Goodyear Tire & Rubber Co., of Akron, Ohio, for the 1910 season, according to an announcement which the company has just made. No complete description of the rim is as yet offered, but in design it is said to differ entirely from anything else on the market. A limited quantity will be supplied to manufacturers for testing purposes during the latter part of the 1909 season.



POWELL MUFFLER OF MULTIPLE UNIT CONSTRUCTION

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PLANS OF CONTEST ASSOCIATION

The Organization Reports Progress—Its Action Concerning the Cobe Trophy—Code of General Rules Drafted.

At the end of the first month of its existtience, the Manufacturers Contest Association has made the first public announcement of its plans for the oversight of the government of automobile sport, incidentally promising to submit shortly to the contest board of the American Automobile Association, through which its activities will be exercised, a series of classifications which shall govern all competitive tests during the season of 1909. Already, it has submitted to the contest board its findings in regard to the conduct of the contest for the Cobe Trophy, the stock chassis race which is to be held near Chicago some time in the latter part of May, and the complete rules for that event are consequently expected to be issued within a short time.

Hereafter, it is stated, the classification and rules committee of the M. C. A. will submit to the contest board its recommendations for classifications for all contests for the ensuing year not later than August 15th, in order that the contest board may have opportunity to get them into shape to be announced not later than the first of September in order that the manufacturers may be enabled to get their cars in shape before the commencement of the racing season.

These announcements were contained in a circular issued by the M. C. A. late last week and reciting the complete history of the association from the preliminary organization of a committee of seven representatives of manufacturers and importers at the culmination of a series of mass meetings held in New York, to the final organization and recognition of the association at the meeting held in Chicago on February 10th, and the ratification of the plan two days later. Following the election of officers and the appointment of an advisory board composed of representatives of the three associations of the American manufacturers and the Importers Salon, as told by the Motor World at the time, a rules committee consisting of representatives from 25 concerns was appointed.

The interests represented in this way are the following: Apperson, Buick, Chadwick, Chalmers-Detroit, Fiat, Ford, Isotta, Itala, Knox, Locomobile, Lozier, Maxwell, Mitchell, National, Panhard, Pennsylvania, Pierce, Premier, Rambler, Renault, Reo, Stearns, Stoddard-Dayton, Thomas, White.

From this list of 25, H. E. Coffin, chairman of the rules committee, selected a working committee of five in addition to the chairman, as follows: F. B. Stearns, The F. B. Stearns Co.; A. L. Riker, Locomobile Co. of America; Edgar Apperson, Apperson Bros. Automobile Co.; Paul Lacroix, Renault Freres Selling Branch; George A. Weidely, Premier Motor Mfg. Co.

The plan of action, which already has been put in force, conprehends the formation of recommendations for the rules by the working sub-committee, and the submission of its action to the committee of 25 for its approval. Following a thorough digest of the proposed measures by this committee, the final report will be submitted to the contest board of the A. A. A., for ratification by that body and subsequent adoption.

In accordance with this plan the recommendations for the conduct of the Cobe Cup race were referred to the contest board of the A. A. A. following a meeting of the rules committee of the M. C. A., held in New York on March 5th, while the preliminary draft proposed as a basis for the 1909 rules which shall govern all competitions in the United States, will be presented to the 25 members of the general rules committee within a few days. The Manufacturers Contest Association is now in process of incorporation, and it is announced that applications for membership, conditions of eligibility, etc., will be issued withn a short time.

The officers of the association, chosen at the Chicago meeting are: Benjamin Briscoe, Maxwell-Briscoe Motor Co., chairman; William E. Metzger, Everitt-Metzger-Flanders Co., secretary-treasurer; Russell A. Field, 1777 Broadway, New York, assistant secretary-treasurer; H. E. Coffin, Chalmers-Detroit Motor Co., chairman of the rules committee; advisory committee, representing the combined interests of the manufacturers' association upon the board; Messrs. E. P. Chalfant (A. L. A. M), Alfred Reeves (A. M. C. M. A.), E. R. Hollander (I. A. S.), and S. A. Miles (N. A. A. M.).

Lookout Mountain Date Changed.

Originally planned for this month, the three days race meet and hill climb on Lookout Mountain, which has been promoted under the auspices of the Automobile Club of Chattanooga, Tenn., has been redated and will occur sometime during the latter part of next month, the hill climb probably occurring on the 22d. Seven different classes will be arranged for stock machines, and great expectations are held as to the spectacular nature of the affair owing to the tortuous nature of the mountain course.

Forty Entries for Atlanta Climb.

When the entries closed last Saturday, 20th inst, 40 nominations had been received for the annual hill climb at Atlanta, Ga., on the 27th inst., under the auspices of the Fulton County Automobile Club. Seven events are on the program, with silver cups to the winner in each class. A preliminary event for motorcycles will whet the appetite of the spectators for the big events which are to follow.

DETROIT THE STARTING POINT

Official Announcement that Glidden Tour Will Begin at that City—Hotel Train to Accompany the Tourists.

Confirming a long series of pretty well authenticated rumors, the contest board of the American Automobile Association announced late last week that the forthcoming annual touring contest of the A. A. A. —otherwise the Glidden tour—will start from Detroit. Further details as to the route of the contest are still withheld, pending the completion of arrangements for the housing and care of the tourists, but it is pretty well understood that Chicago and Minneapolis will be counted as important stopping places in the western itinerary.

Coming after strong appeals had been made by a number of other cities, Detroit's application was carried through with cyclonic energy. Entry of fifteen local cars was promised at the outset, and this offer, conditioned on the acceptance of Detroit as a starting point was later clinched by the tendered deposit of $3,000 to cover the entrance fees of the cars, at $200 each, which was made by President George E. Lane, of the Detroit Automobile Dealers Association. In addition to this, arrangements already have been made to secure ample headquarters for the tour in the large dining room of the Hotel Pontchartrain, while public spirited citizens have combined to offer a cup for the miniature tonneau class, not as a challenge trophy, but as a permanent award for this particular tour. The latter offer is to be laid before the contest board at its meeting in New York during the first week in April.

A decorated automobile parade is another local feature promised in connection with the start of the tour.

While the details of the plans which are forming for the conduct of the tour are shrouded in considerable mystery, this much has been announced in addition to the starting point of the tour—that the bodily welfare of the tourists en route will be looked after a part of the time at least, not by local inn-keepers, but by the Pullman Hotel Co.—otherwise—the Pullman Palace Car Co. A special sleeping and eating train will follow the tour from siding to siding, as a railroad construction gang is followed from point to point by the living cars, and each night when away from the reach of central towns and cities the weary motorists will be safely stowed away in the snug comforts of their own little "uppers" and "lowers." Arrangements already have been made for the provision of sleeping and dining accommodations for 300 tourists, but the negotiations for hauling the train from point to point are being arranged by chairman Hower, who is now in Chicago.

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MOTORING IN SNOWY WASTES

Arctic Adventures Between Washington and Baltimore in March—Florida Tells How He Conquered the Drifts.

Being snow-bound in March is an adventure which few motorists would expect to encounter or care to experience. Yet just such an episode forestalled the plans of a number of wayfarers who had planned to return from the recent Taft inaugural in the same way in which they had gone to it—in their automobiles. One party only got through before the warm weather had largely effaced all traces of the unseasonable blizzard which so nearly had obliterated from the map the National Capitol on its greatest occasion. The sole survivor of a number of hardy adventurers who had essayed the northern trip with their machines was Jim Florida, Vanderbilt Cup contestant and otherwise veteran of a number of other conspicuous events, who with his Locomobile "30" touring car not simply attempted but achieved a rugged passage through to Baltimore.

As Florida himself tells the story, they left Washington at 10 o'clock Sunday morning with clear skies and air so balmy and warm as almost to make them regret having provided themselves with the equipment of shovels, axes and other pioneering outfit with which the car was laden. For the first few miles the pike road was in fair condition. Then upon a side road leading to Ashton, 15 miles away, the first real difficulties began to be encountered in drifts which were waist high. Says Florida:

"We opened up the road for about two miles, then we saw a driveway into a plowed field which the farmers had been using as a road for a distance of about two miles, the snow in the road at this place being up to our shoulders. To get into the field, we had to jump a big ditch about two feet wide and as deep. Our first attempt was a failure, as the rear wheels fell in up to the hubs. Our first use for fence rails came here; we used up over a dozen rails to raise it up and build a road under it, so as to get over the ditch and up the embankment into the field. We started through the field on low gear, until, when about half way from the road our car fell into a big hole, mud over the running boards- car laying on fly wheel, motor stuck fast and for the second time, some more digging and road building. The fence at this place was about 400 yards away and meant considerable walking through knee deep snow and mud to get some 20 rails. From the hot sun, the field became a sea of mud.

"Having spent three hours and gained only two lengths as we kept sinking more and more, we decided to give up the attempt of getting through the fields, and to get back to the road, seeing some 20 linemen who were putting up telegraph wires, we got them to give us a lift and turn the front of the car around towards the road, shoulder deep in the snow, which we had tried so hard to avoid. We headed for the road and had again to jump the ditch; being down hill the good little car hurdled it in great shape, the fly wheel sticking and stopping the motor. Here the car was covered in the snow, and we had to shovel tons of snow to get an opening. The shoveling was continued for about one and a half miles. Getting through this we were able to drive for a little way, when we went up against it again, here we had a choice of shoveling as far as we could see or shovel for about 50 yards to gain entrance to a field. We took the latter."

From this point on, the road appeared good, in the light of what had been encountered. But before long the difficulties of fallen poles and wires began to multiply. Highland was reached after dark, and undaunted, Florida and his crew started on with lanterns, determined to get as far as possible. Finally it came to the triple alternative of avoiding the roads for the bottomless fields, shoveling through three miles of snow on the highway, or as Florida puts it, moving "385 tons" of snow, or accepting the hospitality of a farmer over night. The latter was their choice, needless to say.

By morning the fields had frozen over sufficiently to sustain the weight of the car. But when the road was reached again, there was practically two miles to be shoveled before Clarksville was reached. Then only 24 miles of clear road remained to Baltimore. The first stretch required all of two hours; the second less than 50 minutes.



MOTORING FROM WASHINGTON TO BALTIMORE THE SUNDAY AFTER INAUGURATION DAY

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PATHFINDER BEGINS LONG JOURNEY

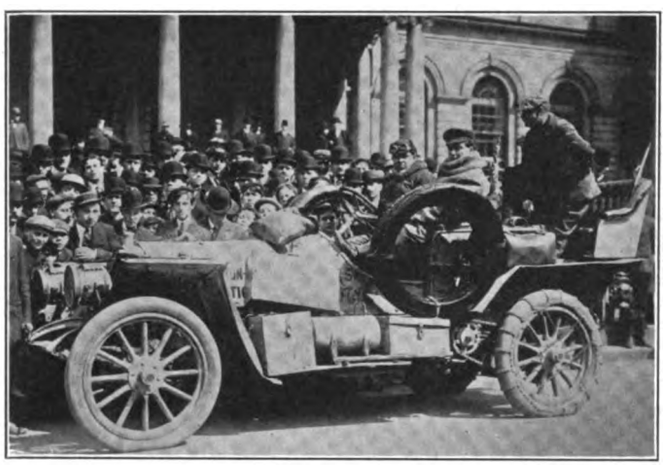
George Miller and His Thomas Car Get Official Send-Off from New York to Seattle—Making Good Progress.

A mild amount of interest has been aroused over the projected New York to Seattle tour of next June, by the incidents connected with the start from New York last Saturday, 20th inst., of the Thomas pathfinding car, and its reported progress from point to point since that time. The particular Thomas car selected for the difficult exploit of searching out in the early spring the roads which will be most feasible for the purposes of the tour in early midsummer, is said to be the identical machine, which a little more than a year ago performed the difficult feat of exploring a portion of the Alaskan territory merely as a side issue to its winning the race from New York to Paris. Certainly the extent of its equipment on Saturday gave the impression that both it and its crew must be prepared to face all the vicissitudes which the upcountry portions of any two continents might be expected to afford.

Carrying a letter from Mayor McClellan, of New York, to Mayor Miller, of Seattle, the pioneering expedition was officially despatched from City Hall in mid-afternoon. Prior to the start, George Miller, the driver, who acted as mechanic during the latter part of the New York to Paris race; C. W. Eaton, his mechanic; L. W. Redington, who will observe the road and route conditions during the trip, and J. S. M. Sley, representing the Thomas Co., were tendered an informal reception in the offices of the Mayor, his secretary doing the honors in the absence of His Honor himself. A secondary and hardly less impressive send-off was afforded the car and its crew on its way uptown when Robert Lee Morrell presented Miller with a flag which he charged him to carry across the continent in token of the interest of the Automobile Club of America in the trip and in the contest which is to be run under its official sanction. The second speeding ceremony took place before the A. C. A. club house.

The departure was witnessed by a kindly disposed crowd of not overwhelming proportions, while the car was accompanied on the early stages of its journey by a sizeable convoy of other cars, many of which bore the little "A. Y. P." banderoles, which are to be the standard of the tour. Later reports showed the car to be struggling with the snow-drifts in northern New York State, but making good progress, all things considered.

Efforts at booming the race on the western coast, particularly in the vicinity of Seattle have been productive of great enthusiasm. The purpose of the tour in advertising the Alaska-Yukon-Pacific exposition as well as serving as a competition for the Guggenheim trophy, has been warmly endorsed by local enthusiasts. Not only have the citizens of Seattle subscribed for a fund of $5,000 to provide the necessary cash prizes for the contestants, but preparations are being made for the erection of a building on the exposition grounds where the victorious cars will be exhibited during the remaining months of the expostion without charge to their owners. Supplementing this, it is stated that the cars are to be shipped back to the starting point free of charge to the contestants—a generous plan which should serve as an able inducement in stimulating entries.



START OF NEW YORK-SEATTLE PATHFINDER



MILLER PILOTING THOMAS UP BROADWAY

Narragansett Park to be Motordrome.

Having long passed into history as a scene for "horse trots," Narragansett Park, onetime among the most famous racing parks in the country, is about to be converted into an automobile race course, according to Fred E. Perkins, who has been identified with the ownership of the track for a number of years. As soon as weather permits, the work of reconstructing the old Providence course for its new purpose of automobile speed contests will be undertaken and carried forward as rapidly as possible.

PLANNING A CARNIVAL FOR LOWELL

Heinze Launches the Proposition and Local Merchants Respond—Nest Egg Laid for Necessary Funds.

Through the energetic efforts of J. O. Heinze, president of the Lowell Automobile Club, who was instrumental in bringing the Labor Day race of last fall to a climax, the city of Lowell, Mass., is again faced with the opportunity of taking to itself an increment of fame in the automobile world by the establishment of a carnival sometime during the coming fall. To this end, a meeting of local merchants was called early last week, and another on Friday, a preliminary subscription of $1,000 being raised as a nucleus for a sinking fund to carry out the plan. Last fall, considerable sums of money were spent in floating the road race, which, as it only lasted one day, did not afford opportunity for securing a proper return on the investment in highway repair, grandstand construction and so on, as Mr. Heinze, who provided a large amount of the enthusiasm for that undertaking now points out. By the institution of a carnival period of three days or a week, however, he now sees possibilities not only of entirely concelling whatever expenditure might be necessary to promote it, but of recouping local capital in some measure to make up for the deficit of last year. He is quite certain that Lowell business interests even outside the automobile business would be sure to profit largely as a result of the advertising which the city would obtain.

Another Race in Fairmount Park.

Permission has been granted by the Fairmount Park Commission for the holding of a stripped stock chassis race on October 7, over the same boulevard course in Philadelphia as was used during Founders' Week last fall. The Quaker City Motor Club, which is to promote the event, has announced the distance as 200 miles.

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College Course in Rubber Chemistry.

A departure from the usual curriculum in vogue in colleges and technical schools is announced by the faculty of Buchtel College, Akron, O., who at the opening of the new college year in September will put on a course in rubber chemistry. Such an innovation is particularly adapted to Akron, which is the home of several of the large tire plants and it is instituted in response to a demand for instruction in the treatment of rubber by employes of the tire factories. The course will extend over a period of two years and a preparatory training of the same length in the rudiments of chemistry will be required to be eligible.

The first year's program will consist of the analysis of samples of rubber in various stages, the study of various solvents of rubber and similar phases. In the final term a more comprehensive and intimate knowledge of the subject will be introduced. A new chemical laboratory is now in course of erection in which to carry on the work.

New Snap for the Snapshot Artist.

Itinerant photographers in New York City have found that newly arrived sailors and family groups in the tenement districts are not the only classes of custom to which they may look. It has been discovered that chauffeurs, waiting on the street with their cars, are not averse to being "snapped." Some of the motor car drivers claim that they have found such pictures of themselves very useful when hunting new jobs, the photographs giving evidence of the truth of their assertions as to what cars they have driven and also permitting the prospective employer to judge of the appearance and "form" of the driver when in service.

Bogus Tire Repairer in a New Game.

C. C. Smith, of the Jamaica Tire Repair Co., Jamaica, N. Y., would give a few dimes to lay hands on a man who is taking his name in vain; so also would a number of automobilists from whom the bogus Smith gathered tires which he failed to return. The much-wanted Smith is the perpetrator of a new but simple swindle that does credit to his misdirected ingenuity.

Representing himself as C. C. Smith, of the Jamaica Tire Repair Co., and presenting Smith's business cards, he called on a number of Brooklyn automobilists soliciting the repair of their tires. He quoted such attractive prices for the work that at least five doctors and one undertaker "succumbed" and permitted "Smith" to carry off one or more tires, to the Jamaica shop, as they supposed. That was the last the medicos and funeral director saw of their property. They never reached Jamaica.

The police are looking for the bogus Smith, who is believed to be a man who recently applied to the Jamaica concern for work and who helped himself to a supply of its visiting cards when he took his departure.

Wireless "C. Q. D." for Automobiles.

Passing automobiles that use high tension ignition with the vibrator system give off ethereal waves that influence some types of wireless telegraph apparatus, according to dabblers in the wireless science, and consequently puzzle the message receivers at times by the electrical disturbances they create. Built on this hypothesis, the proposal is advanced that motorists equip their spark coils with telegraph keys and learn sufficient of the code to flash "C Q D" signals in cases of distress.

Automobiles in Battle of Flowers.

An automobile section will be one of the features of the forthcoming Battle of the Flowers parade, which is to be held in San Antonio, Tex., on April 21st. Arrangements are in the hands of the San Antonio Automobile Club, which also is anxious to promote a race meet during the week.

Lonsdale Club's Annual Election.

The recent election of officers of the Lonsdale (Pa.) Automobile Club for the ensuing year resulted as follows: Dr. J. W. Bawman, president; H. S. Louder, vice-president; T. R. Bright, secretary, and Henry B. Freed, treasurer.

Fulton County Club Acquires Home.

After a diligent search on the part of the club house committee, in which many proffered sites were considered, the Fulton County (Ga.) Automobile Club has found itself a home, located 7½ miles from Atlanta on a spacious tract of land, accessible to all roads on the north side and commanding a picturesque view of the surroundings. The new club house for some years has been the country residence of a wealthy Atlantan and is considered one of the most beautiful homes in the vicinity. Being already equipped with electric lights, telephones and all modern conveniences, it is admirably adapted to the needs and pleasures of the club.

The Fulton County Automobile Club was organized last fall, and its already large membership is destined to be well augmented by the acquisition of the new house.

Cincinnati Club Nears the 500 Mark.

At the recent annual meeting of the Cincinnati (O.) Automobile Club the reports of the officers disclosed among other things that the organization now has 458 members on its rolls. The officers elected were: Dr. C. L. Bonifield, president; D. McKim Cooke, first vice-president; G. W. Drach, second vice-president; Dr. L. S. Colter, secretary; Harry L. Manss, treasurer; E. J. Carpenter, consulting engineer; board of governors, two year term, Dr. G. M. Allen, J. P. Orr, George W. Cleveland, W. M. Perin, Dr. A. B. Heyl; one year term, Louis J. Merkel, A. P. Streitman, E. A. Conklin, Val Duttenhofer, Jr., and Paul Verkamp.

Russian Police Will Scan Motorists.

Foiled for months in their attempts to locate the source of a great volume of revolutionary printed matter, the Russian police have at last solved the mystery by seizing an automobile which has for some time been piquing their curiosity. The machine, which has been flitting from one district to another, was stopped in Riga, and when it was searched, revealed a complete printing establishment for producing inflammatory literature.

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The Week's Patents.

904,163. **Indicator for Radiators.** Harry Vissering, Chicago, Ill. Filed April 29, 1907. Serial No. 370,951.

1. The combination with a water cooling radiator, of an indicator mounted thereon and comprising an upright tube communicating at its lower end with the top of the radiator and provided at its side with a window.

904,352. Pneumatic Spring. William C. McCullough, Bucyrus, Ohio. Filed Nov. 25, 1907. Serial No. 403,765.

1. In a device of the class described, the combination with a vehicle axle and vehicle spring, of plates carried by both, a flexible bag located between the plates, and inflexible reservoir tanks attached to the bag and supported by the springs.

904,358. Clutch. Carl T. Painter, Chattanooga, Tenn., assignor to Patten Manufacturing Company, Chattanooga, Tenn., a Corporation of Tennessee. Filed Nov. 16, 1907, Serial No. 402,563. Renewed Sept. 25, 1908. Serial No. 454,775.

1. A clutch comprising a divided ring, a lever pivotally supported by said ring, spring means acting against the lever at one side of its pivot, and means to directly engage said lever and shift the same in opposition to the spring means to expand the ring.

904,409. Pneumatic Tire. John L. Coesir, Joplin, Mo. Filed Jan. 30, 1908. Serial No. 413,481.

1. The combination with a wheel rim having inwardly extending annular clenchers, and a felly interposed between the clenchers; of a tube embracing the rim and clenchers, and having inturned edge portions insertible between the felly and the clenchers, an annually exposed non-inflatable circular wedge interposed between the felly and each edge portion of the tube, for binding said portion in engagement with the adjoining clenchers and constantly exposed means upon said wedge for expanding the same to secure the edge portions of the tube upon the clenchers.

904,413. Traction Wheel Drive. Jean B. Dumais, Chicago, Ill., assignor of one-half to Frank R. Crane, Chicago, Ill. Filed May 8, 1908. Serial No. 431,685.

1. In a traction drive for motor vehicles, a traction wheel provided with a housing having a circular rim portion in concentric relation to the axis of rotation of the wheel, a driving axle upon which the wheel is journaled, a sleeve mounted loosely upon the axle and formed with a circular flange, an annular clutch carried by said flange and formed with a peripheral gap, and an intermediate lever pivoted to said flange with its outer end engaging lever pivoted to said gap and its inner end in operative engagement with the axle, substantially as set forth.

904,434. **Oil Pump.** Russell Huff, Detroit, Mich., assignor to Packard Motor Car Company, Detroit, Mich., a Corporation of West Virginia. Filed March 23, 1907. Serial No. 364,142.

1. In an oil pump, the combination of a plunger having a longitudinal slot extending through its outer end, a sleeve adjustable on the plunger to vary the length of the slot therein, and means extending into said slot and adapted to reciprocate the plunger.

904,435. **Protector** and Non-Skidding Band for Pneumatic Tires of Wheels. Albert T. Hughes, London, England. Filed Oct. 18, 1907. Serial No. 398,070.

A tire protector consisting of a series of circumferentially arranged hinged tread elements adapted to grip the tire and each having each side thereof provided with a dovetailed recess, whereby the recess of each opposing pair of elements will constitute a dove-tailed socket, and resilient studs mounted in said socket and projecting from the outer faces of the tread elements.

904,508. Carburetter. William M. Carlin, Indianapolis, Ind. Filed Feb. 19, 1908. Serial No. 416,701.

1. In a carburetter, the combination with a hollow cylinder having its top end closed and its bottom enlarged end open, an air inlet valve situated over said enlarged open bottom end, a mechanism connecting said valve and the steering shaft of the vehicle whereby the valve closure is effected to control the vacuum in said cylinder, and an outlet situated near said top closed end, of said cylinder of a fluid duct situated intermediate the ends of said cylinder, and having an inlet end situated exteriorly of said cylinder, a needle valve sleeve guide extending vertically from said duct and situated centrally of the interior of said cylinder, said guide having a fluid fuel outlet, a valve seat situated at the bottom of the bore of said guide sleeve and a needle valve spindle fitted into said guide sleeve to slide along longitudinally therein, a needle valve on the end of said spindle coacting with said seat, and a disc situated at the top portion of said spindle and connected thereto, said disc of smaller diameter than the interior diameter of said cylinder.

904,570. Supplemental Wheel for Motor Cars. Milton D. Stocking, Lindenwood, Ill. Filed Feb. 3, 1908. Serial No. 414,107.

1. A supplemental wheel for motor cars adapted to have an engagement with the hub of one of the main wheels of a car and connected to the main wheel by devices having screw-threaded shanks, and a crank for each shank and having an end with a screw threaded opening.

904,659. Carburetter. Edmund J. Thompson, Ottawa, Ontario, Canada, assignor, by direct and mesne assignments, of one-fourth to Berton Herbert Sills and one-fourth to Russell Sutherland Smart, Ottawa, Canada. Filed Feb 6. 1908. Serial No. 414,663.

1. In a carburetter, and in combination a spray nozzle, a rotatable member controling the passage of combustible therethrough, a movable air controlling member actuated automatically by the suction of the engine and means operated by the movement of the air controlling member for rotating the said controlling member.

904,723. Automobile Transmission Mechanism. Milton O. Reeves, Columbus, Ind., a Corporation of Indiana. Filed Oct. 19, 1907. Serial No. 398,234.

1. A driving train comprising two shafts, a pair of driving elements on the first of said shafts one larger than the other, a pair of corresponding driving elements on the second shaft one larger than the other, and

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means for shifting one of the driving elements of the second shaft into and out of co-operative alignment with its corresponding element of the first shaft, the proportion between the several elements being such that, when said shiftable element is in co-operative alignment and driving engagement with its co-operating element, the other pair of elements cannot be brought into driving engagement though in co-operative alignment.

904,790. Stuffing Box for Engine Valves. John J. MacMulkin, Huntington, N. Y., assignor of one-fourth to Henry P. Palmer and one-fourth to Charles A. Singer, New York, N. Y. Filed March 10, 1908. Serial No. 420,138.

1. A device of the character described comprising a valve chamber having a valve therein, a stem for said valve projecting beyond said valve chamber, a spring pressed stuffing box mounted on the projected portion of said stem, and a gland for said valve stem mounted in said valve chamber and having an exteriorly projecting end portion that extends into said stuffing box.

904,799. Starting Device. Arthur E. Nelson, Cohoes, N. Y. Filed Sept. 20, 1907. Serial No. 393,858.

1. In a starting device for the crank shaft of an automobile, a casing formed in two parts loosely mounted on the shaft, a ratchet and pulley keyed to the shaft, a lever, one of said parts having worm-teeth, while the other part has means to be co-operated with by said lever and provided with weighted means to co-operate with the ratchet, a stop for said weighted means, and means for transmitting power from said pulley to the part having the worm teeth so as to rewind the spring.

904,837. Cushioning Device for Vehicles. Alexander Carpenter and Charles C. Kissell, Findlay, Ohio. Filed Oct. 30, 1907. Serial No. 399,897.

1. The combination with superposed members, one of said members having a socket and oppositely disposed spaced retaining webs within the socket, and an axle engaging extension depending from said member; of a stem upon the other member and movably mounted within the socket, said stem having a reduced portion movably mounted between the webs, a head upon said reduced portion and insertible between and under the webs, said head and webs co-operating to prevent separation of the members when in a predetermined relation, and a cushioning device interposed between the members.

904,855. Carburetter for Internal Combustion Engines. Giovanni Enrico, Turin, Italy, assignor to F. I. A. T. Societa Fabbrica Italiana Automobili-Torino, Turin, Italy. Filed Nov. 27, 1906. Serial No. 345,359.

1. In a carburetter for internal combustion engines, a hydrocarbon valve, an air valve, and means for connecting said valves so that they may be moved together to vary the quantity of mixture, such means being adapted to permit a relative manual adjustment of such valves and the automatic return thereof to their original relative positions.

904,868. Transmission Gear for Motor Vehicles. Hans T. Hansen, Chicago, Ill. Filed Dec. 26, 1907. Serial No. 408,047.

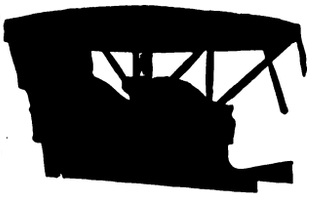
1. The combination with a planetary gear, of means for taking power from one extreme pinion thereof, means to drive the other extreme pinion at a speed not exceeding the speed of the prime mover and for driving the intermediate pinion carrying member at a variable speed, and means for positively preventing relative rotation between the extreme pinion to which power is applied and the intermediate pinion carrying member when moving at substantially equal speeds.

904,998. Self Propelled Vehicle. Charles Richter, Tampa, Fla., assignor to himself and Louis Fromer, Tampa, Fla. Filed Dec. 26, 1907. Serial No. 407,998.

1. A self propelled vehicle adapted to travel on land or on water and having a buoyant body, a common wheel adapted for propelling the vehicle on land or on the water and arranged to rotate in one plane only, and means for adjusting said wheel whereby the latter is adapted for steering the vehicle on water.

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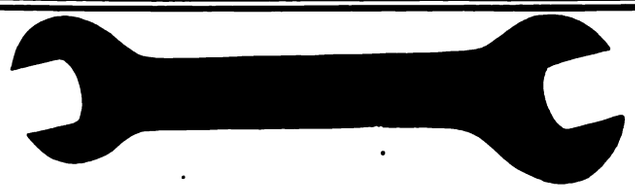
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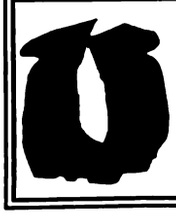
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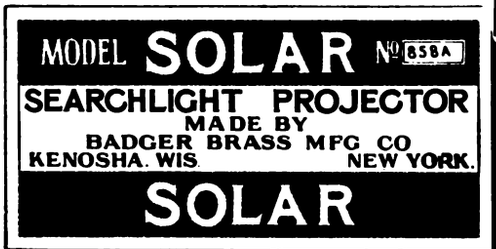
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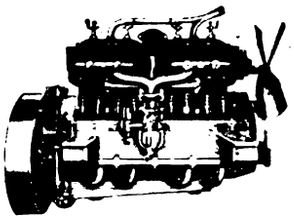
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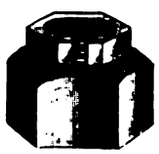
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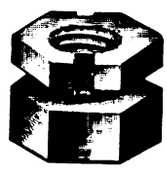
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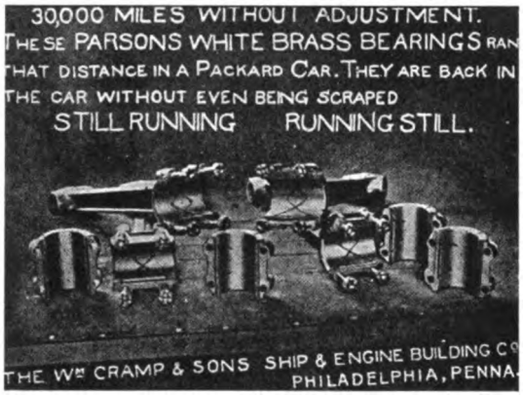
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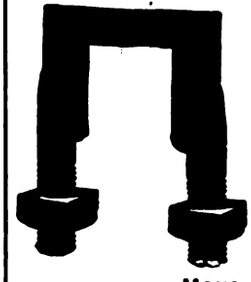
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Volume XIX New York, N. Y., U. S. A., March 25, 1909 Number 26

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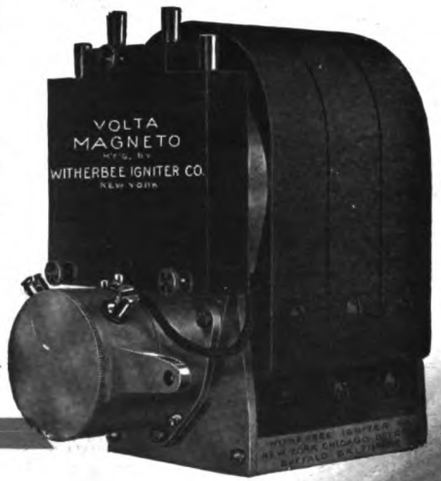
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There's a definite, concrete reason for this—partially expressed in the phrase "The tire that lasts."

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